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Homeownership Gaps Among Low-Income and Minority Borrowers and Neighborhood

PD&R

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Prepared for:
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Preface

Today, Americans are more likely than ever to own their own homes. The annual homeownership rate stands at an all-time high with 69 percent of American families sharing this experience. Homeownership not only provides families with the single largest investment of their lifetimes, but also strengthens communities, fosters civic pride and provides children with a stable living environment.

At the same time, many families do not share the same opportunities and too many face barriers to homeownership. Indeed the rate of homeownership for minority families continues to lag behind the national average.

To address this problem head on, in June 2002 President Bush issued a bold challenge to the nation: to create an additional 5.5 million new minority homeowners by 2010. Already, significant progress has been made toward achieving this goal. Clearly, more must be done to overcome obstacles to expand homeownership opportunities for all Americans.

This study conducted by HUD's Office of Policy Development and Research is an important part of the effort to achieve the President's challenge. By identifying specific obstacles to homeownership – particularly for minority families – we will be better able to craft policies to overcome them.

This study, through careful research, identifies several key barriers accounting for the homeownership gap. Importantly, it finds that these barriers are often shared across ethnic and racial lines and include differences in income, wealth, marital status, and age of household.

The report highlights in particular the problem confronting many families - a lack of savings for downpayment and closing costs. Indeed, President Bush has already acted to address this obstacle, by signing into law the American Dream Downpayment Initiative in December 2003. This program has already distributed $162 million in downpayment funds to over 400 State and local governments. The FY 2006 Budget requests $200 million to fully fund the Initiative.

In addition, the President has proposed two additional tools in the FY 2006 Budget to remove the barriers to homeownership:

- The Zero Downpayment Mortgage to provide considerable help to first-time buyers with limited savings to purchase their own homes; and

- A new Single Family Homeownership Tax Credit that will increase the supply of homes affordable to low-income families

Finally, the report makes clear that racial discrimination continues to play a role in the homeownership gap. The Administration is committed to enforcing the nation's fair housing laws to stamp out this unfair and illegal practice.

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Executive Summary

Introduction

Homeownership rates currently stand at historically high levels for all segments of the U.S. population. Nevertheless, dramatic gaps in homeownership rates have been stubbornly present over the last several decades, and even increased somewhat during the decade of the 1990s. As of 2004, the white homeownership rate was 76 percent while African-American and Hispanic homeownership rates remained below 50 percent, and the Asian rate was 60 percent. At the same time households with very-low income had a homeownership rate that was 37 percentage points below the rate for high-income households.

Understanding the determinants of homeownership rates and gaps is important because homeownership is widely believed to provide a variety of benefits for both individuals and communities. Homeownership expands individual opportunities to accumulate wealth, enables a family to exert greater control over its living environment, creates incentives for households to better maintain their homes, and may benefit children of homeowners. Homeownership also benefits local neighborhoods because owner-occupiers have a financial stake in the quality of the local community.

In light of the many potential benefits of homeownership, the fact that homeownership rates first declined and then stagnated during the 1980s and into the early 1990s became a cause for concern for the federal government. First, Secretary Jack Kemp set a goal and initiated efforts to create one million new homeowners. Then in 1994, at the President's request, the U.S. Department of Housing and Urban Development (HUD) began work to develop a National Homeownership Strategy with the goal of lifting the overall homeownership rate to 67.5 percent by the end of the year 2000. While the most tangible goal of the National Homeownership Strategy was to raise the overall homeownership rate, in presenting the strategy HUD pointed explicitly to declines in homeownership rates among low-income, young, and minority households as motivation for these efforts. And in June of 2002, President Bush announced a joint public/private initiative to increase minority homeownership by 5.5 million households by the year 2010.

Purpose and Approach of the Study

With these issues as a backdrop, this study has three main goals: to synthesize what is known about the determinants of gaps in homeownership rates by income, racial, and ethnic status; to identify the types of policies that are most likely to be effective in narrowing these gaps; and to identify promising areas for further research about the causes of gaps in homeownership rates.

The first chapter presents a detailed summary of the report's findings. Chapter 2 presents a conceptual framework for analyzing the determinants of homeownership. This framework is used to identify which factors contribute to observed homeownership differentials by income and race. Chapter 3 presents detailed information on trends in homeownership rates by race, ethnicity and income, including trends in key demographic characteristics of the population over time and variations in homeownership rates by geographic areas. Chapter 4 then reviews the existing literature employing statistical modeling to identify the relative importance of various contributing factors to overall observed homeownership gaps. Homeownership gaps are separated into two components: one

being the share of the gap that is explained by observed differences in socio-economic variables among income, racial, and ethnic groups, and the other being an unexplained residual that represents unmeasured factors that include discrimination, lack of information about the home buying and mortgage financing process, and omitted socio-economic variables. Chapter 5 explores policy options for addressing homeownership gaps, including an analysis of the nature of barriers to homeownership, a cataloging of existing efforts to address these barriers, and a review of the literature analyzing the relative importance of the various barriers in producing the observed homeownership gaps.

Conceptual Framework of the Determinants of Homeownership Gaps

From a policy perspective, it would be natural to attempt to eliminate homeownership gaps, ultimately making homeownership equally likely regardless of income, race, and ethnicity. However, homeownership may not be the best financial option for some households. Instead, high transaction costs make ownership very costly for households with a high likelihood of moving, investment risk makes homeownership inappropriate for those with little wealth to risk, and the level of effort necessary to maintain a home may not be feasible for households who either cannot do these tasks themselves or cannot afford to pay for home maintenance. Together, these factors all contribute to differences in the *demand* for homeownership.

On the other hand, *supply* constraints also restrict access to homeownership for some families. These constraints may arise in both the housing and mortgage markets. With regard to housing markets, one factor that may contribute to homeownership gaps is that low-income and minority households tend to be concentrated in central cities due to a combination of economic pressures as well as racial discrimination and segregation. Concentration of these households in cities may contribute to homeownership gaps, as single-family housing, which is more conducive to homeownership, is less common in these areas. One reason for homebuyers' preference for single-family housing may be that multifamily housing is more subject to problems associated with noise, crime, shared access to common space, and additional administrative costs when organizing multifamily units into condominiums suitable for homeownership. Such problems in the housing market are further compounded by evidence of discrimination in mortgage markets. Together, reduced access to single-family housing neighborhoods and reduced accessed to mortgage credit serve to depress minority and low-income homeownership rates.

Homeownership Gaps by Income, Race and Ethnicity: Size, Trends and Contributing Factors

A review of long-run trends in homeownership reveals substantial similarities in these trends by race and ethnicity, indicating that broad demographic, economic, and public policy factors are important in influencing the homeownership trends among all groups. During the two decades following 1940, the nation saw an unprecedented rise in homeownership rates by 18 percentage points. While all racial groups contributed to this rise, the gain in white homeownership rates outpaced the gains among blacks. Homeownership rates generally continued to rise between 1960 and 1980, but at a much more modest pace, gaining only 2.5 percentage points over this period. During this period gains among minorities generally outpaced gains among whites, helping to narrow homeownership gaps. Then during the 1980s, the overall homeownership rate actually declined by a few tenths of a percent, with slight divergences in trends between whites and minorities contributing to widening gaps. Finally, all racial and ethnic groups experienced rising homeownership rates during the 1990s. But

despite these gains, the decennial census of 2000 revealed that differences in homeownership rates between whites and minorities were near their highest levels of the past 60 years.

There are also large differences in homeownership rates by household income. As of 2004, 50.9 percent of very low-income households (those with income below 50 percent of the relevant area median income or AMI) owned their homes, compared to 87.7 percent of high-income households (those with income at or above 120 percent of AMI). Differences in homeownership rates by income are an important factor in understanding homeownership differences by race and ethnicity. Compared to whites, both blacks and Hispanics have much lower incomes, while Asian households have higher incomes. However, after accounting for differences in income levels, homeownership gaps remain for all racial and ethnic minorities, suggesting other factors are at work.

Other factors that contribute to the overall differences in homeownership rates include differences in households' demographic characteristics and geographic location. Key demographic characteristics are age, household type, and education level. Relatively low homeownership rates among blacks and Hispanics are in part attributable to the fact that compared to whites they are generally younger and have lower education levels. Blacks also have fewer married couple households and both blacks and Hispanics have more single-parent families than whites, which also contribute to the observed homeownership gaps. Asians, on the other hand, have household characteristics that are associated with higher homeownership rates. In addition to having income levels that are higher than whites, Asians also have a greater preponderance of married couple households and have higher education levels. The one aspect that serves to depress Asian homeownership rates relative to whites is age, as Asians in the U.S. are much younger on average than whites.

The geographic distribution of the minority population may also contribute to creating gaps in homeownership rates. Compared to whites, minorities are much more concentrated in central cities, which have homeownership rates that are more than 20 percentage points lower than suburban areas. Hispanics and Asians are also disproportionately located in market areas with relatively high housing costs.

Another important factor that contributes to racial and ethnic differences in homeownership rates is the high share of immigrants among the Hispanic and Asian population. Studies of homeownership among immigrants find that factors such as the length of time living in the U.S., English-language ability, and citizenship status affect the likelihood that immigrants will be homeowners. On first entry to the U.S., immigrants are less likely to become homeowners than are native-born individuals with similar characteristics, but they quickly close homeownership gaps. In fact, much of the white-Asian and some of the white-Hispanic homeownership gaps can be attributed to the relatively large numbers of Asian and Hispanic immigrants.

Projections for homeownership rates by race and ethnicity over the next two decades provide some indication of the likely stubborn nature of these homeownership gaps. Estimates that assume that there will continue to be moderate gains in homeownership rates similar to those that existed over the course of the 1990s indicate that the current gaps in homeownership are likely to persist. Despite the fact that these projections estimate that homeownership rates could rise 9.0 percentage points for blacks and 7.6 percentage points for Hispanics from 2000 to 2020, homeownership gaps with whites would only decline by 2.5 percentage points for blacks and 1.1 percentage points for Hispanics. The reason for the persistence in homeownership gaps despite significant increases in minority

homeownership is that factors that favor minority homeownership also favor white homeownership. For this reason, it is appropriate for policy makers to establish goals for increasing the number of minority homebuyers rather than setting goals for the size of racial and ethnic homeownership gaps.

Empirical Evidence on the Determinants of Homeownership Gaps

What then drives the gaps in homeownership rates by race and ethnicity? An important conclusion from the literature reviewed is that most of the homeownership gap can be explained by differences across race and ethnicity in other household attributes that affect demand for homeownership. For example, differences in income, wealth, marital status, and age of the household are found to account for between 15 and 20 percentage points out of the total racial gap of roughly 25 percentage points. From a policy perspective, an important conclusion from this research is that a lack of savings needed to fund downpayments, closing costs, and to pay down other outstanding debt is a particularly important barrier to homeownership. The lack of savings is particularly evident among minority renters, as half of black and Hispanic renters have close to zero net wealth.

The remaining, unexplained difference in homeownership rates of between 5 and 10 percentage points is attributable to a variety of factors, including discrimination in housing markets, differences in understanding of how to successfully navigate housing and mortgage markets, as well as factors not adequately accounted for in the statistical models, including job security, anticipated mobility, and the like. In that regard, it is important to note that although there is some evidence in the literature that unexplained race-related gaps have diminished over time, that trend may simply reflect improved data and methods used by more recent studies. On the other hand, evidence from fair housing studies, accept-reject studies of mortgage applications, and the well-known concentration of minority households in central-city, high-density housing suggest that discrimination and segregation likely contribute to the unexplained portion of the gaps as well. Surveys of consumer attitudes also suggest that information gaps may also contribute to differences in homeownership rates by race and ethnicity. One implication from these findings is that additional policy initiatives that target information gaps or discrimination in housing and mortgage markets – though potentially important from a social and ethical standpoint – are likely to have a smaller impact on reducing present day racial (and income) gaps in homeownership rates than efforts to address differences in wealth.

Policy Options for Reducing Homeownership Gaps

The first step in thinking about policy options for closing homeownership gaps is to identify the principal constraints on greater homeownership by low-income and minority households. For policy purposes, the most important constraints are on the supply side, as these barriers limit the ability of households who might otherwise choose to be owners from purchasing a home. Homeownership deterrents on the demand side largely relate to factors that make the investment risk of owning too great for some households. While some efforts to address these risks may be helpful and appropriate, in many cases it will simply be the case that the risk of homeownership is inappropriate for some low-income and low-wealth households.

There are two broad categories of supply-side barriers to homeownership: limitations on access to mortgage financing needed to purchase homes, and, in some markets, a lack of supply of housing units that are affordable and attractive options for low-income households. Much of the research on the importance of these barriers to homeownership has focused on access to mortgage finance. An

important feature that restricts low-income household access to mortgage finance is the set of underwriting guidelines used by lenders to limit the risk of mortgage default. Lenders require, for instance, that borrowers not exceed maximum debt-to-income ratios and loan-to-value ratios, and that they have a history of having met their credit obligations. The tendency of low-income families to have low levels of income and wealth, and also poor credit histories, all serve to limit low-income households' access to mortgage finance. In addition, lack of understanding about the mortgage process and racial discrimination further impair the ability of low-income and minority households to obtain mortgage financing.

The most informative studies about the likely impact of changes in the mortgage market on homeownership rates are those that use statistical models to estimate the impact on the probability of homeownership of removing these constraints. These studies have consistently found that a lack of wealth to meet downpayment requirements and, to a lesser extent, poor credit are more important barriers to homeownership than a lack of income to meet limits on monthly payments. The conclusion about the significant role played by wealth constraints in limiting homeownership opportunities is also supported by research using a synthetic underwriting approach, which examines the share of households that could qualify to purchase a modestly priced home under alternative mortgage underwriting and subsidy programs.

Few studies have attempted to estimate the impact of other supply side barriers that limit access to homeownership, such as racial discrimination, lack of information about housing and mortgage markets, or access to suitable housing for ownership. The little research that has been done suggests that while these barriers do restrict homeownership, these constraints are not as important as the lack of wealth.

Given the consistent finding that a lack of savings is the single most important barrier to homeownership, downpayment assistance in the form of loans or grants are an obvious policy response to the challenge faced by families with limited savings. But it is important to note that for many households it is not just the downpayment requirement that is binding. In fact, given the introduction of low or zero downpayment loans in the last decade, the downpayment itself may be becoming less of a constraint over time. The importance of savings is due in part to the fact that it is related to a range of financing requirements, including the downpayment, closings costs, reserve requirements, and the level of outstanding debts. The influence of savings on the willingness and ability of families to take on financial risk is also important. Thus, policies that address a lack of savings by low-income and minority families could have an important impact on homeownership rates. Examples of such policies include individual development accounts that give financial incentives for households to save for specified goals, and financial management training that help households develop the skills and habits needed for savings accumulation.

Aside from homeownership-specific policies, research findings described in this report imply that policy initiatives that address the broader problem of racial and ethnic differences in socioeconomic standing are also needed to close homeownership gaps. Such factors include enhanced job opportunities, job security, and household stability (i.e. marital status) for minority households, which are especially important determinants of the demand for homeownership.

In thinking about policy options for closing homeownership gaps it is also helpful to keep in mind the magnitude of the issue. According to the 2003 CPS, there were 13.3 million black households, 11.3

million Hispanic households, and 4.0 million Asian households. In order to raise the homeownership rate of each of these groups by 1 percentage point, there would have to be an increase of 133,000 black homeowners, 113,000 Hispanic homeowners, and 40,000 Asian homeowners, for a total of 286,000 minority households. In terms of income, there were 37.1 million households with income less than 50 percent of AMI (area median income) and 21.5 million households with income between 50 and 80 percent of AMI. In order to raise homeownership rates of these groups by 1 percent there would have to be an increase of 371,000 and 215,000 homeowners in these income classes. Thus, in order to close homeownership gaps by race and income by a single percentage point, public policy needs to assist several hundred thousand households. The implication is that making substantial progress in closing homeownership gaps by income and race-ethnicity will require moving literally millions of households into homeownership.

Perhaps more importantly, even if increases in minority homeownership of this magnitude are achieved, the homeownership gaps between whites and minorities may not narrow if whites also experience increases in their homeownership rates. Indeed, between 1993 and 2004 homeownership rates increased among blacks and Hispanics by 7.7 and 8.7 percentage points, respectively. Yet, because white homeownership rates increased by 5.8 percentage points, the homeownership gaps with whites only narrowed by 1.9 and 2.9 percentage points, respectively. For this reason, it is probably more relevant to establish policy goals for increasing minority homeownership rates rather for reducing gaps between minority and white rates.

Further Efforts Needed to Enhance Our Understanding of Homeownership Gaps

Our final conclusion is that much remains to be learned. At many points in the chapters to follow, the study notes the need for further research. While the tenure choice literature is quite rich, there is a lack of studies examining the impact of investment risk for low-income households and how this affects their demand for homeownership. Information on the tendency and ability of households to sustain homeownership is also scant. On the supply side, studies on the degree to which racial and income segregation limit access to neighborhoods and housing stock conducive to homeownership also are very limited. In contrast to these deficiencies, the existing literature has answered many of the questions most pressing with regard to the impact of mortgage financing constraints on homeownership. Finally, more research is needed examining the effectiveness of specific policies designed to support homeownership. In particular, studies on the effectiveness of counseling and education programs in spurring homeownership and on the effectiveness of specific efforts to remedy a lack of wealth are almost non-existent.

Chapter One
Introduction and Report Summary

1.1 Introduction

This study has three goals. One goal is to synthesize what is known about the determinants of homeownership rates by income, racial, and ethnic status. We focus on the differences in homeownership rates among these groups, that is, the "gaps" in homeownership rates. A second goal is to identify the types of policies that are most likely to be effective in closing these homeownership gaps. A third goal is to identify promising areas for further research about the causes of gaps in homeownership rates.

Understanding the determinants of homeownership rates and gaps is important because homeownership is widely believed to provide a variety of benefits for both individuals and communities. The benefits of homeownership for individuals include the ability to accumulate wealth through principal payments and asset appreciation and the ability to have greater control over their living environment. Owning a home results in greater investment by owners in their neighborhood and home because they are the recipients of changes in the value of the property. The incentive to invest in a home results in better maintenance and an improved home environment. A better home environment also may benefit resident children. The incentive to invest in a neighborhood may lead to greater participation in neighborhood and community organizations, thus contributing to improving local schools or reducing local crime. Homeownership also increases the stability of households and communities and this stability is thought to increase household investment in neighborhoods.

Given the many potential benefits of homeownership, the fact that homeownership rates first declined and then stagnated during the 1980s and into the early 1990s became a cause for concern. In 1994, at the President's request, the U.S. Department of Housing and Urban Development (HUD) began work to develop a National Homeownership Strategy with the goal of lifting the overall homeownership rate to 67.5 percent by the end of the year 2000. While the most tangible goal of the National Homeownership Strategy was to raise the overall homeownership rate, in presenting the strategy HUD pointed explicitly to declines in homeownership rates among low-income, young, and minority households as motivation for these efforts.

Also of concern is the gap in ownership rates comparing high with low-income households and white and minority households. Over the period beginning in 1993, the national homeownership rate rose fairly sharply, achieving the goal of 67.5 percent by the third quarter of 2000 and reaching an all time high of 69.0 percent in 2004. The gains in homeownership since 1993 have been widely shared, with homeownership rates rising 5.8 percentage points for whites, 7.7 percentage points for blacks, 8.7 percentage points for Hispanics, and 7.0 percentage points for Asians. The somewhat greater gains in homeownership among minorities helped to close the gap between whites and minorities. But despite these gains, the gaps remained large. In 2004 the gap between white and black homeownership rates was 26.3 percentage points, which is only one-tenth of a percentage point lower than in 1960. Meanwhile, the homeownership gap between whites and Hispanics was 27.9 percentage points.

Similarly, while homeownership rates rose somewhat faster for households with incomes below the median for their area compared to households with incomes above the area median, the homeownership gap between these two groups remained high.

Our study presents a conceptual framework for analyzing the determinants of homeownership. This framework is then used to identify which factors contribute to observed homeownership differentials by income and race. We review the existing literature on homeownership gaps and identify what is known about the relative importance of the contributing factors. We separate gaps in homeownership rates into two components, one being the share of the gap that is explained by observed differences in socio-economic variables among income, racial, and ethnic groups and an unexplained residual that represents unmeasured factors that include discrimination, lack of information about the home buying and mortgage financing processes, and omitted socio-economic variables. The size of and trends in homeownership differences by income and minority status as well as likely future trends in homeownership rates and the homeownership gap are reported.

Finally, we identify the principal policy options that have been employed to promote homeownership and the types of barriers that these policies are designed to overcome. The existing literature on the actual or potential effectiveness of these policies for promoting homeownership is evaluated. Throughout the study, we suggest the most promising directions for further research to clarify our understanding of the causes of the disparities in homeownership by income and race, changes in homeownership rates over time, and the effectiveness of alternative policy approaches for promoting homeownership.

1.1.1 Methodology

The primary methodology of this study is the identification, review, and synthesis of the relevant literature from academic, public policy, government, and housing industry sources. We also provide supporting descriptive analysis to document levels and changes in homeownership rates for key segments of the population.

Identification of the Relevant Literature

The literature search identified theoretical, analytical, and descriptive studies of the factors impacting a household's tendency to become and remain a homeowner. Also identified were a substantial number of empirical studies of homeownership gaps among particular income, racial, and ethnic groups. Published research was identified through searches of bibliographic databases and unpublished research was identified through a search of the Internet and through contact with active researchers in the field.

Supporting Descriptive Analysis

The existing literature provides snapshots of homeownership rates and gaps for particular years and population groups. A few studies depict trends in homeownership rates for particular time periods and population groups. However, differences in data sources and idiosyncratic aspects of the studies make global comparisons difficult. To overcome these inconsistencies, we provide a comprehensive overview of homeownership rates and gaps for white, black, Hispanic, and Asian households from 1940 through 2000. Our primary data sources include the Decennial Census and the Current Population Survey (CPS). The Annual Demographic Survey is conducted each year as part of the

March CPS. This supplement includes an additional sample and more detailed questions about income and employment status.

1.2 Outline and Summary of the Report

The report is structured to address each of the goals of the study as outlined above. Chapter Two presents a conceptualization of the tenure choice decision with the goal of identifying the factors that contribute to observed differences in homeownership rates by income and race. This conceptualization provides a framework for presenting and interpreting the information discussed in the report. Chapter Three presents descriptive data and analysis of trends in homeownership rates by income and race and across geographic areas. Chapter Four provides a review of the empirical literature related to each of the factors identified in the conceptual framework as factors contributing to the observed differences in homeownership rates. Finally, Chapter Five discusses the principal policy approaches that have been used to promote homeownership, identifies the factors that these approaches are designed to address, and reviews existing literature that analyzes the actual or potential efficacy of these policies in increasing homeownership. The remainder of this section will summarize the report findings from each of these chapters.

1.2.1 Conceptual Framework of the Determinants of Differences in Homeownership Propensities

The conceptual framework is derived primarily from an economic perspective. In keeping with this perspective, the determinants of homeownership are separated into demand and supply factors. The demand for homeownership is clearly an important organizing principle in the literature review, because families choose whether or not to seek out homeownership opportunities. In contrast, the supply of homeownership opportunities is less well defined because owner-occupied housing is not directly produced – any housing unit can be either owned or rented. But supply side effects influence access to homeownership and homeownership rates. Mortgage underwriting criteria, for example, affect the supply of mortgage credit available to individual households and hence the supply of homeownership opportunities. In addition, many lower income and minority inner city neighborhoods are filled with older multifamily buildings. The forces governing the supply of such buildings in these neighborhoods – including filtering mechanisms in the housing market and differences or constraints on minority neighborhood choice – affect the supply of different types of housing stocks over which minority and low-income families can choose. This feature of housing markets affects homeownership rates given that single-family stocks are usually more conducive to homeownership relative to older multifamily units. The demand-supply conceptual structure is general in its overall design and it provides an effective way to organize the discussion of the determinants of homeownership gaps and the potential to narrow these gaps.

Household Formation

We begin by reviewing literature on household formation and the possibility that the decision to form a household is simultaneously determined along with the decision to own or rent a home. Homeownership rates are by definition equal to the number of owner-occupying households in the population divided by the total number of households present. Differences in the propensity to form a household could contribute to income, racial and ethnic gaps in homeownership rates. Factors contributing to differences in household headship rates include differences in marriage, divorce, and

widowhood rates, differences in the typical age that a youth leaves the parental home, and differences in tendencies to reside in group quarters such as college dormitories and prisons. Our review of the literature finds that substantial changes in these factors have occurred during the last thirty years and substantial differences in rates are present comparing income, racial, and ethnic groups. We conclude that household formation is potentially very important to the explanation of why gaps in homeownership are present and how these gaps have changed, but the existing literature that measures the impact is sparse.

Demand Side Determinants of Homeownership

Given that the decision to form a household has been made, the next question is what drives the decision to own versus rent a home. Consider first the demand side. Because housing is a durable asset, demand for homeownership is sensitive to investment considerations and, therefore, is subject to all of the considerations and factors that influence a family's preferred portfolio. The expected rate of return from investing in housing is important. Also, families sensitive to financial risk such as low-income households are less likely to want to own a home, all else equal. The return on homeownership is especially sensitive to household mobility given the very high transactions costs of selling an owner-occupied home relative to moving from a rental unit. Evidence reported in Chapter Two suggests that among renters, lower-income families are more mobile. This implies that low-income families will be less likely to want to own their homes. The Federal tax code provides generous subsidies to homeowners by not taxing imputed rent and allowing deductions for mortgage interest and property tax payments. But the benefits from such favorable tax treatment accrue disproportionately to higher-income households with higher marginal income tax rates and a greater propensity to itemize. Because minorities typically have lower income relative to white households, these considerations contribute to racial and ethnic gaps in homeownership rates as well.

The examples just mentioned highlight the investment return on housing. However, households also receive benefits from residing in a dwelling; that is, they have a consumption demand for shelter. Consumption demand is sensitive to family size, income, and other traditional determinants of consumer demand. A comprehensive approach to understanding households' demand for home ownership must account for the interplay of both consumption and investment demand.

We adopt a theoretical framework developed by Henderson and Ioannides that focuses on the interplay of investment and consumption demand for housing. If investment demand for housing for a given family is large relative to consumption demand, the family could choose to own a home that satisfies its portfolio motives and rent out any remaining unwanted space (e.g. a basement suite, second house, etc.): in this case the family is financially better off if it owns. Alternatively, if a family's consumption demand is large relative to investment demand, for example when family size is large but the family believes house prices will decline, purchasing a home sufficient to satisfy the consumption needs of the family would constitute a bad investment. In this case the family is financially better off if it satisfies its consumption demand by choosing to rent its principal residence.

The Henderson-Ioannides model, while stylized, offers guidance in organizing the demand side of the literature on the determinants of housing tenure choice and homeownership gaps. On the consumption side, all of the usual determinants of consumer demand are likely to apply (e.g. family size, income, control and security of the dwelling, etc.) and thus need little elaboration. On the investment side, we consider factors that affect the rate of return to housing investments and how

these factors create differences in the rate of return among income, racial, and ethnic groups. A discussion of each of the investment related factors follows.

Transactions costs are an important determinant of a household's tenure choice. The cost of selling a home is substantially greater than the cost of moving from rental housing because of the time and effort needed to prepare for and manage the sale, realtor fees, legal fees, and taxes. Further, there are differences in costs among homeowners because families who do not expect to move soon can spread out the high transactions costs of moving to and from owner-occupied housing over a longer period of time. This serves to increase the return on homeownership among relatively immobile families, increasing their demand for homeownership. Families that experience marital or financial instability are likely to have a greater frequency of moves, reducing the return on owner-occupied housing.

It is well established that various provisions of the tax code reduce the cost of housing for owner-occupiers relative to renters; these provisions include deductions for mortgage interest and property tax payments and no taxation of imputed rent and capital gains. Moreover, the benefits from such favorable tax treatment typically increase with the marginal income tax rate of the household and the resulting higher likelihood that the household itemizes instead of taking the standard deduction. Hence, because the financial returns from these tax benefits rise with income, those with relatively high incomes will be more likely to become owner-occupiers.

The characteristics of the housing stock may vary across geographic locations in a manner that affects the risk and return on homeownership and resulting homeownership rates. The risk of substantial maintenance and renovation costs is greater in older housing. This housing is typically located in inner city areas. Further, inner city areas tend to be populated by low income and minority households. Because low-income families are less able to absorb financial shocks such as catastrophic housing repair bills, they are less likely to prefer owner-occupation of housing located in inner city areas.

The investment return to housing also depends on expected house price appreciation (quality adjusted). We review the literature that measures spatial differences in observed house price appreciation and find evidence of substantial variation by location, at least in the short run. However, the correlation of the pattern of house price changes with household income, race, and ethnicity is unclear. There is evidence that the variance of house price changes is larger for houses with relatively low prices, suggesting the risk of investment is greater for these houses. Because low-priced houses are mostly purchased by low-income households, the Henderson-Ioannides model suggests that this high variance will deter the likelihood that these properties will be owner occupied.

It should be emphasized that all of the factors that affect the return on homeownership influence the flow cost of housing services for an owner-occupier. That flow cost – most often referred to as the user cost of owner-occupied housing – is analogous to the rent paid by a renter for the flow of housing services over a given period of time (such as a month or a year). In the case of an owner-occupier, such measures must necessarily take into account the cost of financing the home, maintenance costs, the anticipated length of stay in the home (which affects the annualized transactions cost of buying and selling the home), expected capital gains, as well as favorable tax provisions that reduce the cost of owner-occupied housing. As noted above, many of the components of the user cost of homeownership vary by income and by the location of the property. For these

reasons, the user cost of homeownership likely differs across families by race, ethnicity, and income and helps to explain observed differences in homeownership rates.

Supply Side Determinants of Homeownership

The conceptual framework is completed by considering supply side factors that affect the ability of families to attain homeownership. Most obvious, the supply of mortgage credit has a direct effect on the ability of most low-income and minority households to buy a home. We review studies that explain why competitive lenders impose binding credit constraints instead of rationing mortgage credit through interest rates. The nature of the loan contract exposes lenders to default and late-payment risk. Under certain market conditions, lenders may respond by offering credit at below market clearing rates and then using credit scores to ration out loanable funds to the lowest risk borrowers. Many studies have provided empirical evidence on the extent and manner in which credit barriers restrict access to homeownership. An important finding from these studies is that borrowing constraints continue to impede homeownership for underserved groups in the population, including younger families, minorities, and low-income households.

A related set of studies provides evidence of racial discrimination in mortgage markets. Such discrimination provides a different but clearly important explanation for differential access to mortgage credit. Because minorities often are of lower income and wealth, and have less secure employment, they may be subject to statistical discrimination in loan markets to the extent that lenders use race and ethnicity as predictors of hard-to-observe risk attributes. Such behavior is illegal in the mortgage market. Nevertheless, a number of studies have provided evidence of discrimination in mortgage markets, most prominently, a study of the Boston mortgage market in the 1980s conducted by members of the Boston Federal Reserve Bank. Regardless of whether the underlying discriminatory behavior is based on statistical discrimination or outright bigotry, it reduces minority homeownership rates.

Partly in response to concerns about minority access to mortgage credit, beginning in the early 1990s a variety of very low-downpayment mortgage products became available through conventional lenders. Given that research has consistently found that a lack of wealth is a significant constraint to accessing mortgage financing, these loan products offer the possibility of raising homeownership rates. Despite these mortgage product innovations, the very low level of wealth among minority renters is still a cause of concern. Half of black and Hispanic renters in 1998 had close to zero net wealth. For these families, even very low-downpayment mortgages will likely not be sufficient to make homeownership financially feasible. Moreover, these very low wealth families may rationally prefer to rent rather than subject themselves to the financial risks that go along with homeownership. Another supply side factor is the type of housing stock available in different neighborhoods. Single-family homes tend to be more conducive to owner-occupation relative to older, multifamily buildings. This could arise because of preferences for such housing among prospective homebuyers; that is, single-family housing and homeownership could be viewed by households as complementary goods. In addition, single-family housing does not typically entail common property issues. In contrast, in a multifamily building management and maintenance of common space and controls for noise and safety create administrative costs when organizing the units into condominiums suitable for homeownership. For these reasons, access to single-family housing may foster homeownership. We find evidence that among middle- and higher-income households, racial and ethnic gaps in homeownership largely disappear after controlling for central city location and the type of structure in which the family resides (e.g. single family versus multifamily). We also find that minorities of all

income levels are more likely to live in high-density central city housing relative to comparable white households.

The literature suggests several reasons why low-income and minority families are found more often in high-density inner city areas with older multifamily housing. Long-standing arguments in urban economics suggest that low-income families are more likely to live in the inner cities and higher income families in the suburbs. This argument hinges on the idea that the demand for land increases more quickly with income than do commuting costs. Access to public transit has also been noted as a reason for why low-income families without cars may seek out central city locations. Alternatively, the spatial mismatch literature has found evidence that suburban housing market discrimination has restricted minority access to suburban markets. Recent studies continue to find evidence of differences in access to suburban neighborhoods. For example, evidence suggests that minority households face discrimination in the housing search process. In addition, there is some evidence that white and minority home-seekers differ in their likelihood of using realtor services.

1.2.2 Homeownership Differences by Income, Race, and Ethnicity: Size, Trends, and Contributing Factors

This chapter of the report presents data that describe homeownership gaps and inter-temporal trends in these gaps. There are substantial similarities in long-run trends in homeownership rates by race and ethnicity indicating that broad demographic, economic, and public policy factors are important in influencing the homeownership trends among all groups.

Decennial census data report that during the two decades following 1940, the nation saw an unprecedented rise in homeownership rates. The overall homeownership rate rose by more than 18 percentage points, from 43.6 percent to 61.9 percent. All racial groups contributed to this rise as the white homeownership rate rose by 17.7 points from 45.6 percent to 64.3 percent, the black rate rose by 15.3 points from 22.8 percent to 38.1 percent, and the Asian rate rose by 27.8 points from 16.3 percent to 44.1 percent.

Homeownership rates generally continued to rise between 1960 and 1980, but at a more modest pace. During this period gains among minorities generally outpaced gains among whites. The white rate increased by 4.2 points, while the black rate rose by 7.2 points and the Asian rate rose by 7.9 points.

During the 1980s, the overall homeownership rate declined by 0.2 points. This decline was comprised of a small rise in the white homeownership rate of 0.5 points coupled with declines among all minority groups: 1.4 points among blacks, 1.0 points among Hispanics, and 0.1 points among Asians.

All racial and ethnic groups experienced rising homeownership rates during the 1990s. Census data indicate that between 1990 and 2000, homeownership increased by 3.3 percentage points among whites, 2.4 percentage points among blacks, 3.0 percentage points among Hispanics, and 2.2 percentage points among Asians. However, because white households experienced the largest increase in homeownership, all of the white-minority homeownership gaps increased over the decade.

In 2000, we find that the white-black homeownership gap was near the highest levels of the past 60 years, as measured by decennial census data. The white-Hispanic homeownership gap has also

generally increased over the last few decades, rising from 23.0 percentage points in 1970 to 27.0 points in 2000. A significant factor in this widening gap is the rapid rise in Hispanic immigration, which has served to depress overall Hispanic homeownership rates. The greatest decrease in the homeownership gap has occurred among Asians when it dropped from 29.3 percentage points in 1940 to 16.5 percentage points in 1980, rising slightly to 18.3 in 2000. As with Hispanics, the increase in the gap between 1980 and 2000 is in part attributable to the growth in the Asian immigrant population.

An alternative data source is the Current Population Survey (CPS). Our study discusses why Census and CPS data differ in relatively small but important ways. Even though both data sets agree that the overall trend in homeownership rates is very similar, they differ in their conclusions about changes in the white-minority gap in homeownership rates. According to CPS data, black and Hispanic homeownership rates increased more sharply than white rates beginning in about 1993 when the size of the gap peaked. At that point the white-black gap reached 30.8 percentage points while for Hispanics the gap was 28.2 percentage points. The CPS finds that between 1993 through 2003 the white-black homeownership gap fell by 1.6 percentage points, while the white-Hispanic gap fell by 2.1 percentage points. The white-Asian homeownership gap, however, increased over this period, as increases in the Asian homeownership rate did not keep pace with gains among whites. According to both data sets, the sizes of white-minority homeownership gaps remain high by historical standards. As of 2003, the homeownership rate among whites was 26.6 percentage points higher than the black rate (CPS data), 28.7 percentage points higher than the Hispanic rate, and 19.1 percentage points higher than the Asian rate. In comparison, in 1980 these gaps were 23.2, 25.1, and 16.5 percentage points, respectively.

We find there are large differences in homeownership rates by household income. As of 2003, 51.2 percent of very low-income households (those with income below 50 percent of the relevant area median income or AMI) owned their homes, compared to 86.6 percent of high-income households (those with income at or above 120 percent of AMI). As described in Chapter Two, there are a number of reasons why homeownership is lower among low-income households including the financial risks of homeownership, few tax advantages, and the high transaction costs of buying and selling homes. We find that over the period from 1970 to 1986, the homeownership rate for very low-income households declined while that for high-income households increased. The result was the gap grew from 30.1 to 38.5 percentage points. This trend modestly reversed in the 1990s and the gap fell to 36.1 percentage points.

Differences in homeownership rates by income are an important factor in understanding homeownership differences by race and ethnicity. Compared to whites, both blacks and Hispanics have much lower incomes, while Asian households have higher incomes. However, after accounting for differences in income levels, homeownership gaps remain for all racial and ethnic minorities, suggesting other factors are at work. White-minority homeownership gaps are largest for very low-income households, ranging from 20 to 25 percentage points. Among high-income households the white-minority gap is 10 to 15 percentage points.

Other factors that contribute to the overall differences in homeownership rates include differences in households' demographic characteristics and geographic location. Key demographic characteristics are age, household type, and education level. Homeownership is higher for older households, married couples, and those with higher levels of education, and lower for other families with children (largely

single-parent families) and single persons, and those with low levels of education. Income is strongly associated with all of these demographic characteristics, as income rises with age, is higher for married couple families, and increases with education level.

Relatively low homeownership rates among blacks and Hispanics are in part attributable to the fact that, compared to whites, they are generally younger and have lower education levels. Blacks also have fewer married couple households and both blacks and Hispanics have more single-parent families than whites, which also contributes to the observed homeownership gaps. Asians, on the other hand, have household characteristics that are associated with higher homeownership rates. In addition to having income levels that are higher than whites, Asians also have a greater preponderance of married couple households and have higher education levels. The one aspect that serves to depress Asian homeownership rates relative to whites is age, as Asians in the U.S. are much younger on average than whites.

A lower percentage of married blacks than whites accounts for about 8 percentage points of the homeownership gap. Black-white age differences account for about a 5 percentage-point difference, and differences in education levels account for about a 2 percentage points of the homeownership gap. Among Hispanics, differences in age and education levels account for 5 to 7 percentage points of the difference from the white homeownership rate. Among Asians, differences in age contributes about 4 percentage points to observed differences from white homeownership rates, while the shares of married couples and education levels lead to higher homeownership rates compared with whites.

The geographic distribution of the minority population may contribute to creating gaps in homeownership rates. Central cities have homeownership rates that were 23.0 percentage points lower than suburban areas in 2001. Minorities are much more concentrated in central cities than whites. For example, 53.5 percent of black households live in central cities compared to only 22.9 percent of white households. The difference between suburban and central city homeownership rates is largest for the very low-income households at 24.5 percent, but even among the highest income households homeownership rates are 12.6 percentage points lower in central city areas. Thus, even for these relatively unconstrained households, homeownership is less likely in central cities, reflecting supply constraints or location-specific factors such as high risks on investments in residential property. These observations suggest that some aspect of central city location other than income affects homeownership rates. If minority households were distributed across regions and metropolitan areas in the same way as white households, the black homeownership rate in 2001 would be 2.4 percentage points higher, the Hispanic rate would be 5.0 percentage points higher, and the Asian rate would be 4.0 percentage points higher. These effects are relatively small compared with the total size of the white-minority gap.

Chapter Three of the study also reviews three other topics: the impact of immigration, trends among first-time homeowners, and projections of homeownership rates. Studies of homeownership among immigrants find that factors such as the length of time living in the U.S., English-language ability, and citizenship status affect the likelihood that immigrants will be homeowners. On first entry to the U.S., immigrants are less likely to become homeowners than are native-born individuals with similar characteristics, but they quickly close homeownership gaps. Much of the white-Asian and some of the white-Hispanic homeownership gaps can be attributed to the relatively large numbers of Asian and Hispanic immigrants.

An analysis of data on first-time homebuyers from the American Housing Survey (AHS) shows that during the 1990s the number of first-time homebuyers increased significantly. In the two-year period of 1989-1990 there were 3.1 million first-time homebuyers. By 1999-2000 this number had increased by 34 percent to 4.2 million. In comparison, repeat homebuyers only increased by 11 percent over this same period. Importantly, minorities made an important contribution to the increase in first-time homebuyers, with their share of this group rising from 22.9 percent to 31.5 percent over the same period. An analysis of changes in characteristics of minority first-time buyers over the 1990s finds that there was a rising share of moderate- and high-income households and younger households.

Projections for homeownership rates over the next two decades depend on the underlying assumptions. A low growth rate assumption mimics the homeownership trends of the early 1990s, a high series mimics homeownership trends from the late 1990s, and the average of these two rates forms the middle growth rate. In all cases, the current gaps in homeownership are likely to persist. Using the middle series, homeownership gaps with whites will decline by 2.5 percentage points for blacks and 1.1 percentage points for Hispanics—despite the fact that the homeownership rates are projected to rise 9.0 percentage points for blacks and 7.6 percentage points for Hispanics. The white-Asian gap is projected to increase by 2.2 percentage points as immigration continues to dampen homeownership among Asians. The reason for the persistence in homeownership gaps despite significant increases in minority homeownership is that factors that favor minority homeownership also favor white homeownership.

1.2.3 Causes of Racial Gaps in Homeownership Rates

Despite the gains made by minorities since the 1960s in both economic affluence and in legal protection from housing market discrimination, there has been little improvement in minority homeownership rates over the last thirty years relative to white homeownership rates. Studies of racial and ethnic differences in homeownership rates have consistently found that two broad factors contribute to minority households having a lower probability of homeownership. One factor relates to differences between whites and minorities in a range of demographic and economic factors that are associated with homeownership. The other factor relates to unobserved variables that include discrimination and a lack of understanding about the home buying and mortgage finance processes.

Early studies of homeownership gaps assumed that the factors influencing households to become homeowners were the same for minorities and whites and that both groups' behavioral responses to these factors were the same. The studies separated the gap into two components: that due to differences in endowments and an unexplained residual amount. In these early studies, the magnitude of the residual shortfall in the probability of homeownership attributed to race rather than endowments has ranged up to 20 percentage points depending on the time period and the sample. Subsequent studies dropped these restrictive assumptions and followed a more general technique to decompose the homeownership gap into effects due to differences in socio-economic variables and the residual amount.

Over time there has been a downward trend in the estimated size of the residual component of the white-minority homeownership gaps. Also, studies of new households and recent movers found single digit gaps in homeownership once differences in endowment were taken into account. The decreasing size of the residual could occur because recent studies have used a more comprehensive set of socio-economic explanatory variables as the quality of data sets improved. Or, it could be due

to a smaller impact of discrimination in the mortgage and housing market. The latter conclusion is consistent with the establishment and enforcement of a number of policies that monitor mortgage markets and brokerage services and that enforce fair housing laws. To date, most studies that have noted a decline in the residual component of the homeownership gap have attributed this change to reduced discrimination. However, it is also clear that researchers are now including more and better explanatory variables in their analyses, thus reducing the size of the unexplained residual.

Current estimates of the residual gap appear to be in the range of five to ten percentage points. This remaining unexplained gap may well be accounted for by potentially important explanatory variables that have not generally been captured by these studies, such as a household's expected mobility, credit history, income variability, willingness to take financial risks, and understanding of the home buying and mortgage finance processes. Thus, it is possible that a future study using a complete set of all relevant explanatory variables will "explain" the entire racial gap in homeownership. However, this finding should not be construed as providing evidence that existing anti-discrimination laws are obsolete. Rather, it is possible that the inter-temporal decline in and current modest-sized race-related residuals from homeownership gap studies result, at least in part, from government policies and oversight regarding discriminatory treatment in housing and mortgage markets. However, the degree to which current government legislation has helped to reduce the size of race-related disparities in homeownership is unknown.

A major limitation of existing studies is the lack of linkage between the theory of homeownership and the set of explanatory variables included in empirical studies of ownership gaps. This failure results in the omission of important concepts (e.g. income stability) and it complicates the interpretation of included variables. For example, age and marital status become proxies for expected mobility and income becomes a proxy for the tax benefits of homeownership. Further, theory suggests that the effects of variables such as income and its interaction with the tax code should have nonlinear effects. Few studies of gaps in homeownership allow for such nonlinearities.

Another general problem with the literature on homeownership gaps is that it trails advances that have been made in the study of the propensity of a given household to become a homeowner. Most current studies of when and whether households become homeowners adopt an inter-temporal approach, using information on changes in household circumstances over time to predict future choices. In contrast, apart from the occasional use of permanent rather than current income, studies of homeownership gaps are typically silent regarding inter-temporal aspects of homeownership and instead rely exclusively on current household attributes to predict tenure choice. In many cases, studies of gaps in homeownership appear to have not advanced very much beyond methods used in the 1970s to estimate the probability of homeownership. In contrast, studies of the likelihood that individual households become homeowners have been using panel data and related econometric methods for two decades. While the homeownership literature recognizes that a household's current tenure status will affect its future housing tenure choices, there is little recognition of this inter-temporal dependence in the homeownership gaps literature. The literature on the propensity for homeownership also recognizes that expectations of future events affect current tenure choice decisions, but again the gaps literature, in general, fails to take this point into account.

Two broad but compelling conclusions emerge from our review of the literature in this chapter. First, additional efforts targeting discrimination in housing and mortgage markets and a lack of information about the homebuying process are unlikely to narrow racial gaps in homeownership by more than

perhaps five percentage points. That in turn implies that future efforts to narrow aggregate white-minority gaps in homeownership should primarily focus on addressing the differences in household circumstances by race – including wealth, income, education levels, and marital status – that account for a large majority of the observed differences. Some of these factors can be addressed by efforts to reduce barriers to homeownership associated with wealth and income. But the fact that so much of the homeownership gap is attributable to the generally lower socioeconomic standing of minorities suggests that policies that address broader societal factors will also be needed to close these gaps over time. The factors that are important to supporting homeownership but may fall outside the range of homeownership policies include enhanced job opportunities, job security, marital status, and household stability. Creating an environment conducive to financial and family security for minorities is a challenging task, but one that policy makers must grapple with if they are to substantially reduce current racial gaps in homeownership. A second conclusion from this review is that there are considerable opportunities for further research to expand our knowledge of the determinants of race-related and income-related gaps in homeownership.

1.2.4 Policy Options for Reducing Homeownership Gaps

In thinking about policy options for closing homeownership gaps it is also helpful to keep in mind the magnitude of the issue. According to the 2003 CPS, there were 13.3 million black households, 11.3 million Hispanic households, and 4.0 million Asian households. In order to raise the homeownership rate of each of these groups by 1 percentage point, there would have to be an increase of 133,000 black homeowners, 113,000 Hispanic homeowners, and 40,000 Asian homeowners, for a total of 286,000 minority households. In terms of income, there were 37.1 million households with income less than 50 percent of AMI (adjusted median income) and 21.5 million with income between 50 and 80 percent of AMI. In order to raise homeownership rates of these groups by 1 percent there would have to be an increase of 371,000 and 215,000 homeowners in these income classes. Thus, in order to close homeownership gaps by race and income by a single percentage point, public policy needs to assist several hundred thousand households. The implication is that making substantial progress in closing homeownership gaps by income and race-ethnicity will require moving literally millions of households into homeownership, requiring a sustained policy effort over many years. In the short run, it seems appropriate for policy makers to focus on incremental gains. We provide evidence in this report that a more modest goal of raising homeownership rates by a few percentage points is certainly within the reach of variety of policy options and would help hundreds of thousands of households.

A further challenge facing policy makers in attempting to narrow homeownership gaps by race and ethnicity is that policies cannot be targeted to minorities. Policies can, however, be targeted by income and, because minorities (at least blacks and Hispanics) disproportionately have lower incomes, efforts to assist low-income households may help close homeownership gaps by race and ethnicity. But there are many low-income white households who will, rightly, also benefit from these efforts. As a result, efforts to aid low-income households may only have a marginal impact on closing homeownership gaps. This suggests that as a policy goal it may be more appropriate to focus on raising minority and low-income homeownership *rates* rather than specifically on narrowing *gaps*. This is consistent with the Bush administration's policy goal of increasing the number of minority homeowners by 5.5 million over the first decade of the century.

The first step in thinking about policy options for closing homeownership gaps is to identify the constraints on greater homeownership by low-income and minority households. For policy purposes, the most important constraints are on the supply side, as these barriers limit the ability of households who might otherwise choose to be owners from purchasing a home. Homeownership deterrents on the demand side largely relate to factors that make the investment risk of owning too great for some households. While some efforts to address these risks may be helpful and appropriate, such as home equity insurance, in some cases it will simply be the case that the risk of homeownership is inappropriate for some low-income and low-wealth households. The high transaction costs of buying and selling homes also deters households with high-expected mobility from pursuing homeownership. But, again, these households are probably simply best off renting. But while it is true that homeownership may not be the best choice for some low-income households, a challenge for policy makers is that there is no bright line distinguishing which low-income households would be better served by delaying a move to homeownership.

There are two broad categories of supply-side limits on homeownership: limitations on access to mortgage financing needed to purchase homes, and, in some markets, a lack of supply of housing units that are affordable and attractive options for low-income households. Much of the research on the importance of these barriers in limiting homeownership has focused on limits on access to mortgage finance. The most informative studies about the likely impact of changes in the mortgage market on homeownership rates are those that estimate the impact on the probability of homeownership of removing these constraints. In general, these studies have found that a lack of wealth is a much more important limitation on homeownership than is a lack of income to meet limits on monthly payments. Wealth is needed to meet downpayment and reserve requirements, to pay closing costs, and to reduce outstanding debt levels. In terms of the magnitude of the potential for increasing homeownership, research has shown that reduction in wealth and credit constraints could increase overall homeownership rates by between 4 to 8 percentage points, with larger gains generally for lower-income and minority households. Given the importance of the wealth constraint, the most effective policies for increasing homeownership are likely to be efforts to provide downpayment assistance, provide mortgage products with lower downpayment requirements, or efforts to support wealth accumulation by low-income households such as individual development accounts.

Few studies have attempted to estimate the impact of other supply side barriers that limit access to homeownership, such as racial discrimination, lack of information about housing and mortgage markets, or access to suitable housing for ownership. More research is needed to better understand the importance of housing supply restrictions on homeownership rates.

Another strand of the literature that examines the potential for increasing homeownership uses a synthetic underwriting approach. These studies rely on very detailed information on current household financial circumstances and apply varying assumptions about underwriting requirements, home prices, and transaction costs to estimate how changes in these parameters affect the number of households who could qualify for a mortgage. Estimates from these studies of the influence of various underwriting requirements on homeownership rates are fairly small, possibly because these studies do not allow for households to change their financial circumstances in order to qualify for homeownership. Nonetheless, the findings from these studies are instructive about the relative importance of different options for increasing access to homeownership.

Perhaps one of the most interesting aspects of results from studies based on the synthetic underwriting approach is that FHA guidelines are as effective at reaching low-income and minority households as most of the new mortgage products introduced during the 1990s. These studies also examine the potential of a range of interventions to increase homeownership, such as lowering interest rates, reducing downpayment levels, lowering transaction costs, reducing home prices, and providing income supplements or cash grants. Of these options, by far the most effective policy is to provide cash grants of $10,000, as these funds directly address a range of financial constraints arising from lack of household savings. (Grants of $5,000 have a fairly large impact, but $10,000 grants have a several-fold larger impact.) Such grants alleviate the need to pay downpayment and closing costs, provide a fund for reserve requirements, and help to pay down existing debts. These findings are in keeping with conclusions from other studies that lack of wealth and a limited ability to save is the most important barrier to homeownership for low-income households.

Policies that address a lack of savings by low-income and minority families are likely to have an important impact on homeownership rates. Such efforts could include loans or grants for downpayments, but it is important to note that for many households it is not just the downpayment requirement that is binding. In fact, given the introduction of low or zero downpayment loans in the last decade, the downpayment itself may be less of a constraint now than it was in years past (although the volume of lending through these programs is still fairly low). Also, there are also legitimate concerns about default risk from households with little of their own savings at stake and with little history of an ability to save. For this reason, efforts to help households develop the ability to accrue savings should be part of a broader homeownership policy. Current examples of such policies in other contexts include the government's willingness to match contributions in various settings – for example by allowing shielding of savings from taxation as in IRA type accounts. Such initiatives directed towards savings earmarked for homeownership would encourage households to save. Also, efforts to educate households about financial management may help to develop the skills and habits needed for savings accumulation.

As a broad characterization, one of the most effective ways to increase homeownership among low-income and minority households would be to improve the financial well being of these households. Thus, public policies that help to provide better and more stable economic opportunities would likely be the most effective homeownership policy. Nonetheless, taken as a whole the literature suggests that some housing-specific policies, particularly those that address wealth constraints, also have promise for increasing homeownership among low-income and minority households.

1.3 Recommendations for Further Research

An important feature of this report has been to summarize areas where further research would be most fruitful to advance our understanding of the causes of homeownership gaps and policies that would be most effective in reducing these gaps. To that end, we point out such opportunities throughout the report. Below we summarize areas where current research on homeownership gaps is nonexistent or inadequate to draw conclusions. The texts of Chapters Two through Five elaborate on the specific nature of the deficiencies identified. We also briefly identify several HUD sponsored studies known to be currently underway that examine various issues related to homeownership gaps.

1.3.1 Areas in Need of Further Research

While the research on tenure choice is quite rich, there are a variety of ways in which the existing literature could be extended to better understand differences in the demand for homeownership by race and income. For example, while the stability of household income is understood to be an important determinant of homeownership, very little research has focused on the manner and extent to which employment and income stability affect both the demand for homeownership and constraints imposed on low-income and minority households. Studies in this area are needed to understand the extent to which some households rationally choose to rent when faced with an unstable flow of future income.

As the conceptual framework makes clear, demand for homeownership is strongly influenced by the investment demand for housing. While this is well understood, there is a shortage of literature that examines how the investment returns from housing vary by income and race. For example, a household's expected length of stay will have a significant effect on the investment return from homeownership. But while there are many studies of household mobility, there are few that link differences in expected mobility by race and income to gaps in homeownership rates.

Variations in investment return by race may also contribute to racial gaps in homeownership rates. If house values increase less for homes owned by minority households than for white households, then the expected return from owning is reduced along with the propensity for homeownership. These concerns can arise when preferences for neighborhood racial composition give rise to tipping effects whereby in-movement of a discriminated group (e.g. blacks) prompts an exodus from the neighborhood (e.g. white "flight"), thereby reducing property values. Patterns of racial segregation may also limit housing appreciation in minority neighborhoods if few whites seek to buy homes in these areas. Research is needed to investigate the degree to which such phenomena occur and the role that this may play in reducing minority homeownership.

House price volatility is an important source of risk in homeownership. However, there is only one study that we are aware of that assesses the inter-temporal variance of the price of low-priced homes, and this study is limited in spatial scope. Further study is needed to identify the degree of risk to which low-income families are exposed when they purchase low-priced homes.

Another issue that may differentially affect the financial risk and returns to homeownership for low-income households generally is the cost of home maintenance. It is well known that older housing is subject to higher levels of maintenance costs on average, and also a greater risk of potentially very high maintenance expenses. However, it is not known whether these factors contribute to income and race-related gaps in homeownership.

Finally, while the impact of favorable tax treatment of homeownership on overall homeownership rates has been studied, the impact of favorable tax treatment on racial gaps in homeownership rates is in need of further study.

Another aspect of the demand for homeownership that warrants further study is homeownership among immigrants. Historically, immigrants have had substantially lower homeownership rates than the native born. However, that gap substantially narrows with 20 or more years of residency. Despite that pattern, it is not clear whether recent immigrants will achieve the same homeownership profile as

natives. For example, recent Hispanic immigrants have low levels of U.S. naturalization, and citizenship is highly correlated with homeownership. The greater openness of both Asian and Hispanic households to multi-generational living arrangements also has potential to affect homeownership both by increasing the consumption demand for homeownership and by creating larger pools of family wealth. Nevertheless, our understanding of these issues is limited.

In general, studies of household decisions to own a home tend to be based on more advanced models than those of gaps in homeownership rates. For example, current theoretical and empirical models of household decisions to own a home often adopt an inter-temporal optimization framework that recognizes the long-term nature of homeownership decisions. Further work is needed to adapt similar models to studies of gaps in homeownership rates.

Along these same lines, while the literature on household decisions to own a home recognizes that a household's current tenure status affects its future housing tenure choices, there is little recognition of this fact in the homeownership gaps literature. One consequence of the importance of past homeownership attainment on future tenure choices is that cohort specific gaps appear to persist over time. That is, if blacks born between 1960 and 1964 fall well short of similarly aged whites in homeownership at age 30, this large gap in homeownership differences will persist for these two groups as they age. If true, this is important for housing policy because programs that increase the homeownership rate of young minority and low-income households will have long-term effects throughout these individuals' lifetimes. But research on this topic is basically nonexistent.

Another inter-temporal aspect of tenure choice put forward by several studies is the hypothesis that that there is intergenerational transmission of the tendency to become a homeowner. Aside from the obvious transmission of wealth across generations, another possible motivation for such phenomena would be intergenerational transmission of information about both the benefits of homeownership and how to navigate the real estate brokerage and mortgage markets. If true, policies that close the white-minority homeownership gap may have long-term positive effects by boosting homeownership of the next generation of minorities. Hard evidence related to this idea is scant and implies the need for further study.

On the supply side, there has been a fair amount of research on the impact of mortgage finance barriers on homeownership. However, relatively little research has examined the impact of limits on access to affordable and attractive homeownership options on low-income and minority homeownership rates. In the early 1970s, one study argued that racial segregation in conjunction with high-density central city housing restricted homeownership opportunities for minorities. Aside from an unpublished dissertation, little attention has been given to this issue since it was first proposed, despite the fact that residential segregation by race is still quite high in many areas. A related deficiency in the literature is the absence of any study that carefully documents the administrative costs associated with organizing multifamily buildings into condominiums. Are these costs higher if the tenants have low-income? Are they higher in localities with high crime rates or highly mobile households? How do these costs vary with the type of building and neighborhood? These issues have never been carefully researched but warrant further attention.

Another important supply side question is the role of manufactured homes as an affordable homeownership option. Units of this type comprise a large (8.2 percent) and growing share of the nation's owner-occupied housing stock and this sector has been one of the keys to homeownership

growth in the 1990s. This growth in ownership of manufactured housing has been particularly strong for low-income and black households. This suggests that manufactured housing has a substantial role to play in explaining and helping to close homeownership gaps by race and ethnicity, particularly if financing issues for manufactured housing are addressed. Further study is needed of the profiles of new manufactured homeowners, the duration of ownership of manufactured housing, and what explains the differences in the likelihood of owning manufactured housing by different income, racial, and ethnic groups.

Finally, an important omission in the literature is the very limited amount of research that has sought to evaluate the effectiveness of specific homeownership policies. Policy makers therefore should consider including evaluation efforts as part of homeownership programs. Given the emphasis in policy circles on efforts to address wealth constraints and on education and counseling, these are two areas where evaluative research would be most beneficial. In addition, while the influence of financial constraints on access to homeownership has been extensively studied, efforts to examine the influence of other potentially important constraints have been thin. Such constraints include limits on access to housing conducive to homeownership, and the degree and manner in which limited access to information about financing and housing opportunities deter potential for homeownership.

1.3.2 HUD Sponsored Studies Currently Underway

In conjunction with this literature review, HUD also sponsored a series of studies examining in detail some of the issues raised in this literature review. Below we briefly describe these studies and their principal findings.

The Impact of Differences in Household Formation Rates on Homeownership Gaps by Race
Homeownership rates are influenced both by the percentage of individuals that choose to become households (referred to as the headship rate) and the percentage of households that choose to become homeowners. While there has been extensive study of racial differences in homeownership rates, there has been little study of racial and ethnic differences in household formation. Analysis of the impact of these differences on homeownership rates is essentially non-existent. This study examines these questions on an age-specific basis using data from the 1970 to 2000 public use micro samples (PUMS) of the decennial census.

From 1970 to 2000, age-specific homeownership rates fell by 5 percentage points for individuals from their mid-20s to mid-30s. That difference diminished for older age groups, reaching zero for individuals in their mid-40s, and then rose to positive 10 percentage points among individuals in their 60s. This analysis found that changes in headship behavior over time contributed little to these observed patterns. For those segments of the population where changes in headship behavior did affect homeownership rates, lower headship rates reduced homeownership. This occurred because with lower headship rates some prospective households do not form, and many of these prospective households would have been owner-occupants. This pattern is most notable for individuals in their early and mid-20s for whom reductions in headship rates between 1970 and 2000 served to depress homeownership rates by 3 to 5 percentage points. That effect accounts for much of the observed decline in homeownership for this group over the 1970 to 2000 period.

With regard to racial differences in homeownership, this study finds that for the year 2000, black and Hispanic homeownership rates are sensitive to differences in headship behavior relative to white

individuals, although primarily only for individuals in their 20s, 30s, and 40s. Among blacks, headship rates for these age groups are higher than among white individuals, and that difference serves to *narrow* the observed white-black gap in homeownership rates by roughly three percentage points. Among Hispanics, headship rates for those under age 40 are lower than among white individuals, and that difference serves to *widen* the observed white-Hispanic gap in homeownership rates by two to three percentage points. Once again, lower headship rates are associated with lower homeownership rates. Moreover, controlling for headship behavior, white-black homeownership gaps are somewhat more severe than previously recognized, while the reverse is true for white-Hispanic gaps in homeownership.

The Sustainability of Homeownership: Factors Affecting the Duration of Homeownership Spells for Low-Income and Minority Households

The overall rate of homeownership and white-minority gaps in homeownership are both sensitive to the ability and tendency of households to sustain homeownership. Policies that promote homeownership that result in only a temporary transition from renting to owning have little impact on long-term homeownership rates. However, research on the duration of ownership spells is limited and analyses by race and ethnicity are nearly nonexistent. This study uses a national data set (the National Longitudinal Survey of Youth-NLSY) that follows a cohort of individuals for 21 years. Residence histories are tracked, measuring the time spent in each type of tenure.

The study finds strong evidence that the cliché "once an owner, always an owner" is false. Terminations of first-time homeownership averaged 12 percent per year over the 21-year period, being very high when the respondents were young and falling to 4 percent per year when the respondents were age 38. There are also substantial racial differences in termination rates of first, second, and third spells of ownership. Overall, the termination rate of homeownership spells by African-Americans is 240 percent of the rate for whites while the rate for Hispanics is 168 percent of whites. These greater annual rates of terminating spells of homeownership indicate that the duration of stay in homeownership is shorter for African-Americans and Hispanics than whites. A statistical analysis of the expected length of first homeownership also finds large differences by race and ethnicity, with whites having an expected duration of 16.1 years, compared to 9.5 for blacks and 12.5 for Hispanics.

The study also analyzes the time spent renting or living with parents following a terminated spell of homeownership. Here, the spells are shortest for whites (10.7 years), then Hispanics (14.3 years), and then blacks (14.4 years). These lengthy estimated periods of non-ownership indicate that if you terminate first-time homeownership, it is often difficult to return to ownership, especially for minorities.

These findings highlight the importance of efforts to maintain homeownership among those who have achieved it as an important component of policy efforts to reduce homeownership gaps by race.

Homeownership Gains By Race and Income During the 1990s: Composition Effects, Rate Effects and Implications for Future Trends

Changes in homeownership rates can be decomposed into changes in household characteristics (e.g., changes in the distribution of households by age, type, etc.) and changes in homeownership rates for specific types of households. This type of analysis can explain the extent to which changes in the

homeownership rates of groups, such as minorities, are due to changes in the composition of the group (by age, household type, etc) versus changes in the homeownership rates of the various subgroups.

This paper uses the public use microdata samples (PUMS) from the 1990 and 2000 censuses, about one million households from each census. It divides the households in each sample into 1,750 separate groups defined by the age of the householder (7 age brackets), household type (5 types), the race and ethnicity of the householder (5 race and ethnicity combinations), real household income (5 classes) and the location of the household (inside or outside of central cities). The analysis examines changes in both the homeownership rates of these 1,750 groups and in the distribution of the population across the groups. In particular, the study calculates what the change in homeownership rates would be if one froze the distribution of the population across groups at the 1990 profile but allowed homeownership rates to move from their 1990 to 2000 levels. This is called the *rate effect*. It also calculates what the change in homeownership rates would be if one froze the homeownership rates at their 1990 levels but allowed the distribution of the population to change from its 1990 profile to its 2000 profile. This is called the *composition effect*. The sum of the rate effect and the composition effect equals the actual change in homeownership rates. This decomposition technique identifies the extent to which homeownership increases can be attributed to demographic shifts in the population versus increased homeownership propensities holding the demographic profile constant.

The growth in homeownership over the decade can largely be attributed to increases in homeownership propensities among a large share of these 1,750 groups, rather than just shifts in the population to include larger shares of households in groups with high homeownership rates. Overall, the rate effect accounted for 79 percent of the growth in the national homeownership rate over the decade. However, while homeownership increases were widespread, changes in the rate structure were not uniformly positive for all the disadvantaged groups. The rate effect was only a minor contributor to the gain for non-Hispanic blacks, while rates among very low-income groups actually declined over the decade. However, the rate effect was an important factor in the rise of Hispanic homeownership rates, accounting for more than half of the rise in Hispanic homeownership. On the other hand, changes in the composition of the population also contributed to the increase in the homeownership rates of all racial and ethnic groups. Growth in real income appears to have been the most important shift in the composition of these groups.

Changes in Homeownership Rates Among Neighborhoods in the 1990s

Since homeownership is thought to benefit neighborhoods as well as individuals, the question of how the recent gains in homeownership have been distributed across neighborhoods is of interest to policy makers. This study explores the characteristics of neighborhoods (as defined by census tracts) where homeownership rates increased the most as well as those where rates actually declined during the 1990s. The study sorts neighborhoods into five quintiles ranging from those with the largest declines in homeownership rates to those with the largest gains.

Somewhat surprisingly, there are a number of similarities between neighborhoods with large gains in homeownership rates and those with large declines. Both groups of neighborhoods experienced strong household growth over the decade. Both groups of neighborhoods also began the decade with lower average household incomes and house prices than the other quintiles of neighborhoods that experienced less change in homeownership rates. However, the rapid growth of homeowners in the

top quintile was associated with a substantial increase in both household incomes and house prices in these areas. While areas of high homeownership growth were slightly less likely to be in central cities, in general there was little difference in the intra-metropolitan location of tracts with large gains in homeownership. That is, neighborhoods with large gains and large declines in homeownership are found spread throughout metropolitan areas. Finally, underserved areas are somewhat underrepresented among areas with large gains in homeownership, but there are nonetheless a significant share of these tracts in these high growth areas.

The study also examines the distribution of gains in homeownership among blacks, Hispanics, and Asians. For each of these groups, neighborhoods were again sorted into quintiles ranging from areas with large declines in homeownership among the minority group to those with large increases. Similar to the pattern for all households, areas with large gains and large declines in minority homeownership rates both experienced very rapid growth in the minority group – but some areas attracted mainly renter households, while others attracted mainly owners. These areas of high growth tended to be areas with lower concentration of minority households. So gains in minority homeownership are associated with a movement of households into more integrated neighborhoods. While in general, there is little variation in the socioeconomic status of neighborhoods across the homeownership change quintiles for minorities, areas with strong minority homeownership gains do tend to have higher incomes and house prices than areas with smaller shifts in homeownership rates.

The Potential of Downpayment Assistance for Increasing Homeownership Among Minority and Low-Income Households

The purpose of this study is to investigate the potential for downpayment assistance efforts to increase homeownership rates, both overall and among the low-income and minority households that are of special concern to policy makers. There are several ways in which this study adds to existing research. First, it evaluates the potential of downpayment assistance programs to stimulate homeownership by measuring the impact of cash grants on the propensity to own. Second, it avoids the endogeneity of wealth and homeownership by focusing exclusively on a sample of renter households. Third, by tracking renter households over time it captures the ability of households to accumulate savings, reduce expenses, and/or increase income to achieve homeownership – dynamic aspects of the tenure transition process that are not captured by cross-sectional analysis. Finally, the period of study, 1997 to 2000, is a time when there was growing availability of low downpayment mortgage products. Thus, the study sheds light on the importance of wealth constraints at a time when renters could benefit from these mortgage market innovations.

The study analyzes data from the 1996 Panel of the Survey of Income and Program Participation (SIPP). Of particular interest for this study, the 1996 SIPP included detailed questions about household assets and liabilities once each year. The sample used for this study consists of some 11,000 renter households as of the last quarter of 1996 and tracks their tenure choices every three months through February 2000. The analysis has two stages. In the first stage, a parametric proportional hazard model is estimated of the transition to homeownership based on a variety of demographic and financial characteristics of each household as well as economic conditions in the markets where they live. Of particular importance are measures of each household's liquid financial wealth. In the second stage, the results of the hazard model are used to simulate the impact of cash grants to households on the probability of becoming a homeowner over time. The simulations are run for all renter households as well as for sub-groups of low-income, black, and Hispanic households.

Results confirm that liquid financial assets are statistically significant predictors of homeownership. But while the importance of wealth in predicting homeownership is in keeping with the findings of previous research, a somewhat surprising finding of this analysis is that the largest impact on the probability of homeownership was associated with savings between $0 and $1,000, while savings between $1,000 and $5,000 had a lower marginal impact on this probability, savings between $5,000 and $20,000 added only slightly to the likelihood of buying, and savings above $20,000 had no statistically significant impact.

Given the importance of low levels of liquid financial assets on the probability of homeownership in the estimated model, the simulations suggest that small amounts of downpayment assistance can be very effective at stimulating fairly large numbers of renter households to become homeowners. Downpayment assistance of as little as $1,000 is simulated to entice 700,000 additional low-income households to purchase a home, a 19 percent increase from the baseline estimate of the number of homebuyers absent any assistance. Reflecting the finding from the survival model that there is a diminishing impact of higher levels of savings on the probability of buying a home, higher levels of assistance do not have as large a marginal impact on the number of homebuyers. Assistance of $5,000 per household is simulated to increase the number of low-income homeowners by an additional 15 percent beyond the gain from $1,000 in assistance, while assistance of $10,000 is simulated to increase the number of buyers by an additional 7 percentage points beyond the gain associated with $5,000 in assistance.

The results also suggest that policy efforts to support savings efforts by households to accumulate the funds needed to buy a home, such as through individual development accounts, may also be an effective approach for enabling homeownership among low-income households. Such savings incentives could also be coupled with support for financial management training to help households develop the skills needed to manage their finances to the point where they can accumulate savings. The findings from this analysis suggest that a little savings can go a long way toward enabling homeownership.

Wealth and Income Constraints on the Transition to Homeownership

Existing research has demonstrated that both household income and wealth place constraints on the ability of household to achieve homeownership. Surprisingly, none of the existing studies takes advantage of using a longitudinal data set to observe how cohorts of households actually transition from renting to owning over time and how the probability and timing of this transition relates to household income and wealth constraints. This study makes use of data on households tracked from 1984 through 1999 as part of the Panel Study of Income Dynamics to examine the impact of income and wealth constraints on the probability of becoming a homeowner over a long period of time. Specifically, this paper uses survival analysis to examine whether there have been any changes in the importance of wealth and income constraints on homeownership over this period and whether income and wealth constraints have similar effects on whites and minorities.

The study finds that both household income and net wealth are positively related to the likelihood of achieving homeownership while controlling for other demographic factors. One of the key findings is that wealth constraints appear to be more binding for minorities. The results also support the view that the proliferation of mortgage products allowing for low down payments in the late 1990s may have contributed to a reduction in the importance of wealth constraints on homeownership during the

1994 to 1999 period. These results, however, are somewhat fragile, so further research is needed to support this conclusion.

The paper does not find any support for a reduction in the importance of the income constraint over time, despite the fact that mortgage product innovation has also increased the allowable ratios of debt to income. However, most existing research has found that wealth constraints have been more important in limiting homeownership than income constraints. Thus, the results may be taken to mean that the relaxation of down payment constraints has been more important in increasing homeownership opportunities than changes in allowable debt ratios.

Chapter Two
Conceptual Framework of the Determinants of Differences in Homeownership Propensities

2.1 Introduction

By 2004, the white homeownership rate was 76 percent, while African-American and Hispanic homeownership rates remained below 50 percent and the Asian rates was nearly 60 percent. At the same time households with very low income had a homeownership rates that was 37 percentage points below the rate for high-income households. What accounts for these and other substantial gaps in homeownership rates for different groups in the population? This chapter provides a conceptual framework that will help to organize how we think about that question. A challenge in providing such a framework is to do justice to well known stylized "facts" while at the same time providing enough structure to offer a picture of how the ideas and information in the vast literature in this area fit together. To facilitate, Exhibit 2-1 provides a schematic of the central ideas around which this chapter is organized.

Descriptive studies of homeownership rates emphasize that several key family attributes are associated with much of the observed difference in homeownership status across families. Most prominently in the context of the present study are differences in homeownership rates by race and ethnicity as noted above. But in addition, older individuals are far more likely to own their primary residences, as are higher-income families. Similarly, given the need to acquire a downpayment for home purchase, families with more wealth have higher owner-occupancy rates. More generally, to what extent do differences in these and other family attributes between white and non-white households account for racial and ethnic gaps in homeownership rates?

Exhibit 2-2 partly addresses this question by presenting results from two linear probability (ordinary least squares) regressions of homeownership rates. These regressions are based on weighted data from the 1998 Survey of Consumer Finances and are representative of the United States population in that year. The first regression includes only a constant and an indicator for race and ethnicity of the household head: Black, Hispanic, or Other, where white is the omitted category. Accordingly, the reported race and ethnicity coefficients indicate the percentage point difference in the homeownership rate between key minority groups and white households, while the constant measures the homeownership rate for white families. Consistent with well-established observations, white homeownership rates are a bit above 70 percent, while the white-black and white-Hispanic homeownership gaps are both roughly 25 percentage points.

Exhibit 2-1: Conceptual Framework

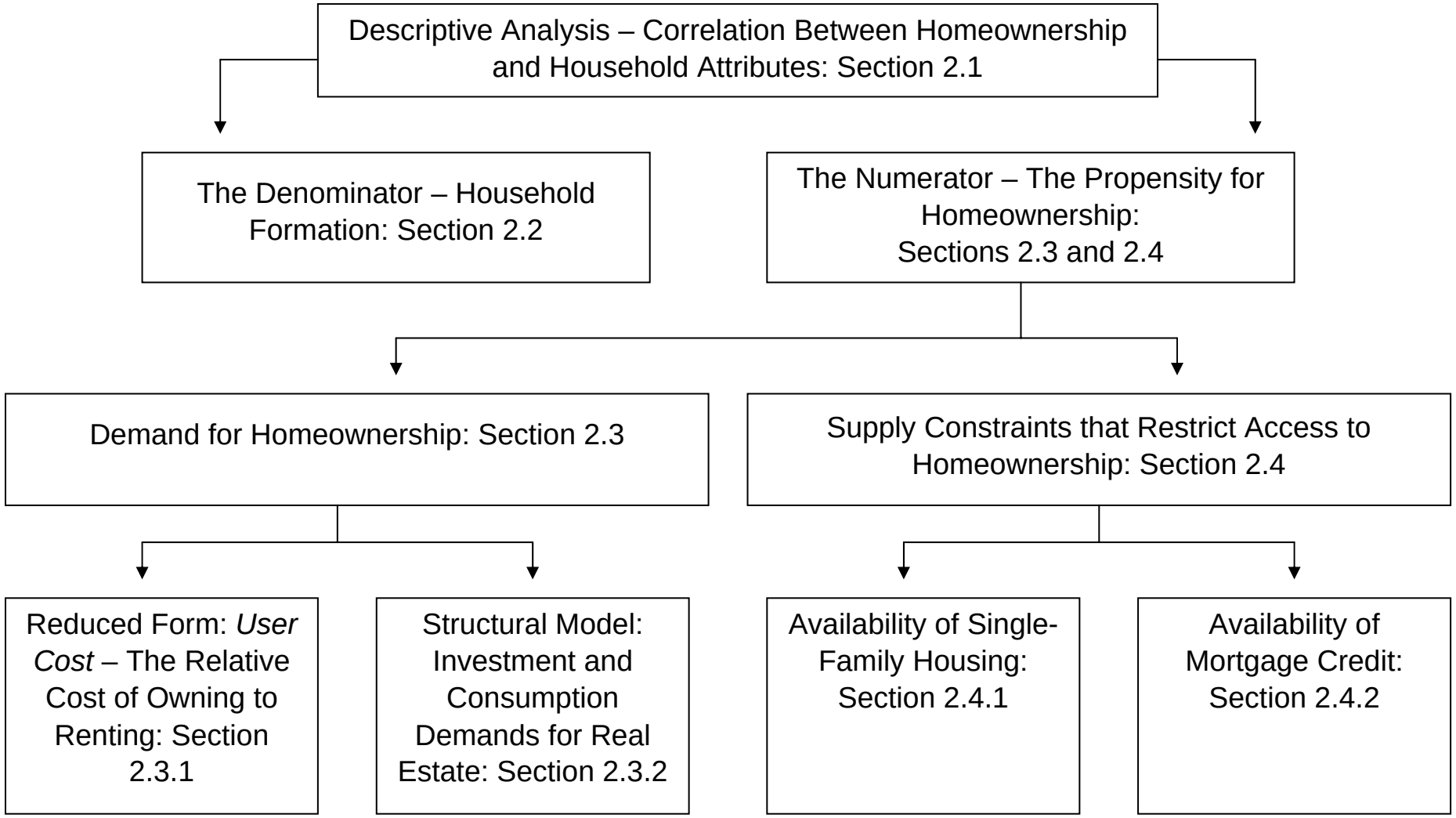

Exhibit 2-2
Ordinary Least Squares Regressions of Probability of Homeownership By Race and Ethnicity Without and With Controls for Household Attributes[a]
(t-ratios in parentheses)

Variables	Excluding Controls for Household Attributes	Including Controls for Household Attributes
Black	-0.248 (-19.03)	-0.079 (-6.57)
Hispanic	-0.269 (-16.68)	-0.121 (-8.02)
Other	-0.190 (-8.34)	-0.136 (-6.61)
Constant	0.710 (173.9)	-0.166 (-5.56)
Observations	4,267	4,267
R-squared	0.047	0.292
Root MSE	0.464	0.399

Source: Estimated using 1998 Survey of Consumer Finance weighted to be representative of the U.S.
Notes:
[a]Non-race controls for the household head's attributes include the following: (1) education status: more than college degree, college degree, some college, or less than college degree, (2) marital status, (3) divorce status, (4) age spline, (5) number of people in household, (6) gender, (7) race and ethnicity: white, black, Hispanic, or other, (8) health status: whether the head is in bad health, whether the spouse is in bad health, (9) income: total family income and total family income squared, (10) inheritances: whether the Head has received an inheritance or settlement in the past, whether an inheritance is expected in the future, (11) employment status: whether the head works full time, the spouse works full time, the spouse works part time, (12) the number of full-time jobs the head has held for more than one year, (13) density of development in the neighborhood: whether homes in the neighborhood are less than 21 feet apart, 21 to 100 feet apart, or more than 100 feet apart, (14) whether the Head knows next year's income, (15) whether income is expected to rise in the next five years, (16) dummy variables for Northeast, North Central, South, and West of the U.S.

Column two presents results from an expanded regression that includes a host of family demographic and financial attributes recently used in a study of homeownership rates by Rosenthal (2002). To facilitate comparison to the first model, only the race and ethnicity-related coefficients and constant are presented in the exhibit. Note that controlling for family demographic, financial, and other attributes dramatically reduces the coefficient on African-American status, to roughly 8 percentage points. Analogous results are obtained for the other race and ethnicity variables.[1] This confirms that controlling for differences in demographic, financial, and other traits between white and non-white

[1] Since Asians account for a large share of the "Other" race, the large, unexplained difference between white and Other homeownership rates is in contrast to findings from more detailed studies such as Painter, Yang, and Yu (2002) which find that there is little or no difference in white and Asian homeownership rates once immigrant and citizenship status are controlled for. "Other" includes Native Americans as wells as Asians and lacks any measures for immigrant status.

families accounts for much of the observed difference in homeownership rates between the two groups. The question still remains, however, as to *why* age, income, wealth and other family attributes are such important predictors of homeownership gaps?

To address that question, we first revisit a well-known but often overlooked feature of homeownership rates: homeownership rates are, by definition, equal to the number of households residing in owner-occupied housing divided by the total number of households. Accordingly, differences in homeownership rates among populations (e.g., white versus Black) can arise from differences in the *numerator* – the propensity to own conditional on having formed a household – differences in the *denominator* – the propensity to form a household – or both. Although mathematically clear, the idea that homeownership gaps may arise because of differences in household formation rates has largely been ignored in the literature. Nevertheless, to the extent that household formation rates differ across groups in the population (e.g., white versus non-white), understanding the determinants of household formation is essential to understanding homeownership gaps between such groups.

While little research has examined the interrelationship between head of household status and homeownership rates, there is a vast literature that has examined the decision to own versus rent the primary home conditional on having already formed a household. What factors drive these decisions? To address that question we organize our discussion along two distinct lines, demand side factors and supply side factors. On the demand side, two different but related approaches have been used to examine the propensity for homeownership. The more common approach is the "user-cost" method. In this approach the relative cost of owning compared to renting is calculated and used as a key explanatory variable in a model of housing tenure choice (conditional on household formation). Relative cost can be interpreted as the cost to an owner-occupier of one dollar's worth of housing in the rental market. For many owner-occupiers that cost is less than one because of expected home price appreciation and a variety of local and federal tax policies that implicitly favor homeownership. When the relative cost of owning is low relative to renting – holding constant the quality of the housing unit – households are more likely to become owner-occupiers. We characterize this method as a *reduced form* model because user cost studies typically do not distinguish between consumption motives for owning real estate versus investment-portfolio motives for owning the primary home. Early examples of this approach include studies by Laidler (1969), Aaron (1971), and Rosen (1979).

An alternative though less common approach to analyzing household tenure decisions takes consumption versus investment motives for owner-occupied housing explicitly into account. Consumption demand arises from the need for shelter and increases, presumably, with such things as family size, income, and the like. Investment demand arises from financial goals related to portfolio balance and the household's taste for investing in risky versus safe assets. In keeping with the literature in this area, we argue that if a household desires more housing for consumption needs than would be wise from an investment perspective, the family is likely to rent. Conversely, when investment demand exceeds consumption demand the household is likely to own.[2] Because of the

[2] For example, imagine a large family that also expects to move in the near future because of employment opportunities or some other unspecified reason. Because the family is large, it desires to live in a large home with many bedrooms. Because the family expects to move soon, it anticipates incurring moving costs in the near future. Under these circumstances, the consumption demand for housing is large. However, the investment demand for owning the primary home is very small owing to the anticipated

added structure associated with this model, we characterize the investment-consumption method as a *structural* approach. Examples of studies based on this approach include theoretical work by Henderson and Ioannides (1983) and Brueckner (1997), and follow-up empirical studies by Ioannides and Rosenthal (1994), Arrondel and Lefebvre (2001), and Howe (2002).

Of course, demand for owner-occupancy is not always realized. Instead, constraints imposed by mortgage lenders may prevent some households from owning their residence when they would otherwise become owner-occupiers. Examples of these studies include work by Zorn (1989), Linneman and Wachter (1989), Duca and Rosenthal (1991, 1994a), and Haurin, Hendershott, and Wachter (1997). In addition, influential studies of discrimination in mortgage markets by Munnell et al. (1996), Berkovec et al. (2000), and others have focused attention on the degree to which discrimination in mortgage markets may impede access to homeownership.

A different supply-side constraint originally suggested by Kain and Quigley (1973) and reexamined by Herbert (1997) concerns the availability of single-family housing stock in central city neighborhoods. Suppose that homeownership and single-family housing are viewed as complementary goods by households. Or, alternatively, suppose that the administrative costs of organizing housing units into owner-occupancy status are substantially higher for multifamily units than for single-family housing.[3] Then constraints on the supply of single-family housing in central city neighborhoods may restrict homeownership in those areas. Moreover, if economic and other forces (e.g., discrimination) disproportionately restrict some households to the central cities – as has historically often been the case for low-income and minority families – then restricted access to single-family housing could contribute to homeownership gaps. But apart from the original work by Kain and Quigley (1973) and follow-up research by Herbert (1997), this idea has largely not been considered in the literature.

Summarizing, as outlined in Exhibit 2-1, our plan for the remainder of the chapter is as follows. We first examine household formation since this affects the denominator of the homeownership rate. Next we consider the propensity for homeownership conditional on having formed a household – the numerator of the homeownership rate. This part of the discussion is organized around demand side arguments for why households want to become owner-occupiers, with the next section discussing supply-side constraints that limit access to owner-occupied housing for some families. Following this discussion, we provide a brief summary of the principal ideas and findings developed in the chapter.

2.2 Household Formation

As noted earlier, homeownership rates equal the number of households occupying their own homes divided by the total number of households in the population. As such, both the propensity of an existing household to become an owner-occupier and the propensity of individuals to form a household can affect homeownership rates. Although the idea is conceptually clear, the potential role that household formation and living arrangements play in explaining homeownership gaps and

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moving costs that would be far higher from owner-occupied housing than from a rental unit. For these reasons, the family is likely to rent.

[3] This could arise, for example, because of the need to reach a common agreement for how to maintain and regulate use of semi-public areas in multifamily buildings.

changes in gaps over time has generally been overlooked in the literature. The HUD-sponsored study by Haurin and Rosenthal (2003) described in Chapter 1 provides the only real in-depth study of this issue. Accordingly, in this section we describe the influence of household formation on the rate of homeownership.

We begin with some definitions. A housing unit is counted as owner-occupied if the owner lives in the dwelling unit. If the owner is absent and the unit is occupied, then the unit is counted as renter-occupied.[4] By definition, the number of households equals the total number of occupied housing units. A household includes all individuals living in a housing unit. Thus, a household may consist of an individual, a family, a group of unrelated individuals, multiple families, or mixtures of families and individuals living in the same housing unit. A housing unit is a separate living quarters with direct access to the outside through common halls. Group living units excluded from the count of housing units include institutionalized individuals in group quarters (nursing homes, prisons, mental hospitals) and non-institutionalized individuals in group quarters (students in a dormitory, military quarters, religious quarters). Thus, individuals living in census defined group quarters are excluded from the count of households.

Under these definitions, comparisons of homeownership rates among racial and ethnic groups and changes in ownership rates must be interpreted with care. For example, an increase in the homeownership rate occurs if the number of owners remains constant but the number of households shrinks. The number of households shrinks if two individuals living apart marry and live in a single dwelling, or if two individuals living apart double-up and share a single dwelling unit. If both households were renting prior to the move this change boosts the homeownership rate even if the new couple lives in a rental unit. If the couple chooses to own, the ownership rate is further increased. Differences in the rate of homeownership among various income or racial and ethnic groups could be explained, in part, by differences in the amount of doubling-up, marriage, divorce/separation, and living with parents or other relatives, or by the share of the population living in group quarters.

With these ideas as a backdrop, this section proceeds as follows. First, we briefly describe the theory underlying household formations. Next, we review empirical studies of household formation with an emphasis on low-income and minority households. Following that, we consider the possible empirical importance of household formation by presenting a hypothetical example pertinent to the manner in which household formation of low-income and minority households can affect the homeownership rates of these groups. In addition, results from the recent work on this topic by Rosenthal and Haurin are described.

2.2.1 Theoretical Perspectives

Theoretical insights about household formation are derived from both economic and sociological perspectives. Recent literature has focused on the question of when do youths leave their parental home, but the insights gained from this literature are applicable to the question of when households form in all age categories. We first review the home-leaving literature and then comment on the general application to all households.

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[4] For example, a two-family home (duplex) occupied in one unit by the owner and in the other by a renter has one owned unit and one rental unit.

Sociologists argue that youths' home-leaving is influenced by demographic and social factors, also recognizing that economic factors are important. Included among the demographic factors believed to have an independent effect and encourage home-leaving and household formation are greater age, marriage, and the presence of children in the youth's family (Goldscheider and DaVanzo 1989, Goldscheider et al. 1993a, 1993b; Haurin et al. 1997). Explanations include arguing that social norms encourage U.S. youths to leave home in their early 20s, and that married couples and youths with children demand greater privacy. Another influential social factor is a youth's family structure, specifically whether the youth lives with a single parent or stepparent, both leading to early exit from the parental household. There are divergent opinions about the impact of additional education, in part because of the definitional problem of whether a college student has left home. Certainly attaining a college education leads to home-leaving, but often youths in college are not economically independent and frequently they live in dormitories.[5]

Nearly all studies of home-leaving include indicator variables for a youth's race and ethnicity. In general, the race and ethnicity variables simply control for differences in home-leaving tendencies not captured by the other explanatory variables. Theoretically, Garasky et al. (2001) argue that blacks and Hispanics face discrimination in the housing market, limiting their choice of dwellings. Relative to white youths, this limitation may delay minority youth home-leaving and increase the likelihood that minority youths live in groups after leaving the parents' home.

Economic explanations of household formation are found in Haurin et al. (1994, 1996), Ermisch and DiSalvo (1997), and Ermisch (1999). Haurin et al. (1994) argue that the cost of independent living is an important determinant of whether a youth leaves the parental home, where this cost is measured by the cost of both renting and home purchase in the locality. They also argue that the likelihood of a youth forming a household depends upon a youth's ability to earn income as measured by his or her potential wage or income.[6]

Ermisch and DiSalvo (1997) and Ermisch (1999) argue that the decision to form a household depends on the well-being or utility a youth could achieve living independently compared with living in the parents' home. In their framework, relative utility levels associated with independent living versus the parents' home are sensitive to the space, privacy, and monetary gifts from parents that youths would enjoy in each state of the world. As a result, parents play an influential role in the household formation of youths because parents choose whether to offer monetary gifts and space in their home to their children.[7]

Local housing costs affect both a youth's housing that could be consumed if he or she lived independently and the amount of housing that the parents consume. In a formal model, Ermisch shows that given empirically reasonable assumptions about the price elasticity of demand for housing,

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[5] The income enhancing effect of education will be captured in the influence of earnings to be discussed shortly. In addition, as will be outlined later in the discussion, dorms are not counted in the number of dwelling units; thus, youths leaving home for college dorms do not influence the homeownership rate.

[6] Haurin et al. (1994) distinguish potential earnings from actual earnings because a youth's actual earnings depend on labor supply, a choice variable influenced by the living arrangement that is selected.

[7] For example, among youths living in the parents' home, monetary gifts from the parents might be used primarily to increase their consumption of non-housing goods. For youths living independently, monetary gifts are more likely to be used for both housing payments and non-housing goods.

higher housing costs will lead youths to remain longer with their parents. Garasky et al. (2001) extend this model to examine the type of living arrangement youths select if they leave home, in this case, grouping-up versus living alone. They argue that the greater is a youth's income and the lower are housing prices, the higher the proportion of youths who will choose to live alone. These arguments suggest that youths with low earnings ability and youths living in high housing cost localities will tend to remain longer in their parents' home, and when they exit the parental home, will be more likely to live in groups. Both factors tend to reduce the headship rate for low-income and minority youths, where the headship rate is defined as the ratio of household heads to the total population.[8]

Another factor driving differences in headship rates are differences over time or among groups in the rates of marriage, partnering (defined as unmarried couples living together), and remarriage for a population of a given total size. Divorce, for example, creates two households from one, unless one of the individuals selects to live with an existing household (e.g., relatives, friends, or another partner). Marriage, in contrast, merges two households into a single unit.

When analyzing a change in the homeownership rate for a specific group of the U.S. population, the above discussion suggests that the researcher must consider whether the cause of the change is household formation (or dissolution) rather than renters becoming owners (or vice versa). For example, compare two groups that begin with equal ownership rates and assume that a booming economy increases the potential earnings of members of group A more so than group B. We expect that more members of group A will leave groups (including living with parents, relatives, and friends) and set up independent households. If these new households are predominantly renters, then the ownership rate of group A will fall relative to that for group B even though both groups' ownership rates might rise as the strong economy induces other renter households to become owners. In this case, an ownership gap has been created, but it is not one that would necessarily be of particular public concern. More generally, changes over time in a racial, ethnic or income group's average age of home-leaving, marriage/partnering/remarriage rate, or divorce rate will likely affect the group's homeownership rate.

A related factor concerns the definition of which individuals are included in the count of households as alluded to earlier. Individuals living in census designated "group living arrangements" are excluded from the count of households and thus from the calculation of the homeownership rate. If individuals move from living alone to a college dorm, military housing, or prison, the count of households falls. The homeownership rate will be affected unless the individuals happened to be drawn from the populations of owners and renters in exactly the same proportion as the ownership rate. This is highly unlikely as young adults are most likely to be drawn from the renter population.

In a similar vein, it is important to recognize that high rates of male incarceration–characteristic of the Black population–have multiple effects. The males are likely drawn from the renter population, tending to raise the reported homeownership rate. But, incarceration of men also reduces the pool of

[8] Differences among groups in the average age of home-leaving also affect both the headship rate of the group and the propensity for homeownership. Earlier home-leaving by youths, for example, likely implies more renters, depressing the group's ownership rate. But earlier home-leaving may also lead to a higher incidence of grouping-up which would mitigate the impact of early home-leaving on the number of households associated with a given portion of the population.

potential male partners, which likely elevates the single female-headed household rate (unless female youths remain with their parents). As a result, high male incarceration rates lower household income and lower the likelihood of homeownership for females. This issue will be revisited shortly when data are presented on marriage and incarceration rates of minorities relative to white households.

2.2.2 Empirical Studies

Among the many studies of household formation and youth home-leaving, there is a reasonable consensus about the separate effects of economic, demographic, and social variables. The most consistent effects are found for demographic and social variables; for example, increased age increases the likelihood of a youth living apart from parents. Youths leaving home at young ages tend to live in large groups (Garasky et al. 2001). Youths who are married or have children tend to live apart from parents (Haurin et al. 1994) and live alone (Haurin et al. 1997). Youths from single-parent families or who have a stepparent at home tend to leave home earlier (Garasky et al. 2001).

Empirical studies examining racial and ethnic differences in household formation propensities have come to different conclusions depending upon the types of other explanatory variables that were included in the analysis. In a study with a large number of controls for economic, social, and demographic factors, Garasky et al. (2001) found that black youths are more likely to live with their parents than are white youths, but unexpectedly black youths are less likely to live in large groups if they live apart from parents. These two effects have offsetting impacts on the black headship rate. In general, studies of household formation do not find substantial difference between whites and Hispanics in household formation tendencies.

Among the economic variables, relatively high local shelter costs tend to increase the likelihood of youths living with their parents (Haurin et al. 1994, 1996; Whittington and Peters 1996, Ermisch 1997). High housing costs also encourage youths to live in groups (Haurin et al. 1997), but not necessarily large groups (Garasky et al. 2001). Nearly all studies find that higher potential wages or income raises the probability of youths living outside the parental home (Haurin et al. 1994, 1996), and living alone (Haurin et al. 1997). Thus, youths with low potential earnings and living in relatively high cost areas (such as minorities living in central cities) are more likely to live with their parents and are less likely to live alone, thus reducing the number of households. Given that these youths likely would have rented, the lack of household formation tends to, perhaps surprisingly, increase the reported homeownership rate for these groups.

Investigating the question of household formation in the broader population, Masnick (2001a) agrees that influential factors include the age structure of the population (particularly the baby boom and its echo), and the rates of home-leaving, marriage/partnering, divorce, and remarriage. Masnick argues that inter-temporal changes in these factors in recent decades have increased the headship rate. For example, the share of households comprised of a single individual increased from 13.3 percent in 1960 to 25.8 percent in 2000. Between 1970 and 1980, the ratio of divorces to marriages doubled, thereafter remaining constant, while the rate of remarriage has fallen over time. However, the amount of partnering has doubled since 1960, partly offsetting the decline in the percentage of the population that has never married.

Other factors not frequently considered in existing discussions of homeownership may contribute to changes in ownership rates or gaps between groups. Included in this category is the set of individuals

living in census defined group quarters such as prison inmates and college students in dorms. Data compiled by the Bureau of Justice Statistics (Beck and Harrison 2001) indicates that the rate of individuals serving a sentence of one or more years in a Federal or State Prison increased by 79 percent between 1990 and 2000. The rate of incarceration per 100,000 population increased by 63 percent.

The rate of incarceration of male prisoners by racial and ethnic group in 2000 is shown in Exhibit 2-3:

Exhibit 2-3
Male Incarceration Rates By Age and Race in 2000

Age Cohort	White	Black	Hispanic
20-24	0.9%	7.3%	2.5%
25-29	1.1%	9.7%	2.9%
30-34	1.2%	8.7%	2.7%
35-39	0.9%	7.5%	2.1%

Source: Beck and Harrison (2001).

The rate of incarceration is much higher for black males compared with white and Hispanic males, approaching 10 percent of the population for those ages 25 to 29. The racial and ethnic pattern for females is similar, but the rates are about $1/15^{th}$ as high. During the 1990s, the number of inmates increased 85 percent for blacks, 79 percent for whites, and 68 percent for Hispanics.

Two micro data based papers study the joint choice of household type and tenure choice (Borsch-Supan 1986; Haurin, Hendershott and Kim 1994). An important contribution of these studies is to control for possible sample selection bias in the estimation of tenure choice; that is, they simultaneously account for the choice of household structure and tenure choice. However, neither study addresses the question we pose here: what is the aggregate effect of differences in household formation and types among racial and ethnic groups on the homeownership gap.

Hendershott (1988) studies the impact of household formation on the homeownership rate in the 1960-85 period. He reports that headship rates increased for all age categories. Also, there have been substantial changes in the age distribution due to the baby boom and subsequent baby bust that have impacted the overall headship rate. From 1960 to 1985, the headship rate increased by 25 percent, of which 46 percent was due to social factors including increasing divorce rates and a lower likelihood of marriage. The remaining 54 percent was due to changes in the age distribution of the population. The impact of this change in headship on the homeownership rate was large. If age and the ownership rates of specific household types had remained constant from 1960 to 1985, the ownership rate would have fallen from 0.623 to 0.570. Instead, the observed ownership rate rose from 0.623 to 0.638 because of the substantial increase in average age and changes in the homeownership tendencies of specific household types (e.g., married couples).

Hendershott does not analyze homeownership or headship rates by race, ethnicity, or income level, thus he sheds no light on our topic. Nor does he account for the impact of changes in the tendency of individuals to reside in group quarters. However, his finding that the changes in household formation

had an impact on the homeownership rate of 6.8 percentage points, holding constant the tendency to own a home for a family of given characteristics, shows the dramatic impact that changes in headship rates can have.

Masnick (2001b) discusses the role of demographic differences in determining the homeownership gap between groups and he emphasizes the importance of accounting for specific age cohorts. This observation is critical because the age structure of the population comparing white with black or Hispanic households is different; there are more young black and Hispanic adults relative to their population size compared with whites. Because there are great differences in ownership rates comparing young to older adults, the impact of differences in age structures among groups on the ownership gap could be substantial. Further, differences in age structures will affect the evolution of the homeownership gap even if other influential factors do not change.

In Exhibit 2-4 below we list a few key socio-demographic factors related to the determination of headship rates by race and ethnicity. The rate of never married black individuals is higher than for any other group, and their rates of divorce and widowhood are also high. These observations suggest that the headship rate for blacks will be high, and the exhibit shows that it is substantially greater than that for Asians or Hispanics. Somewhat surprisingly, the headship rate for white and black households is nearly identical. Offsetting these demographic factors for black individuals is the relatively high rate of black individuals living in group quarters, which is two to three times the rate for other groups. Other offsetting factors include relatively low median household income and a higher tendency to live in areas with high constant-quality house prices (e.g., central cities).

A simple numerical example illustrates the manner by which differences in household formation across racial groups can affect observed homeownership rates. Suppose that 80 percent of married/partnered households own their homes while 40 percent of single-person headed households own regardless of race. In addition, for each race suppose there are equal numbers of adult men and women, but that while 75 percent of white men (and women) are married/partnered, only 50 percent of black men (and women) are married/partnered. Finally, suppose there are 1,000 of both white and black adults.

Exhibit 2-4
Census Data for 2000: Headship and Demographic Characteristics of the Population

	Whites*	Blacks*	Hispanics	Asians*
Headship Rate: Age >18 (percent)	52	53	40	42
Households (millions)	78.8	12.5	9.3	3.3
In Census Defined Group Quarters > Age 18 (millions)	4.9	1.6	0.6	0.2
Percent of Population in Group Quarters to Population > Age 18	3	7	3	2
Married Rate: Age 15+	56.9	38.8	55.8	58.6
Never Married Rate: Age 15+	24.5	43.6	33.2	33.1
Divorced & Separated Rate: Age 15+	9.6	10.9	7.1	4.3
Widowed Rate: Age 15+	6.8	6.7	3.9	4.0
Median Household Income ($000)	45.9	30.4	33.4	55.5
Percent of Own Race in Central City (high cost housing)	21.2	53.1	46.4	---
Percent of Parents in Family Households who are Single Parents	22.4	56.2	28.9	---

Source: U.S. Census Bureau, 2000 Decennial Census, Summary File 1.
*Non-Hispanic

The first two rows of Exhibit 2-5 below describe the number of single-headed households, married households, rate of married households, and owner-occupancy rate for the white and black populations. The third row recalculates those values under the assumption that ten percent of black males live in group quarters and would otherwise have been in single person households.[9] These individuals are removed from the population for which headship and homeownership rates are calculated.

Exhibit 2-5
Hypothetical Household Formation and Homeownership Rates

Race	Total Adults	Single Households	Married Households	Total Households	Married Household Rate	Homeowner-ship Rate
White	1,000	250	375	625	60.0%	64.0%
Black	1,000	500	250	750	33.3%	53.3%
Black-with 10% of men in group quarters	1,000	450	250	700	35.7%	54.3%

[9] The assumption that incarcerated males come out of single person households is based on the fact that incarcerated males are concentrated in younger age groups.

It should be emphasized that the numbers in this exhibit are fictitious and are intended purely for illustration. Conditional on the demographic traits of the individual households – including race – homeownership rates are assumed identical in this example. But, marriage rates differ by race. These differences affect the rate of household formation and, in this stylized hypothetical example, give rise to substantial differences in predicted owner-occupancy rates between white and black households.

Comparing the first two rows of Exhibit 2-5, it is evident that lower marriage rates among adults lowers the homeownership rate among households. Conversely, comparing the second and third rows reveals that higher incarceration rates raise the homeownership rates among households. However, this result is in part based on the assumption that all incarcerated males were in single person households. If instead it were assumed that they come out of the population generally, lowering the single person and married households proportionally, the result would be a slightly lower homeownership rate of 52.4 percent.[10] As reported above, the marriage rate among white adults is similar to that of Hispanic adults, but much higher than the rate for black adults. Even in a world where homeownership propensities are identical for households conditional on their demographic traits, differences in marital status rates would elevate the homeownership rate of white and Hispanic households over black households.

In the third row, the higher rate of living in group quarters for black men reduces the number of households. The implication for homeownership is that the rate for blacks rises compared with the case where the rate of living in group quarters is the same for blacks and whites (row 2). Thus, the homeownership gap between black and white households is reduced by 1.0 percentage points in the example. Over time, higher rates of group quarters residence by blacks, as might be due to an increasing rate of incarceration in the 1990s, would tend to "cause" the ownership gap to decrease – though that would offer very little cause for satisfaction.

Although the example outlined above is stylized and hypothetical, it highlights the fact that differences in household formation have the potential to contribute to disparities in homeownership rates across subgroups within the population. In practice, recent HUD-sponsored work by Haurin and Rosenthal (2003) finds that this effect, though present, is modest in magnitude. As summarized in Chapter 1, findings from Haurin and Rosenthal (2003) tend to suggest that where changes in headship behavior since 1970 affected homeownership rates, lower headship rates reduced homeownership. This occurred because with lower headship rates some prospective households do not form, and many of these prospective households would have been owner-occupants. This pattern is strongest for individuals in their early and mid-20s for whom reductions in headship rates between 1970 and 2000 served to depress homeownership rates by 3 to 5 percentage points. As noted earlier, that effect accounts for much of the observed decline in homeownership for this group over the 1970 to 2000 period.

With regard to racial differences in homeownership, Haurin and Rosenthal (2003) find that black homeownership rates in 2000 would be roughly 3 to 5 percentage points higher if African Americans formed households as do white families, especially for individuals in their 20s and 30s. For Hispanic families the opposite holds: Hispanic homeownership rates would be 2 to 4 percentage points lower if

[10] If the more restrictive assumption were made that all incarcerated males were both single persons *and* renters, the homeownership rate would drop to 50 percent.

Hispanic families formed households in a manner comparable to that of white families, especially again for individuals in their 20s and 30s. Thus, controlling for headship behavior, white-black homeownership gaps are somewhat more severe than previously recognized, while the reverse is true for white-Hispanic gaps in homeownership, but these effects are modest relative to the size of the overall gaps and pertain primarily to individuals in their 20s and 30s.

2.3 Demand for Homeownership

2.3.1 User Cost and The Relative Cost of Owning to Renting

The "User Cost" approach to modeling the decision to own or rent the primary residence emphasizes the relative cost of owning versus renting a given home taking a myriad of cost factors into account. That relative cost – defined as the cost to an owner-occupier of one dollar's worth of housing in the rental market – differs across families for a variety of reasons, including differences in marginal income tax rates that affect the sensitivity of the family to favorable tax treatment of homeownership, expected length of stay in the home which affects the discounted transactions cost of buying and selling real estate, and expected appreciation on the home. Each of these factors is considered briefly below.

Beginning with Laidler (1969) and Aaron (1970), researchers have considered how the tax code affects the cost of owner-occupied housing relative to rental housing. In the United States, homeowners are not taxed on imputed rent[11] and are allowed to deduct mortgage interest and property tax payments, but are not allowed to deduct maintenance expenditures. In contrast, landlords are taxed on their cash rent but are allowed deductions for mortgage interest, property taxes, and maintenance. Assuming competitive rental markets, tax provisions that favor landlords are passed on to tenants while owner-occupiers benefit directly from the favorable tax treatment of homeownership. On balance, Rosen (1979), King (1980), and others have shown that the net effect of these tax provisions is to subsidize the cost of homeownership relative to rental housing for many families. Using data from the 1981 American Housing Survey, Hoyt and Rosenthal (1994) estimate that the average cost to a U.S. owner-occupier of "one dollar" of housing is roughly 73.5 cents. Moreover, because the value of the favorable tax treatment of homeownership increases with the family's marginal income tax rate, this figure differs across households.[12]

A second source of variation in the user cost of housing is the expected capital gain on the home. Historically, house price movements have been quite variable across regions. However, in the long run, efficiency in the real estate market would impose some discipline on these house price movements and ensure that risk adjusted rates of return would be similar across locations. But, over a shorter time horizon, it is likely that expected capital gains on housing differ across regions and cities.

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[11] "Imputed rent" is the market value of the housing services consumed by the owner-occupant. It is imputed since obviously the owner does not make any explicit payments for these services.

[12] Hoyt and Rosenthal (1992) assume that all owner-occupiers itemize and take advantage of deductions for mortgage interest and property tax payments. However, Follain and Ling (1991) show that many owner-occupiers do not itemize but instead take the standard deduction. For these households, owner-occupied housing is less heavily subsidized than the estimate reported above would suggest but likely is still less expensive than rental housing because of the failure to tax imputed rent.

This would give rise to regional differences in the user cost of owner-occupied housing.[13] In principle, of course, capital gains benefit both landlords and, by extension, renters, as well as owner-occupiers. However, historically the tax code has treated capital gains more generously for owner-occupiers than for landlords.[14] As a result, higher expected capital gains likely reduce the user cost of owner-occupied housing, especially for families in higher tax brackets.

The above argument depends implicitly on the time horizon of the prospective owner-occupant, a horizon that in turn is sensitive to the anticipated length of stay in the home. Length of stay in the home also has a direct and powerful effect on the relative cost of owning to renting. Owner-occupiers incur substantial transactions costs when buying and selling their homes that are not incurred by renters. Realtors, for example, typically charge six percent of house value for their services. Add to this substantial legal fees, administrative costs, and taxes, and Linneman (1986) estimates that the cost of buying and selling a home is roughly 12 percent of property value. The discounted value of these transactions costs decline with length of stay in the home. Rosenthal (1988) formally incorporates these transactions costs into a user cost measure of owner-occupied housing and finds evidence consistent with the idea that transactions costs and tax-related costs have a similar influence on homeownership decisions.[15]

A number of other variations and modifications to the user cost of owner-occupied housing are present in the literature. All such studies, however, share certain features. First, they rely heavily on the tax code to generate variation across households in the relative cost of owning to renting. Second, investment motives for owning real estate are rarely taken explicitly into account. Some studies do incorporate investment aspects in the user cost measure by including the opportunity cost of housing equity as the foregone return on alternative financial investments, but related dimensions of risk and uncertainty are largely ignored. Instead, most user cost studies implicitly portray households as seeking the least expensive quality adjusted price for housing services, and in that respect, implicitly

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[13] Studies by Case and Shiller (1989), Masse and Wallace (1997), and Rosenthal (1999) all find evidence consistent with the idea that over a short time horizon the possibility for arbitrage opportunities may exist in real estate markets, but over a longer time horizon such opportunities appear to disappear.

[14] Prior to 1986 homeowner capital gains were taxed at a rate equal to 40 percent of the family's marginal income tax rate. In addition, families were allowed a one-time exemption from capital gains tax if they were over age 55 (up to fairly generous capital gain). After 1986 homeowner capital gains were taxed at a rate equal to the family's marginal income tax rate but marginal income tax rates were also lowered. The net effect however was a substantial increase in the typical tax rate on homeowner capital gains (see Hoyt and Rosenthal (1994)). Finally, beginning in 1998, the U.S. government effectively did away with the capital gains tax on homeowners of all ages for gains up to $250,000 for single filers and $500,000 for married couples filing joint returns.

[15] A number of studies have also assumed various values for the transaction costs of owners including Goodman (1995) – 5 to 10 percent of current income; Cunningham and Hendershott (1984) – 12 percent of house value; and Rosenthal (1988) – 7 percent of future house value, discounted to the present. Malatesta and Hess (1986) used a small sample to estimate that the average transaction cost of a relocating homeowner equals about 12 percent of house value. Haurin and Gill (2002) used a sample of military members and found that the transaction cost of selling a home is the sum of 3 percent of house value and 4 percent of household earnings. In addition, Shelton (1968) suggested that because of these transactions costs homeownership should be avoided if a household's planned length of stay in a dwelling is less than 3.5 years.

treat housing as a pure consumption good. A different approach to modeling the decision to own or rent the home is provided below.

2.3.2 Investment and Consumption Demands for Real Estate

Henderson and Ioannides (1983) first suggested that in the absence of taxes, transactions costs, and borrowing constraints, the decision to own a home is driven by the divergence between two quite different motives for owning real estate: investment versus consumption demand [see also Fu (1991)].[16] Investment demand (H_I) is determined by portfolio balance as households attempt to equate risk-adjusted rates of return across assets, including real estate. Consumption demand (H_C) is determined by preferences for housing services such as space for family members, the desire to stay warm and dry, school quality, and other attributes of the home and neighborhood that directly affect a family's well-being. For a given family, if a family's consumption demand is large relative to investment demand, for example when family size is large but the family believes house prices will decline, purchasing a home sufficient to satisfy the consumption needs of the family would constitute a bad investment. In this case the family is financially better off if it satisfies its consumption demand by choosing to rent its principal residence. Alternatively, if housing is a great investment for the family and the family's housing consumption needs are modest, then owner-occupying the primary residence would be a good investment. Under these conditions, the family could either purchase a home equal to their desired investment demand (H_I) and then rent out that portion of the home not wanted for personal use (e.g., a basement suite), or purchase a primary home equal to their consumption demand (H_C) along with a second investment property equal to the difference between these amounts ($H_I - H_C$).[17]

Exhibit 2-6 describes a modification of this model that is useful for our purposes and which has been examined by Ioannides and Rosenthal (1994). The determinants of investment and consumption demand (H_I and H_C) are shown on the horizontal axis and are referred to as X in the discussion to follow. The attributes of X include household attributes such as wealth and income and are defined such that an increase in X leads to an increase in the investment and consumption demands for housing. The vertical axis of Exhibit 2-6 indicates the level of housing stock occupied by the family.[18]

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[16] Despite intuitive appeal, the investment-consumption demand model of housing tenure choice has been little used in previous studies of housing demand and tenure choice, although recent exceptions include work by Ioannides and Rosenthal (1994), Brueckner (1997), Arrondel and Lefebvre (2001), and Howe (2002). Possibly this omission is because the original Henderson-Ioannides presentation of the model was developed in a somewhat abstract setting devoid of many of the policy considerations that have motivated public debate about homeownership in recent years. However, in the discussion to follow, we will show that the model provides clear predictions about many of the homeownership gaps that have been the focus of recent policy discussions.

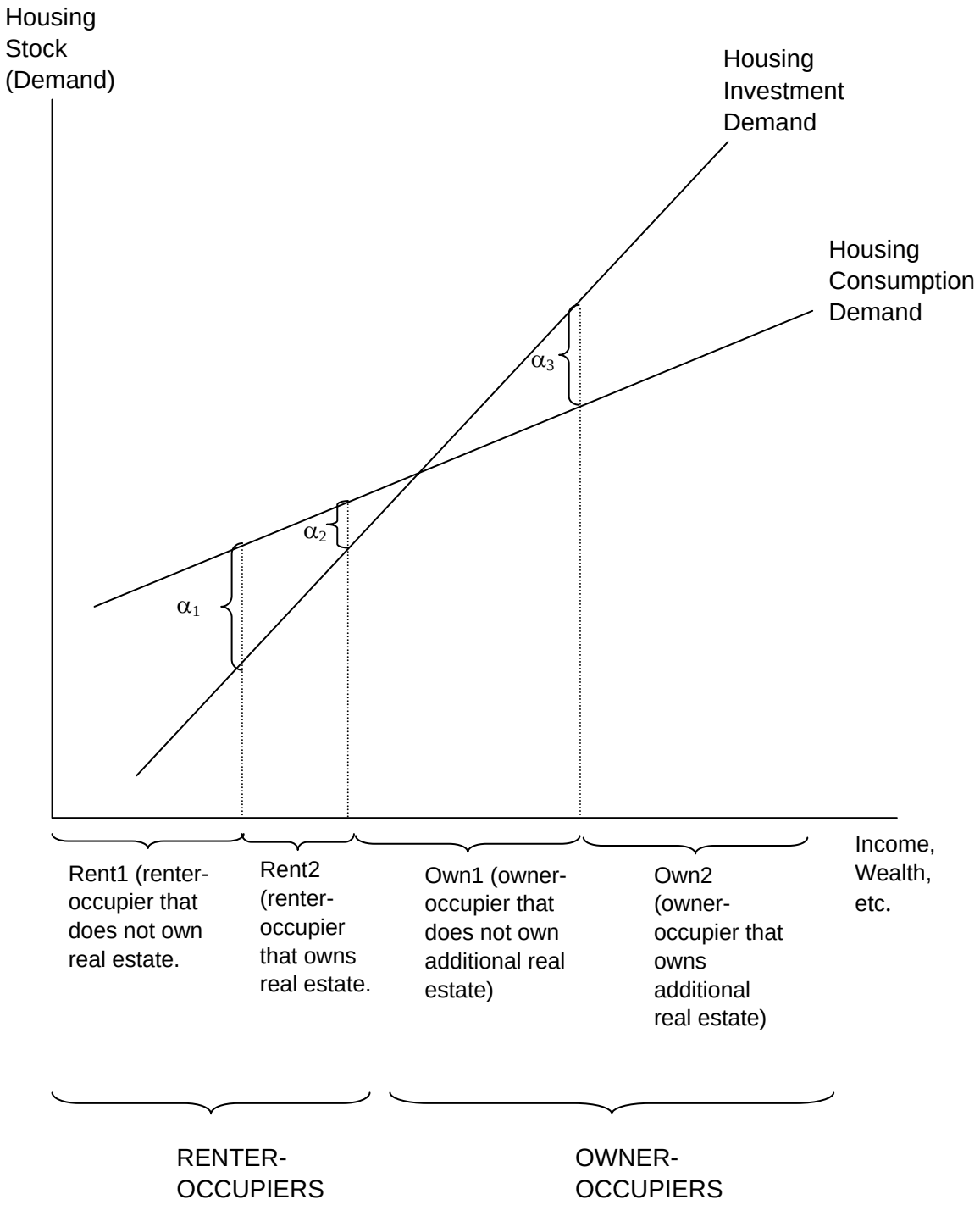
[17] Henderson and Ioannides also emphasize that if H_C exceeds H_I by only a small amount, families that are good at maintaining their property may distort their investment demand and own H_C. This would occur to the extent that landlords charge rents that reflect average maintenance costs across potential tenants, causing tenants who have a predisposition to maintain their home to pay rents that exceed the marginal costs they impose on landlords.

[18] A precise algebraic description of the arguments above is provided in Appendix A to this chapter.

The model in Exhibit 2-6 takes into account that as investment demand (H_I) increases the preferred level of investment in real estate goes up, irrespective of the preferred housing tenure. Accordingly, in region Rent1, not only does consumption demand (H_C) exceed investment demand (H_I), but it is also assumed that investment demand is sufficiently low that families do not want to hold any real estate in portfolio. The household, therefore, rents an amount equal to consumption demand (H_C) and holds no housing for investment purposes. In contrast, in region Rent2, the household still prefers to rent their primary residence but investment demand (H_I) is now large enough that the family holds some real estate in portfolio. In the region Own1, households prefer to owner-occupy their primary homes but investment demand (H_I) does not sufficiently exceed consumption demand (H_C) to warrant holding additional real estate. Finally, as investment demand continues to rise up above consumption demand, households owner-occupy housing equal to consumption demand, H_C, and hold additional housing stock in portfolio equal to the difference between H_I and H_C.[19]

[19] Define the difference between H_I and H_C as J, and let α_1, α_2, and α_3 as the set of critical values for J that determine transition from Rent1 to Rent2, Rent2 to Own1, and Own1 to Own2, respectively, as shown in Figure 2.3-1. Observe that $\alpha_1 < \alpha_2 < \alpha_3$ (consistent with arguments above). This says that as the difference between the investment and consumption demands for housing increases, households switch successively from housing tenure Rent1 to Own2. In addition, if households rent only when H_C exceeds H_I, α_1 and α_2 would be negative, while α_3 would be positive if families own only when H_I is greater than or equal to H_C. These principles have been used to test the model in Figure 2.3-1 by Ioannides and Rosenthal (1994), Arrondel and Lefebvre (2001), and Howe (2002). The manner in which these tests have been carried out is outlined in Appendix A to this chapter.

Exhibit 2-6
Housing Tenure and the Investment and Consumption Demand for Real Estate



This four-part characterization of housing tenure arises naturally out of the distinction between investment and consumption demands for housing. The relative magnitudes of these groups, however, have only rarely been noted. But in the context of policy discussions regarding homeownership gaps, it may well be desirable to treat Rent2 households differently from other renters. To put this in perspective, Exhibit 2-7 below reports the distribution of U.S. households belonging to each of these four sub-tenure categories for 1983 and 1998 based on data from the Survey of Consumer Finances.[20]

Exhibit 2-7
Percentage of U.S. Households By Housing Tenure in 1983 and 1998

	Rent Primary Home			Own Primary Home		
	Rent1[a]	Rent2[a]	All Renters	Own1[a]	Own2[a]	All Owners
1998	31.3%	2.5%	32.8%	50.1%	16.1%	66.2%
1983	31.6%	2.9%	34.5%	50.3%	15.2%	65.5%

Sources: Estimates from 1983 are taken from Ioannides and Rosenthal (1994) and were obtained from the representative portion of the 1983 Survey of Consumer Finances (SCF). Estimates from 1998 are tabulations by the authors using the 1998 SCF using sampling weights to ensure that they are representative of the United States.

[a] Rent1 households rent their primary residence and do not own real estate. Rent2 households are renters who do own real estate. Own1 households own their primary residence but do not receive rental income or own other real estate. Own2 households own their primary residence and do receive rental income and/or own other real estate. In addition, in 1998 ownership of real estate included all forms of real estate except burial plots and garages.

Note that the exhibit shows that overall homeownership rate rose 0.7 percentage points over the 1983 to 1998 period, consistent with estimates reported elsewhere in this report.[21] Moreover, in both years renters who own real estate accounted for an important percentage of renters: 8.4 percent in 1983 (equal to 2.9/34.5) and 7.6 percent in 1998 (equal to 2.5/32.8). Because these families have demonstrated an ability to purchase real estate, their decision to rent their primary homes is presumably largely a function of their preferences as opposed to constraints imposed by others (e.g., mortgage lenders). To the extent that public policy is less concerned about the rental status of such families, then the effective rate of *real estate ownership* as opposed to homeownership is actually somewhat higher than has previously been appreciated.

A final feature of the model in Exhibit 2-6 that has bearing on the discussion to follow concerns identification of the investment and consumption demand functions. Observe that for Own2 households it is possible to measure their investment demand based on the total value of their real estate holdings. Similarly, consumption demand for Own2 households can be measured based on the

[20] Some earlier years of the American Housing Survey (AHS) also identify whether families own additional real estate besides their primary home. In addition, all years of the AHS indicate whether the family receives rental income. Those variables are being used by Howe (2002) in his Ph.D. dissertation.

[21] As shown in Exhibit 3-3, data from the Current Population Survey indicates that homeownership rates rose by 1.4 percentage points over this period.

value of their primary residence. Thus, using Own2 households one can separately estimate the determinants of the two different types of housing demand. In addition, the "traditional" housing demand function – equivalent to the demand function estimated in a multitude of housing demand studies in the literature – can be estimated based on the primary home of all owner-occupiers (Own1 + Own2 households). Findings from Ioannides and Rosenthal (1994) indicate that the consumption demand and the traditional demand functions are quite similar. This suggests that the value of the principal residence of owner-occupiers is determined primarily by their consumption demand for housing. That, in turn, implies that the very large number of housing demand studies based on the primary residence of owner-occupiers provide considerable information on housing consumption demand as opposed to investment demand. Moreover, in comparing the two demand functions, Ioannides and Rosenthal (1994) find that investment demand is more sensitive to wealth and income than is consumption demand, while consumption demand is more sensitive to demographic variables and proximity to urban suburbs.[22] These last findings have particular implications for use of the model to explain gaps in homeownership rates as will become apparent below.

2.3.3 Determinants of Demand for Homeownership and Homeownership Gaps

Can the models above be used to explain several well-known stylized facts regarding gaps in homeownership rates? The answer is yes. Consider for example, the following differences in homeownership rates that have been emphasized in recent research and policy discussions.

(i) Low-income family (household income in the first quartile) homeownership rates were 32 percentage points below those of families with higher incomes in 1998 (Rosenthal (2002)).

(ii) Black homeownership rates were 25.7 percentage points lower than those of white households in 4th quarter 2001 (Source: HUD User Tables).[23]

(iii) Married household without children homeownership rates were 19.9 percentage points higher than single-person headed households in the 4th quarter of 2001. (Source: HUD User Tables)[24]

(iv) Age 65 and older household homeownership rates were 80.7 percent in the 4th quarter of 2001, a rate that some have characterized as surprisingly high. (Source: HUD User Tables)[25]

(v) Age 25 to 30 and age 30 to 35 household homeownership rates were 40.8 and 55.0 percent, respectively, in the 4th quarter of 2001, far below those of older families. (Source: HUD User Tables)[26]

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[22] This differs from Arrondel and Lefebvre (2001) who find little difference in the determinants of the housing investment and consumption demand functions for France.

[23] Source: http://www.huduser.org/periodicals/ushmc/winter2001/histdat29.htm.

[24] Source: http://www.huduser.org/periodicals/ushmc/winter2001/histdat30.htm.

[25] Source: http://www.huduser.org/periodicals/ushmc/winter2001/histdat27.htm.

[26] Source: http://www.huduser.org/periodicals/ushmc/winter2001/histdat27.htm.

Focus first on low-income families. Because the tax advantages of homeownership increase with the marginal income tax rate, the cost of owner-occupying a home is higher for low-income families, *ceteris paribus.* Accordingly, the user cost model predicts that low-income families should be less likely to own their homes. In addition, both housing consumption and investment demand increase with income, the former because housing services are a normal good and the later because higher-income families are more willing to take on risky assets. Recall, also, that investment demand is more sensitive to wealth and income than is consumption demand (Ioannides and Rosenthal (1994)). It follows, therefore, that investment demand likely is initially below consumption demand but rises at a faster rate with increases in income, exceeding the former at some point. Accordingly, the investment-consumption demand model also predicts that lower-income families should be less likely to own their homes.[27]

African-American families are known to have markedly lower income. For reasons just noted, we should therefore expect that blacks will be less likely to be owner-occupiers. In addition, blacks are known to have less job security. Although that difference does not have a ready place in the user cost model, reduced job security likely reduces a family's willingness to invest in risky assets, and as a result, reduces investment demand for housing. That in turn, further reduces the likelihood that blacks would want to become homeowners.[28]

Married households are less mobile than single-headed households (Quigley (1987)). Lower mobility implies that the transactions costs of owning a home can be spread out over a longer period. In the user cost framework, lower mobility thus reduces the per annum relative cost of owning compared to renting, increasing the likelihood that married households own their homes. Similarly, lower per annum transactions costs increase the rate of return on investing in owner-occupied housing, which in turn increases investment demand in Exhibit 2-6. Accordingly, the investment-consumption model also predicts that due to their lower mobility rates, married families should have higher homeownership rates.[29]

Elderly households have been occasionally described as having "surprisingly" high homeownership rates (see, for example, Venti and Wise (1990) and Megbolugbe, Sa-Aadu, and Shilling (1997)). That perception may reflect awareness that elderly families have lower marginal income tax rates and, as a result, benefit less from the favorable tax treatment of homeownership. In addition, elderly households likely have a shorter investment horizon and rely more heavily on various sources of

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[27] Moreover, in the context of the investment-consumption model, if income were the *only* determinant of homeownership, low-income families would likely *all* prefer to rent, and their homeownership rate would be zero. In practice, of course, many other factors affect demand for housing, which accounts for the positive homeownership rates among low-income households.

[28] Similarly, African Americans are known to be less wealthy. Wealth, however, typically has no role in user cost models of homeownership. On the other hand, since wealth likely increases both investment and consumption demand for real estate, it seems likely that among low-wealth families consumption demand exceeds investment demand. Accordingly, the investment-consumption model predicts that low-wealth families are less likely to own their homes.

[29] Household mobility likely has a much larger effect on investment demand for owner-occupied housing relative to other real estate since moving implies significant transactions costs primarily for the principal residence. That difference is not directly captured by the model.

unearned income, both of which would tend to reduce the willingness to invest in a risky asset such as real estate. These characteristics would be expected to reduce homeownership rates among elderly families, *ceteris paribus*. On the other hand, elderly families have smaller family sizes, which reduces their consumption demand for housing. Hence, it appears likely that both investment and consumption demand for real estate may be lower for elderly families than for younger households. If the decline in consumption demand more than offsets the decline in investment demand (so that investment demand still exceeds consumption demand), this could account for the relatively high rates of homeownership among older households.[30]

Finally, younger households are known to have lower income, less job security, less wealth, and they are more mobile. For all of the reasons discussed above, the various features of both the user cost and the investment-consumption demand models suggest that younger families should be less likely to want to own their primary homes.

The remainder of this section systematically reviews in more detail the manner in which various determinants of the demand for homeownership contribute to homeownership gaps as implied by the models discussed in the previous sections. As will become apparent, in some instances demand factors have natural roles in both the user cost and investment-consumption models, while in other cases they affect only the investment-consumption model.

Household Mobility and Transaction Costs

As emphasized above, differences in household mobility and related transaction costs of buying and selling real estate could be an important factor in the analysis of gaps in homeownership rates between various racial, ethnic, and income groups. This is because an important determinant of the expected annualized cost of homeownership is the planned length of stay in a dwelling. Haurin and Gill (2002) show the dramatic influence of planned mobility on the annualized transaction cost of owning. Using as a baseline an eight percent mortgage and four year planned length of stay, they demonstrate that a household holding the same mortgage but staying only one year would generate a user cost of owning equivalent to a four year stay and a 21 percent mortgage interest rate. Additional detail is listed in their table, reproduced in Exhibit 2-8 below. They conclude that households with high expected mobility rates will be much less likely to select to own a home.[31]

What impacts do differential mobility rates have on the gap in ownership rates comparing racial, ethnic, and income groups? There are no published studies of the differences in transaction costs of

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[30] It is also true that, in fact, the elderly do not move to smaller housing units as often as would be expected. In part this may be attributable to the high transaction costs of moving. In addition, elderly households may have a strong preference for their existing home because of emotional attachments to this property and the surrounding neighborhood.

[31] Care is needed in interpreting the data because of the possibility of reverse causality; that is, tenure choice influences mobility rates (Boehm 1981). This occurs because once a household becomes an owner-occupier, relocation typically involves selling the home. To avoid this cost, a household may decide to stay even if the quantity of housing is nonoptimal, while a renter would move. Alternatively, a household might decide to improve the property if its housing demand rises or let the property depreciate if its demand falls. In all of these cases ownership encourages a longer duration of stay. In addition, Genesove and Mayer (2001) show that tenure can influence mobility rates because owners in a down market often delay selling in order to avoid nominal losses.

owner-occupiers by race-ethnicity and income. However, mobility rates do differ by race, ethnicity, and income and thus influence annualized transaction costs. Consider, for example, the patterns displayed in Exhibit 2-9 from Haurin and Gill (2002). That exhibit describes the percentage of households that moved in the one-year period between 1998 and 1999, breaking out these measures by income category and age.

Exhibit 2-8
Length of Stay and Mortgage Interest Equivalent Cost

Planned Length of Stay (Years)	Mortgage Interest Equivalent (Rates)	Planned Length of Stay (Years)	Mortgage Interest Equivalent (Rates)
0.5	39.1%	4.0	8.0%
1.0	21.3%	5.0	7.1%
1.5	15.4%	7.0	6.1%
2.0	12.5%	10.0	5.3%
2.5	10.7%	15.0	4.8%
3.0	9.5%	20.0	4.5%
3.5	8.6%		

Source: Haurin and Gill (2002).

Exhibit 2-9
Percent of Households Moving Between 1998 and 1999

By Income		By Age	
Less than $5,000	26%	20 to 24 years	33%
$5,000 to $9,999	18	25 to 29 years	32
$10,000 to $14,999	18	30 to 44 years	17
$15,000 to $24,999	18	45 to 64 years	8
$25,000 to $34,999	17	65 to 74 years	5
$35,000 to $49,999	15	75 to 84 years	4
$50,000 to $69,999	14	85 years and over	4
$70,000 and over	11		

Source: Haurin and Gill (2002).

Observe also that the percent of households between ages 25 and 60 that moved in the last five years is listed in Exhibit 2-10. These values are derived from the 1990 IPUMS 1 percent sample and are weighted using the household weights in order to be representative of the United States in 1990. Both exhibits report actual mobility, not the planned length of stay, but it is clear that mobility is greater for the young and for low-income households. Thus, the investment return on owner-occupied housing is lower for low-income households and young adults, implying lower homeownership rates.

Exhibit 2-10
Percentage of Households Between Ages 25 to 60 that Moved in the Last Five Years

	Percent of Households that Moved in the Last 5 Years
Tenure Status	
Own	45.3%
Rent	78.1
Age	
25-30	87.9
30-40	66.6
40-60	35.9
Total Family Income	
1st Quartile	63.8
2nd Quartile	59.6
3rd and 4th Quartiles	49.6

Source: Authors' tabulations of IPUMS 1990 1-percent sample of the decennial census.

The one-year mobility rates from Haurin and Gill (2002) by race and ethnicity are listed in Exhibit 2-11 for 1999-2000.

Exhibit 2-11
Percent of Households Moving Between 1999 and 2000

Race	Percent Moving
White (non-Hispanic)	14.4%
Black	19.1
Hispanic	21.0
Asian	20.4

Source: Haurin and Gill (2002).

However, the five-year mobility data from the weighted 1990 PUMS in Exhibit 2-12 show a somewhat different pattern. In both cases, the mobility rate for white households is the lowest (or nearly so), and that for Asians and Hispanics is higher. The rate for black households is high relative to white households for one-year mobility rates, but it is nearly identical to that for white families for five-year rates.

Exhibit 2-12
Percent of Households Moving Between 1985 and 1990

Race	Percent Moving
White (non-Hispanic)	54.9%
Black	54.3
Hispanic	64.1
Asian	73.6

Source: Authors' tabulations of IPUMS 1990 1-percent sample of the decennial census.

This difference in mobility rates for blacks could reflect the difference in sample years or could arise from the difference in focus, 1-year versus 5-year mobility rates.

Using the 1990 IPUMS we also estimated a simple linear probability (ordinary least squares) regression in which five-year mobility rates are regressed on a household's race, ethnicity, age, and income quartile. As above, the data were weighted to ensure that the results are representative of U.S. households in 1990. Results are listed below in Exhibit 2-13 where separate regressions are reported for owner-occupiers and renters. The estimates confirm that young families are the most mobile and that mobility is greater for Asian households.[32] However, after controlling for age and income, it is clear that black households are less mobile than comparable white families, both for renters and for owner-occupiers. In addition, note that low-income renters are relatively mobile, but low-income owners are less mobile. This difference may reflect that low-income owners include elderly homeowners who are likely very immobile.

Exhibit 2-13
OLS Regressions of Whether Family Moved In the Last Five Years[a]

	Renters		Owners	
	Coefficient	**t statistic**	**Coefficient**	**t statistic**
Black	-0.1141	-40.04	-0.0660	-22.32
Asian	0.0537	9.27	0.1714	25.83
Hispanic	-0.0180	-4.95	0.0195	4.60
Age 25-30	0.2770	113.96	0.5602	274.3
Age 30-40	0.1758	66.05	0.3144	172.6
Total Family Income in 1st Quartile	0.0338	13.06	-0.0231	-10.16
Total Family Income in 2nd Quartile	0.0153	5.49	-0.0170	-9.92
Constant	0.6367	232.4	0.2898	239.7
Number of Observations		156,491		338,218
R^2		0.0916		0.1741
Root Mean Squared Error		0.3942		0.4524

Source: Authors' estimates based on IPUMS 1990 1-percent sample of the decennial census.

[a] Omitted race category is white. Omitted age category is age 40 through 59. Omitted income category is the upper half of the family income distribution.

Summarizing, we know that the annualized transactions cost of buying and selling a home are far higher for mobile families than for more stationary households. Those differences must contribute to differences in the rate of return on investing in homeownership. For that reason, for many mobile families homeownership may be a risky investment at best, and homeownership rates among such families would be expected to be correspondingly low. Such effects could potentially explain part of the gap in homeownership rates across racial, ethnic, and income groups. The above evidence that low-income renter households are relatively mobile is compelling in that regard. The above evidence

[32] We do not account for the sample selection bias that likely occurs due to estimating separate regressions for owners and renters since expected mobility affects the tenure choice.

regarding the influence of race and ethnicity on mobility is less clear. After controlling for income and age Asians are more mobile than whites, both among renters and among owner-occupiers. This implies lower Asian homeownership rates. Among Hispanics the evidence above is mixed, with lower mobility rates among renters and higher rates among owner-occupiers after controlling for age and income. Finally, blacks are less mobile than whites after controlling for income and age for both renters and owner-occupiers – implying *higher* homeownership rates. This finding suggests that other factors in addition to mobility likely play an important role in determining white-black gaps in homeownership rates. More generally, the influence of mobility on homeownership rates and gaps is something that warrants further study.

House Price Levels

House price levels may also influence homeownership gaps but the causality is often misunderstood. The user cost model, for example, emphasizes that homeownership decisions are sensitive to the relative cost of owning to renting, not to house price levels per se. In that regard, it is important to recognize that regional and even local differences in the quality-adjusted price of housing do not necessarily contribute to regional differences in homeownership rates. The reason is because house rents (quality adjusted) could vary across locations in a manner comparable to house prices, leaving the relative cost of owning to renting unchanged.[33]

On the other hand, basic theory suggests that with efficient asset markets, house prices reflect the discounted stream of rents net of maintenance costs, tax considerations, and adjustments for expected capital gains. In that regard, *current* rents are determined by the supply and demand for housing in the current period, but house prices are sensitive to both current and expected future demand and supply. In the short run, excess supply or demand for housing can certainly arise in different degrees in different localities. Although markets presumably adjust to such pressures given sufficient time, in the short run, the relative cost of owning to renting could vary substantially across regions in any given year. Nevertheless, there is little evidence in the literature to suggest whether such effects contribute to systematic differences in the demand for homeownership and homeownership gaps.[34]

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[33] For example, theoretical work by Bailey (1959) suggests that supply and demand forces combine with prejudice by whites against minorities to result in an equilibrium solution whereby minority households pay less than whites for the same quality housing. The exception is households living at the black-white border who pay the same for housing. Bailey's theory is based on the assumption that black-white borders are flexible over time. Others theorized that borders between racial and ethnic groups are fixed, leading to a housing submarket approach and the conclusion that minorities could pay either more or less for the same quality housing depending on the supply and demand conditions in both submarkets. Empirical results are mixed, some studies find constant-quality house prices are greater the higher is the percentage of households in the neighborhood that are white (King and Mieszkowski 1973), some find the opposite (Schnare 1976), while some find it depends on the particular city (Kiel and Zabel 1996). On balance, there appears to be little consensus about whether minorities pay more or less for similar quality housing relative to white households. Moreover, in all of these studies findings do not necessarily have implications for differential homeownership rates for white and black households since Bailey's model applies both to house price levels and rents.

[34] On the other hand, higher house price levels may increase the degree to which downpayment constraints restrict access to owner-occupied housing. That possibility is considered in Section 2.4 where supply constraints are discussed.

House-Price Appreciation and Capital Gains

Both the user cost and investment-consumption models discussed earlier suggest that expected house-price appreciation and capital gains should influence the likelihood of homeownership. From the user cost perspective, higher expected appreciation reduces the relative cost of owning to renting given the more favorable tax treatment of capital gains enjoyed by owner-occupiers relative to landlords. From the investment-consumption perspective, higher expected capital gains increase the investment demand for real estate without directly affecting consumption demand: this also increases the propensity for homeownership. To the extent that expectations of house-price appreciation differ across locations and groups – for example between white and non-white households – this would certainly contribute to differences in the demand for homeownership and gaps in homeownership rates. Nevertheless, although the empirical literature about house-price appreciation is relatively well developed, few articles specifically focus on racial and ethnic differences in appreciation rates.

The limited attention to racial and ethnic differences in house-price appreciation presumably reflects implicit assumptions that house-price appreciation rates are similar for white and non-white households. But in a discriminatory environment this may not be the case. Suppose, for example, that in-movement of minority families contributes to "white flight" from the local neighborhood because of discriminatory attitudes. Under these conditions, the arrival of minority households would reduce demand for housing in the neighborhood resulting in a decline in property values, *ceteris paribus*. In this manner, minority households could be exposed to persistent and systematically lower house-price appreciation by virtue of their presence in a neighborhood.

McCarthy, Van Zandt, and Rohe (2001) report nominal house-price appreciation of 40 percent among suburban houses and 35 percent among central city houses between 1987 and 1997. OFHEO's repeat sales price index approximately doubled between 1975 and 1985, and doubled again by 2000 (Office of Policy Development and Research 2001). However, there are substantial variations in the growth rates of house prices across space. The data in Exhibit 2-14 show the ratio of constant-quality house prices in 2001 to 1975 by census division.

Exhibit 2-14
The Ratio of Constant-Quality House Prices in 2001 Relative to 1975 By Division

East North Central	4.0
East South Central	3.3
Middle Atlantic	4.6
Mountain	4.5
New England	6.0
Pacific	7.0
South Atlantic	3.6
West North Central	3.6
West South Central	3.0

Pollakowski, Stegman, and Rohe (1991), Babcock (1989), and Kiel and Carson (1990) find that low- and high-value homes have similar appreciation rates, with both higher than mid-valued houses. Li and Rosenblatt (1997) argue that appreciation rates are likely to vary if the housing market is

segmented, as may be true comparing housing in predominately white areas with other areas. Smith and Tesarek (1991), Delaney, Seward, and Smith (1992), Mayer (1993), and Smith and Ho (1996) find that property appreciation rates depend on the local economic climate. Smith and Tesarek find high value homes appreciate faster during periods of growth and depreciate faster during recession. Delaney, Seward, and Smith also find that high-price homes appreciate faster during booms, but appreciation rates are otherwise similar. Mayer argues that high-price homes appreciate faster on average, but they also are more volatile. Smith and Ho (1996) find that lower-price houses are more likely to appreciate as interest rates fall and income and employment rise. Belsky and Duda (2000) study the period 1982-1998 and find that low-priced homes in Boston, Chicago, Denver, and Philadelphia had higher appreciation rates than middle- or high-priced homes. In summary, there appears to be no consensus in the above studies about whether house prices rise at the same rate for all homeowners. Also, these articles do not focus on differences in house-price appreciation experienced by racial and ethnic groups.

There are only a few studies that focus on racial and ethnic differences in house-price appreciation. Coates and Vanderhoff (1993) find that the appreciation rates are similar for white and black households, controlling for MSA level variables such as population and real income growth rates. They use AHS data for 1974 to 1983, but they measure house-price appreciation only in two and three year periods because of data limitations. Their measure of house prices is the owner's estimate. While the bias in the level of house price is known (Goodman and Ittner 1992), biases in owner's estimates of house-price appreciation are not known. Also, their house prices are derived from categorical variables likely resulting in measurement error of short run appreciation rates. Kiel and Zabel (1996) also use AHS observations in three cities from 1975 to 1991 to study neighborhood level house-price appreciation. Comparing appreciation rates of black and white households, they find the results for Chicago, Philadelphia, and Denver differ greatly.

Kim (2000) studies Milwaukee and uses 36,000 observations of property prices to measure house-price appreciation for 111 neighborhoods. Kim uses the standard hedonic house price model to estimate appreciation rates from 1971 through 1993, including house characteristics and a series of year of sale dummy variables as independent variables. Indicators of neighborhood quality are omitted, thus the year of sale variables pick up changes in house prices resulting from changes in neighborhood characteristics such as school quality as well as "pure" appreciation. Kim found wide variation in the annual appreciation rates among neighborhoods ranging from -0.82 percent to 8.75 percent. The study then tests whether annual appreciation rates are related to the change in a neighborhood's median income, percent minority households, crime, and population. Kim finds a non-linear relationship between percent minority and house-price appreciation, and in general, the greater is a neighborhood's minority population, the lower is its annual appreciation. The range is from 5.7 percent in an all white neighborhood (holding constant other factors at their mean values) to 1.5 percent in an all minority neighborhood. Kim also finds that annual house-price appreciation in the poorest neighborhood was 2.6 percentage points less than in the richest neighborhood. There is no breakout of the minority household category among blacks, Hispanics, and others.

Both of Kim's major findings are relevant for our review. If minority and low-income households' homes appreciate at lower rates than other groups' homes, then their return on housing is relatively lower and their incentive to invest in owner-occupied homes is lower. This finding would suggest that at least part of the gap in homeownership is explained by a rational investment decision. The primary drawback of Kim's study is that it is specific to one metro area and the findings cannot be

generalized to the national population. What is missing from the literature is an analysis of a national sample of house price changes at the neighborhood level for a multi-decade period. This analysis is needed to determine whether differing appreciation rates contribute to differing investment returns for owner-occupied housing by income or race-ethnicity. The current empirical literature suggests that black, Hispanic, and white households in particular cities should expect different rates of house-price appreciation, but the expectations are likely city and time-period specific.

Risk

Although risk is typically ignored in user cost studies of homeownership, it has a clear and compelling role in the investment-consumption model. To be specific, investment demand for housing is sensitive to risk associated with house-price fluctuations and this can certainly contribute both to differences in the demand for homeownership across groups and to homeownership gaps. Meyer and Wieand (1996) and Brueckner (1997), for example, both present theoretical models that show that high equity homeowners are exposed to more risk because their portfolio is not diversified. Flavin and Yamashita (2000) report that the ratio of housing equity to other wealth is greatest for young households. For homeowning households age 18 to 30 in 1989, the ratio of house value to net worth was 3.5; thus, the exposure to risk from variations in house prices was substantial. Because young renters have less wealth than young homeowners, their exposure to house price risk would be even greater if they owned. Flavin and Yamashita (2000) use the PSID to calculate the real after-tax return to owner-occupied housing and they find that between 1968 and 1992, the mean return to homeowning was 6.6 percent compared with a mean return to stocks of 8.4 percent. However, the variance of the return to housing was less than half as large as the variance of return to stocks. Thus, while housing is a good investment and should be a significant part of many households' portfolios, low-wealth households are exposed to substantial risk if they own, tempering their investment demand for housing.

Yao and Zhang (2001) develop a model of tax-advantaged ownership and they allow households to choose between renting and owning. In their model, ownership requires a downpayment and houses are costly to sell. Household income, stock market, and housing returns are stochastic. Yao and Zhang's results confirm those of other studies in that they too find that young households seek to become owners because of the tax advantage and that the overall exposure to risk of these owners is higher than that of a comparable renter. In contrast to other studies, they argue that because the returns to stocks and housing have a low correlation, that households will gain a diversification benefit if they hold both housing equity and stocks, thus increasing the overall share of risky assets in their portfolio. They do not separately consider minority or low-income households in their analysis.

Belsky and Duda (2000) find the standard deviation of appreciation rates for low-priced homes is about 2.5 times greater than for high-priced homes in a study of four cities. They also find that a substantial number of households sell at a loss during the first eight years of owner-occupation, once transaction costs are included in the calculation. In a one-year period, the percentage of households selling for a nominal loss ranged from 6 percent in Chicago to 22 percent in Boston. This behavior occurs in spite of the option that a household has to not sell, thus avoiding a nominal loss. Belsky and Duda's study suggests that low-price homes may be a particularly risky investment. This finding is relevant for our review because low-priced homes are the likely entry to the housing market by low-income and minority households.

Davidoff (2002), as part of his Ph.D. dissertation work, uses a mean-variance model to explore differences in homeownership rates between different employment categories. He starts by developing a theoretical framework in which systematic co-variation between the returns to labor and the returns to housing increase the financial risk to which a household is exposed. This risk should make it less likely for someone whose labor earnings vary pro-cyclically with the housing market to own his or her home. For example, real estate agents exhibit variation in income that moves pro-cyclically with house prices. Empirical evidence developed by Davidoff using Survey of Consumer Finances data confirms the theoretical results. In the context of Exhibit 2-6, this implies that individuals whose earnings vary pro-cyclically with real estate values will have downward-shifted housing investment demand functions and, therefore, will be more likely to rent.

Sinai and Souleles (2001) study a related phenomenon that yields the opposite outcome. They suggest that owner-occupied housing provides implicit insurance against housing rent appreciation. Thus, in cities prone to bursts of housing rent appreciation – such as large cities with land supply constraints – a benefit of owner-occupied housing is the protection one gains against such effects. Sinai and Souleles (2001) find evidence to support the idea that cities subject to historically higher levels of housing rent volatility have higher homeownership rates. In addition, they provide compelling evidence that these factors are especially salient for elderly households based primarily on the following broad characterization of their work.

Sinai and Souleles divide households into those that live in cities subject to historically high rates of housing rent volatility and those that live in cities with lower rates of rent volatility. Among families under roughly age 40 there is no evidence of differences in homeownership rates in the two groups. However, beginning at about age 38, families living in high-volatility cities become increasingly likely to own relative to the low-volatility group, with the difference peaking at about 5 percentage points at age 68. Thereafter, differences diminish and disappear altogether by age 80. In the context of Exhibit 2-6, rent risk could be viewed as reducing the relative risk of homeownership in a portfolio context. As such, rent risk shifts upward the household's investment demand function and increases homeownership.

In summary, investing in housing is not without risks. There is limited evidence that the variance of house-price appreciation is greater for low-valued houses, which are most likely occupied by relatively low-income and minority households. Also, low-income and minority households have low-wealth and thus are more sensitive to downturns in house prices. These observations suggest there is greater risk in investing in housing for these households; however, the empirical evidence is not conclusive. Greater risk for minorities provides a reason why their investment demand for housing could be relatively low and it may explain part of the gap in homeownership. More generally, the work by Davidoff (2002) and Sinai and Souleles (2001) underscores that the risk associated with homeownership differs across families and that such differences may help to explain gaps in homeownership rates.

Depreciation and Home Maintenance

The rate of return to investments in housing depends on the depreciation rate of the dwelling. Clapp and Giaccotto (1998) argue that properties depreciate with increased age for two reasons: obsolescence of the components of the structure and increased amounts of maintenance needed to keep property quality constant. An example of obsolescence is electrical wiring becoming insufficient to carry the load imposed by modern households. While the actual rate of wear on

structural items such as the roof may be constant, replacement is lumpy and new homes tend to require less maintenance. In theory, obsolescence should increase at an increasing rate with property age, implying a rising rate of depreciation with property age. This principle also underlies the literature on urban redevelopment (e.g., Helsley and Rosenthal (1993), Wheaton (1982)).

There have been many studies of home maintenance but most compare the maintenance rate of owner-occupied units to rental units (Gatzlaff, Green, and Ling 1998). One exception is Heywood (1997) who uses data from the English House Condition Survey and finds that low-income owner-occupiers maintain their homes less well than do high-income owner-occupiers. Emrath (1995, 1997) uses American Housing Survey data to show that maintenance expenses per square foot of housing and as a percentage of house value rise with house age. The rates are shown in Exhibit 2-15 below.

Exhibit 2-15
Maintenance and Repair Costs of Houses by Year Built

	Year Built				
Type of Cost	**Before 1960**	**1960-69**	**1970-79**	**1980-89**	**1990-95**
Routine Maintenance and Repairs per Sq. Ft.	$0.25	$0.26	$0.24	$0.23	$0.14
Routine Maintenance, Repairs, and Replacement per Sq. Ft.	$0.33	$0.35	$0.33	$0.28	$0.15
Routine Maintenance, Repairs, and Major Replacement per Sq. Ft.[1]	$0.52	$0.52	$0.48	$0.35	$0.19
Routine Maintenance and Repairs as Percent of House Value	0.62%	0.48%	0.47%	0.39%	0.21%
Routine Maintenance, Repairs, and Replacement as Percent of House Value	0.82%	0.66%	0.65%	0.49%	0.22%
Routine Maintenance, Repairs, and Major Replacement as Percent of House Value [1]	1.25%	1.09%	0.98%	0.61%	0.26%

Source: Emrath (1995, 1997).
[1]The data for this row are through only 1991.

The first three rows report maintenance costs per square foot, the next three report maintenance costs as a percentage of house value. Routine maintenance and repair costs per square foot rise with age, but the largest effect occurs soon after the home is built. If replacement costs are included, the rate of increase is more than double the cost for houses that were over 35 years old compared with recently built homes. Finally, adding in major replacements such as siding or a new roof further increases the strength of the positive relationship between house age and maintenance costs. Since older homes tend to have lower values, these differences are magnified if maintenance costs are expressed as a percentage of house value.

If black and Hispanic households tend to reside in older housing, depreciation rates of their properties will be greater. The question is whether the higher rate of depreciation affects the investment demand for the property. If the depreciation rate is known to be higher, then this attribute will be capitalized in the market price, and the net-of-maintenance rate of return will not be affected. However, households with an aversion to do-it-yourself home maintenance will either rent or choose a newer

dwelling. While this aversion to home maintenance is likely distributed throughout the population, it is probably higher than average among households with single-parent heads. The reason is that single parents have less time available for home maintenance activities. As noted previously, black households in particular have a high rate of single-parent families, perhaps contributing to a lower desire for owning older dwellings.

It is reasonable to speculate that there is a greater chance of significant and costly repairs for older homes. While these repairs are expected to occur in the future, their actual incidence is unknown until the event happens. Many types of major repairs require immediate attention (water or natural gas line breaks, failure of a furnace in winter). In addition, major repairs require either access to credit or to wealth. The mortgage market is introducing new programs to lessen the required downpayment and thus lessen the minimal household wealth needed to purchase a home. However, a household also considers the need for wealth to maintain a home. In particular, a low-wealth household is likely to be averse to owning an asset where there is a nontrivial chance of a catastrophic repair event. Instead, a low-wealth household may rationally decide to rent if its choice of properties is primarily composed of older and highly depreciated or deteriorated homes. This decision could contribute to part of the explanation for the ownership gap between black, Hispanic, and white households.

Taxation

The tax treatment of housing has been thoroughly discussed in the literature and was also discussed earlier in this chapter. In this section, we highlight selective aspects of the tax code that are most relevant to the discussion of homeownership gaps.

As noted earlier, owner-occupied housing is tax-advantaged in the U.S. (Rosen 1979, 1983). The imputed rent (market value of renting the dwelling) of owner-occupiers is not taxable income and mortgage interest and property tax payments are deductible if a household chooses to itemize deductions on its Federal taxes. It is also well known that the households gaining the greatest tax advantage are the ones with the highest tax rates, and thus highest income. Moreover, the tax advantages of homeownership are far greater among households that itemize as this allows such families to benefit from deductions for mortgage interest and property tax payments (Hendershott and Slemrod 1983). But Follain and Ling (1991) show that many homeowners choose not to itemize but instead take the standard deduction. In addition, because the propensity to itemize increases with the size of the mortgage and property tax payment, low-income households seeking lesser-valued housing are more likely to take the standard deduction in comparison to higher-income families. Thus, the tax code increases the investment return to owner-occupied housing for high-income households relative to low-income families.[35]

Compounding this issue, Follain and Ling (1991) show that the 1986 U.S. Tax Act substantially increased the standard deduction. Given that black and Hispanic households have lower incomes than white households, the increase in the standard deduction is likely to have reduced itemization among black and Hispanic households more so than among white families. Accordingly, changes in the tax

[35] Bourassa and Grigsby (2000) summarize recent views regarding the impact of the mortgage interest deduction on homeownership.

code could have contributed to a widening of the gap in homeownership following 1986 even in the absence of a change in household endowments.[36]

Another aspect of the tax code that affects the investment return to housing is the treatment of housing capital gains. Prior to 1997, capital gains on housing were taxed at the standard capital gains tax rate with two exceptions: a one-time exemption of $125,000 for households at least age 55 and a rollover (tax deferral) provision if another dwelling was purchased within a two-year window following sale of the previous home. Thus, capital gains taxes on owner-occupied housing were easily avoided by continuously purchasing a higher priced home. The result was a rule of thumb: "once a homeowner, always a homeowner." In 1995, only five percent of all sellers reported a capital gain on owner-occupied housing to the IRS, thus tax avoidance behavior was significant.[37]

In 1997, the U.S. tax law changed, eliminating the rollover provision, but enacting a capital gains exemption of $500,000 for married couples, renewable if the household lived in the property for two of the prior five years. In theory, we should now see more changes from owning to renting if owning was previously selected in order to avoid capital gains taxation. Although the impact is likely to be negligible in size, the change in law could impact white households more so than minorities, reducing the size of the gap.

In summary, the tax code substantially increases the investment return on homeownership among families in higher marginal income tax brackets, especially for families that choose to itemize. Because blacks, Hispanics, and other minorities have lower incomes than white households, this reduces the investment appeal of homeownership among minorities relative to whites. A similar situation exists when comparing young to middle-aged households, since young households have less income. These effects contribute to observed differences in homeownership rates across race, ethnicity, and income groups. In addition, these issues help to explain why homeownership studies – especially ones that do not directly control for the influence of the tax code – find that household income is a very important predictor of homeownership status and related gaps in homeownership rates.

Non-financial Returns

Households may also choose to invest in homeownership because of non-financial returns to investing in the primary home. These investment returns could influence the likelihood of homeownership and as a result, influence the size of homeownership gaps comparing income, racial, or ethnic groups. Recent research suggests that one such spillover benefit may be to the children of owner-occupiers, although this research is not without controversy. We also discuss the evidence supporting the argument that homeownership results in better health of the residents.

Green and White (1997) note that homeowners possess a financial interest in their property values and in those of their neighborhood. Hence they are more willing than renters to monitor the socially

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[36] As noted in a number of studies about homeownership gaps that are discussed later in this review, black households tend to use the conventional mortgage market less so than whites: there is more use of "rent to own" and seller financing. Thus, although we know of no studies that quantify this claim, it is possible that that the amount of formal mortgage interest paid by black households is lower than whites, ceteris paribus. The implication is that their tax advantage is lower, explaining part of the gap in ownership.

[37] See Hoyt and Rosenthal (1990, 1992) for further discussion of these effects.

deviant behavior of their children. Haurin, Parcel, and Haurin (2002a) argue that homeowners are more willing than renters to invest in their home environment and thus create a better environment for rearing their children. Haurin, Parcel, and Haurin (2002b) also argue that the linkage between homeownership and positive child cognitive and social outcomes could be tied to physical investments in home: for example, if homeowners are more likely than landlords to invest in lead-based paint abatement. If less likely to be addressed in rental housing, these factors may have negative effects on children's cognitive development and their behaviors.[38]

Green and White (1997) use data from the Panel Study of Income Dynamics and find that homeownership exerts a direct influence on reducing the likelihood of teenage pregnancy and completing high school, and they find the effect is largest for low-income families. Aaronson (2000) uses the same data to study the graduation rate of youths. He argues that some of the beneficial effect of ownership may be due to their greater residential stability and he finds that high mobility damages a child's probability of graduating from high school but that homeownership retains a positive impact. Haurin, Parcel, and Haurin (2002b) use data from the National Longitudinal Survey of Youth and find, even when many household characteristics are held constant, that math and reading scores are higher for children of homeowners and child behavior problems are lower. They also find the effects are similar for black and white homeowners.

Boehm and Schlottmann (1999) find a large positive effect of homeownership on the educational outcomes of homeowners' children. They also find that the children of homeowners have higher future incomes and are more likely to become homeowners themselves, controlling for many household characteristics. This study suggests an interesting hypothesis that there is intergenerational transmission of information about the benefits of homeownership and information about how to navigate the real estate brokerage and mortgage markets. It hints that there may be inertia in the homeownership gaps between whites and minorities. Also, it suggests that policies that close the gap may have long-term positive effects because of the intergenerational transmission of the tendency to own a home. However, further study is clearly needed.

The relationship between housing tenure status and the residents' physical health has been studied frequently, but the existing empirical studies are, in general, poorly done. The theoretical linkages between homeowning and health could occur as a result of homeowners better maintaining their properties, including minimizing the negative impact of poor quality water, lead-based paints, or structural hazards. Many of the empirical studies use British samples (Fogelman, Fox, and Power 1989; Lewis et al. 1998), but the controls for other household characteristics are poor. Uniformly, they find that homeowners tend to be healthier, both physically and psychologically. Macintyre et al. (1998) uses Scottish data to find a significant positive correlation between good physical health and homeownership, controlling for income. There are no studies of racial and ethnic differences in the impact of homeownership on the occupants' health.

A general caveat pertinent to all of the studies discussed in this sub-section concerns identification. Homeownership is more difficult to attain than rental housing, requiring the accumulation of savings for downpayment, navigation of mortgage finance options, and a host of related responsibilities that

[38] Also, renters in high-rise dwellings are known to be more likely to exhibit signs of stress and social isolation, holding constant other household characteristics.

do not arise with rental housing. Families with a particular set of characteristics, such as an unobserved tendency to invest, will be more capable of overcoming these hurdles. This suggests that a deep-seated endogenous relationship may confound efforts to identify whether homeownership creates non-financial benefits for the individual homeowners. To be precise, the possibility remains that homeowners may exhibit better health, enhanced child school performance and the like, because these selective families not only attain homeownership but also do well in other dimensions of life.

Authors of the studies noted above are cognizant of this issue and have attempted to deal with it in a variety of ways. Nevertheless, at one level, the question of whether homeownership creates non-financial benefits for homeowners remains an open question. On the other hand, to the extent that some families seek out homeownership even when the financial gains are likely to be limited (as with very mobile families), a revealed preference argument suggests the opposite. In this case, presumably families choose homeownership because homeownership enters directly into the household welfare function, enhancing the lives of owner-occupants through a variety of mechanisms including but not limited to those outlined above.

Consumption Demand for Housing

As noted earlier, Ioannides and Rosenthal (1994) found that the consumption demand function estimated using only Own2 households was very similar to a "traditional" housing demand function based on the value of the primary residence and estimated using all owner-occupiers. This suggests that the many housing demand studies in the literature that have estimated housing demand using the primary residence of *all* owner-occupiers approximate the consumption demand for housing. Provided one is comfortable with this approximation, there is a wealth of empirical evidence on the determinants of the consumption demand for housing.

Bearing this approximation in mind, both Rosen (1985) and Olsen (1988) have excellent reviews on housing demand in which estimates from many studies of the price and income elasticities of consumption demand for housing are presented. Drawing on studies prior to 1985, Rosen (1985) suggests that the price elasticity is likely about 0.95 while the income elasticity is close to 0.7. More recent studies have reported price and income elasticities below those cited by Rosen. On balance, there appears to be widespread evidence for at least two important "stylized facts." First, that consumption demand for housing is both price inelastic and income inelastic, and second, that housing demand is more responsive to price than to changes in income.

These stylized "facts" have important implications for possible gaps in homeownership rates by income, race and ethnicity, and age of the household. Inelastic housing demand implies that the family's preferred share of their budget spent on housing – from a consumption perspective – decreases with income. But there is little reason to expect that investment demand for housing would be similarly income and price inelastic. Thus, as suggested earlier, it is likely that consumption demand declines relative to investment demand with an increase in income. Since minorities and younger families are of lower income, the Investment-Consumption model discussed earlier in conjunction with evidence on the nature of the consumption demand for housing predict gaps in the homeownership rates.

2.4 Supply Factors

In contrast to the issues discussed in the previous sections, both the user cost and investment-consumption models appear less suitable for analyzing the influence of possible spatial mismatch between the location of prospective homeowners and housing stock that has appeal to homeowners, or of the influence of mortgage finance constraints. The reason that these factors are not well accounted for by the models in Section 2.3 is that they are primarily sensitive to supply-side characteristics of various markets, such as the supply of credit and the supply of different types of existing housing in different neighborhoods. In contrast, the conceptual framework laid out thus far has focused primarily on demand side factors. Accordingly, we now turn our attention to supply side issues that affect access to homeownership and gaps in homeownership rates.

2.4.1 Availability of "Suitable" Housing Stock for Homeownership

In 1975, Kain and Quigley suggested that by concentrating blacks in inner-city neighborhoods, residential segregation constrained the type of housing stock available to African-American households and thus might serve to limit homeownership among inner-city minorities. This idea rests on the implicit and quite realistic premise that different neighborhoods are filled with different types of housing stock. Thus, restrictions on the type of neighborhoods available to minorities is in large measure equivalent to restrictions on the type of housing stock available to minority households.

In part, Kain and Quigley motivated the idea of supply constraints by drawing an analogy to the then recently developed notion of an employment spatial mismatch in which suburbanization of manufacturing jobs coupled with suburban housing market discrimination reduces employment opportunities for black households. In the context of homeownership, Kain and Quigley argued that single-family detached housing stock is more conducive to homeownership. Thus, if discrimination restricts access to single-family suburban neighborhoods, blacks will disproportionately locate in central cities. Because central city areas have higher levels of multifamily housing relative to the suburbs, restrictions on access to suburban neighborhoods limits homeownership rates among minorities. Kain and Quigley provide support for this idea by demonstrating that differences between African-American and white homeownership rates are higher in metropolitan areas in which the central cities have a lower share of single-family housing stock. They also show that the share of black households living in the suburbs further reduces white-black gaps in homeownership rates, although this effect appears to not be as strong as the influence of the availability of central city single-family housing stock.

Both the original work by Kain and Quigley (1975) and more recent work by Herbert (1997) focus on a potentially provocative but also relatively little studied idea: constraints on access to the supply of different types of housing (e.g., single-family versus multifamily) might contribute to reduced minority homeownership rates. The purpose of this section is to review the conceptual foundation for these ideas and to provide some descriptive statistics that shed light on these issues. The outline of our approach is as follows. First, we will review well-established arguments for why low-income families would be expected to concentrate in the central cities regardless of race or ethnicity. Next, we recognize that central cities exhibit higher land prices and as a result, a greater frequency of high-density residential and non-residential buildings. Discrimination and the historically low-income status of minorities together ensure that minority households will be segregated in central city locations, reducing proximity to single-family housing. The question then arises as to why this would

necessarily reduce minority homeownership rates. Although it is beyond the scope of this study to answer that question, we speculate about some possible answers in the discussion to follow.

Stratification of Households by Income

A well-established principle in urban theory concerns the tradeoff between proximity to employment and house price. In the simplest economic model, all employment is located in the central city and residential locations differ only in their distance to the downtown. Assuming that households dislike long commutes, with competitive markets house prices fall to compensate for longer commutes and a spatial equilibrium is attained. In practice, this implies that the price per unit of housing is lower in the suburbs.[39] As has been demonstrated for many years in various texts on urban economics (e.g., O'Sullivan (2000)), the rate at which quality adjusted house prices decline with reduced proximity to employment centers is driven by the cost of commuting relative to housing demand.

Absent further consideration, it is tempting to assume that high-income families would live in the central cities and low-income families in the suburbs where the unit price of housing is reduced. In practice, of course, we know that the opposite is the norm in the U.S. The model just described provides one explanation for this seeming puzzle. As incomes increase, if housing demand rises more quickly than commuting costs, high-income families will outbid low-income families for suburban sites suitable for larger homes with larger lots. Such homes would be prohibitively expensive in many downtown locations, even for the wealthy. On the other hand, grouping lower-income families together in multifamily structures, developers of high-density low-income housing can outbid high-income families for central city sites, even though such sites are close to the dominant employment center. In so doing, of course, the implicit consumption of land per family in the multifamily dwelling is reduced.

Glaeser and Kahn (2001) recently reexamined the idea that tradeoffs between commuting costs and housing demand lead to stratification of high- and low-income families into predominantly suburban and central-city locations. Using the American Housing Survey they present evidence that the income elasticity of demand for lot size is actually quite low. Unless the income elasticity of commuting costs is similarly low, they argue that some other phenomena must account for the concentration of low-income families in the central cities. Upon further investigation, they argue that low-income families concentrate in the central cities at least in part to take advantage of public transportation essential for families with limited access to automobiles. Glaeser and Kahn (2001) also present evidence that central city services for the poor are more generous than services provided by suburban communities.

Both sets of arguments above – the traditional commute-housing demand hypothesis and more recent arguments related to the importance of central city services – share an important feature. Low-income families choose to live in the central city of their own accord. That premise is markedly different from suggestions that housing market discrimination accounts for at least an important share of the minority population that concentrates in the downtown. Recent studies continue to find evidence of differences in access to suburban neighborhoods. For example, evidence suggests that minority households face discrimination in the housing search process (Turner et al. 2002b). In

[39] More generally, employment can occur anywhere in the metropolitan area, but the principle still holds that with competitive markets land prices adjust to compensate for differential proximity to employment centers.

addition, there is some evidence that white and minority home-seekers differ in their likelihood of using realtor services (Farley (1996), Newburger (1995), and Turner and Wienk (1993). Given the low-income status of many urban minorities, in practice, it seems virtually certain that all three explanations help account for the continued concentration of low-income minority households in the central cities.

Central Cities, Multifamily Housing, and Homeownership Rates

The idea that differences in housing demand, commuting costs, central city services, and discrimination all contribute to spatial concentration of low-income minority households in the central cities is not controversial. In addition, the idea that central city developers subject to higher land prices would favor high-rise and multifamily buildings over lower density development is also not controversial: as land rents increase, profit maximizing developers in competitive markets would naturally substitute capital for land. It is this substitution that gives us city skylines dominated by tall buildings.

Less clear, however, is whether the concentration of minority households in the central cities restricts minority homeownership rates. The "supply constraint" hypothesis posited by Kain and Quigley (1975) and Herbert (1997) argues that reduced minority access to single family detached housing lowers minority homeownership rates because homeownership and single-family housing are complements. On the other hand, given the low-income status of many minorities, it is entirely possible that central city minority households disproportionately rent because they prefer to do so. This is certainly implied by the tenure choice model outlined earlier in this chapter: low-income households are more risk averse, housing is a risky asset, and low-income families may therefore sensibly prefer not to own.

Distinguishing between whether the supply of single-family housing stock available to minority households constrains minority home purchase, or whether low-income central city minorities simply prefer to rent is a difficult question and goes beyond what we can do in this report. However, some summary measures from the 1999 American Housing Survey are suggestive that these issues warrant further examination.

Exhibits 2-16 through 2-23 present summary measures based on unweighted data from the 1999 American Housing Survey.[40] There are two exhibits for each of three broad income groups: greater than $60,000 (Exhibits 2-16 and 2-17), $30,000 to $60,000 (Exhibits 2-18 and 2-19), and less than $30,000 (Exhibits 2-20 and 2-21). In addition, there are two exhibits for all income groups combined (Exhibits 2-22 and 2-23). For each income classification, the first exhibit reports the percentage distribution of where individuals live by race and ethnicity, location, and housing type. The second exhibit reports homeownership rates for each of these groups. In all of these exhibits, locations are separated into three categories: central city, urban suburb of metropolitan areas, and rural portions of metropolitan areas and non-metropolitan areas. Structure types are divided into single-family detached, single-family attached, multifamily, and mobile homes.

Several striking patterns are apparent in the exhibits. First, in Exhibit 2-22, as is well known, minorities are disproportionately concentrated in the central cities. Second, in Exhibit 2-23, as is also

[40] The results are almost identical if the data are weighted, with only minor differences in the homeownership rates among minority occupants of mobile homes.

well known, homeownership rates among minorities are considerably lower than for white households. These broad characterizations are largely present even after controlling for differences in income in Exhibits 2-16 through 2-21.

Much less well known, however, are the racial and ethnic patterns in homeownership rates after controlling for location, structure type, and income. Note that among high-income families (Exhibits 2-16 and 2-17), there is almost no difference in homeownership rates by race and ethnicity among single-family detached dwellers regardless of location. Nevertheless, the *overall* homeownership rate for high-income white households is nearly ten percentage points higher than for black and other minority high-income households. That difference is clearly driven by differences in the propensity to live in single-family detached housing, and more generally, to live in neighborhoods in which single-family detached housing is found.

Among middle-income families (Exhibits 2-18 and 2-19), racial and ethnic differences in homeownership are also quite modest after controlling for structure type and location, though not as small as for higher-income households. Among low-income families there are substantial racial and ethnic differences in homeownership rates across the board regardless of location and housing type.

Differences in Homeownership by Race, Location, and Building Type

The patterns above suggest that the factors contributing to racial and ethnic gaps in homeownership rates differ substantially for middle- and upper-income households versus low-income families. Among families who might be "expected" to own homes – middle and higher-income families – racial and ethnic differences in homeownership rates appear to be largely driven primarily by the location and, more precisely, the neighborhood chosen by the household. This is especially true when one considers that most neighborhoods are filled with a single type of housing, single-family detached, single-family attached, or multifamily units. For middle- and upper-income families, therefore, the question of why racial and ethnic gaps in homeownership rates exist is largely equivalent to asking why higher-income minorities are more likely to locate in multifamily central city housing.

Among low-income families, location and the type of structures in the neighborhood also have a role to play. However, for these families, it is clear (in Exhibits 2-20 and 2-21) that even after holding constant location and structure type, large racial and ethnic disparities in homeownership rates remain. For these families, a more complicated process may lie behind the racial and ethnic disparities in homeownership rates.

What could be driving the patterns observed in these exhibits? Especially for middle- and high-income households, segregation may be a factor. As argued above, powerful economic forces ensure that low-income families will be disproportionately concentrated in the central cities while higher-income families will concentrate in the suburbs. Overlay on this pattern a history of racial and ethnic discrimination in the housing market. Then one would expect that higher-income minorities would disproportionately live in central cities in close proximity to lower-income families. Alba et al. (2002), for example, report that " … middle-income suburban blacks live with many more whites than do poor inner-city blacks. But their neighborhoods are not the same as those of whites with the same socioeconomic characteristics … middle class blacks tend to live with neighbors who are less affluent than they are …"

Suppose now that lower-income inner-city neighborhoods are more subject to crime and other social ills. Such neighborhoods would likely be viewed as riskier places in which to invest in owner-occupied housing. Unless such risks were offset by sufficiently high expected returns, we would expect higher-income residents of such neighborhoods to exhibit lower homeownership rates than families of comparably high income in middle- and upper-income neighborhoods. Thus, neighborhoods accessible to middle and higher-income inner-city minorities might be higher risk environments in which to invest in homeownership relative to neighborhoods available to white families of similar income. Returning to the tenure choice model earlier in this report, everything else equal, increased risk pushes down the housing investment demand function and reduces the likelihood that families would choose to become homeowners.

A related possible issue is the process governing the organization of units within a multifamily building into a condominium arrangement. Suppose, for example, that there are administrative costs associated with the organization of multifamily buildings into condominiums. Consider also the role of within building neighborhood externalities and suppose that crime and noisy behavior is more prevalent in lower-income buildings than in higher-income buildings. Then owners of low-income rental units may prefer to own entire buildings rather than just single units. This would give property owners the ability to evict noisy or dangerous tenants. In contrast, in a multifamily condominium arrangement, owners of individual units would have less ability to police disruptive behavior within the building. This might lower demand for the site and reduce the return to property owners because of lower rents. But if crime and noise were less prevalent among occupants of middle- and higher-income multifamily buildings, then one would expect such buildings to be organized into condominiums at a higher rate.

Evaluating the viability of this argument is difficult because lower-income families are less likely to desire to own their homes for reasons discussed earlier in this chapter. However, the summary measures in Exhibits 2-17 and 2-21 still shed some light on this issue. Suppose the homeownership rate for single-family detached structures reflects the underlying tendency of a given income group to become homeowners in the absence of administrative costs associated with within building externalities. Consider now the difference in homeownership rates between occupants of single-family detached and multifamily housing. In Exhibit 2-17, for high-income households that difference is 63.2 percentage points (.954 - .322). In Exhibit 2-21, for low-income families that difference is 73.3 percentage points (.818 - .085), ten percentage points higher. These patterns are suggestive that the administrative costs of organizing low-income multifamily buildings into condominiums may be larger than for high-income buildings. To our knowledge, this issue has never been carefully researched but warrants further attention.

Exhibit 2-16
1999 Population Distribution for Families with Household Income Above $60,000
By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 13,155)

Location	Percent Of U.S. Population				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total[a]**
Single family detached	.1510	.2676	.1923	.2402	.1659
Single family attached	.0183	.0633	.0332	.0214	.0219
Multifamily	.0477	.1254	.1136	.0868	.0587
Mobile Home	.0012	.0000	.0000	.0012	.0011
Sub-Total for Location	.2182	.4564	.3392	.3500	.2476
MSA Urban suburb					
Single family detached	.5402	.3716	.4703	.4685	.5210
Single family attached	.0377	.0418	.0577	.0333	.0383
Multifamily	.0413	.0621	.1154	.0951	.0498
Mobile Home	.0076	.0060	.0000	.0071	.0071
Sub-Total for Location	.6268	.4815	.6434	.6040	.6164
Non-MSA and MSA-rural					
Single family detached	.1422	.0526	.0140	.0416	.1242
Single family attached	.0025	.0036	.0017	.0000	.0024
Multifamily	.0036	.0012	.0000	.0012	.0031
Mobile Home	.0068	.0048	.0017	.0036	.0062
Sub-Total for Location	.1551	.0621	.0175	.0464	.1360
All Locations					
Single family detached	.8334	.6918	.6766	.7503	.8113
Single family attached	.0584	.1087	.0927	.0547	.0626
Multifamily	.0926	.1888	.2290	.1831	.1117
Mobile Home	.0156	.0108	.0017	.0119	.0144
Total for All Locations	1.000	1.000	1.000	1.000	1.000
Percent of Population	.8195	.0636	.0435	.0639	1.000

[a] Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason

Exhibit 2-17
1999 Homeownership Rates for Families with Household Income Above $60,000
By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 13,155)

Location	Homeownership Rate				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total[a]**
Single family detached	.9379	.9241	.9454	.9158	.9345
Single family attached	.7716	.6792	.7368	.7222	.7500
Multifamily	.3716	.2667	.3231	.1918	.3329
Mobile Home	1.000	--	--	1.000	1.000
Average for Location	.8006	.7094	.7165	.7245	.7759
MSA Urban suburb					
Single family detached	.9646	.9421	.9554	.9137	.9599
Single family attached	.7709	.6571	.6969	.7143	.7544
Multifamily	.3348	.2308	.2424	.2375	.3049
Mobile Home	.9512	1.000	--	.8333	.9362
Average for Location	.9114	.8263	.8043	.7953	.8938
Non-MSA and MSA-rural					
Single family detached	.9583	.9318	.8750	.9429	.9547
Single family attached	.7407	.3333	1.000	--	.7097
Multifamily	.4103	.0000	--	.0000	.3902
Mobile Home	.9041	1.000	1.000	1.000	.9146
Average for Location	.9396	.8846	.9000	.9231	.9357
All Locations					
Single family detached	.9587	.9343	.9509	.9160	.9539
Single family attached	.7698	.6593	.7170	.7174	.7512
Multifamily	.3567	.2532	.2824	.2143	.3220
Mobile Home	.9345	1.000	1.000	.9000	.9316
Average for all Locations	.8916	.7766	.7762	.7765	.8703

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

Exhibit 2-18
1999 Population Distribution for Families with Household Income $30,000 to $60,000 By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 14,389)

Location	Percent of U.S. Population				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total**[a]
Single family detached	.1297	.2707	.1771	.2295	.1560
Single family attached	.0246	.0789	.0423	.0344	.0328
Multifamily	.0851	.2072	.2374	.2077	.1168
Mobile Home	.0029	.0020	.0060	.0014	.0028
Sub-Total for Location	.2423	.5588	.4628	.4730	.3077
MSA Urban suburb					
Single family detached	.3537	.2005	.2616	.2681	.3246
Single family attached	.0426	.0381	.0684	.0463	.0432
Multifamily	.0935	.1003	.1811	.1270	.1006
Mobile Home	.0287	.0074	.0060	.0204	.0247
Sub-Total for Location	.5185	.3463	.5171	.4618	.4930
Non-MSA and MSA-rural					
Single family detached	.1919	.0695	.0161	.0526	.1588
Single family attached	.0044	.0027	.0000	.0014	.0037
Multifamily	.0177	.0067	.0020	.0042	.0149
Mobile Home	.0253	.0160	.0020	.0070	.0219
Sub-Total for Location	.2393	.0949	.0201	.0653	.1993
All Locations					
Single family detached	.6753	.5408	.4547	.5501	.6393
Single family attached	.0715	.1197	.1107	.0821	.0791
Multifamily	.1963	.3142	.4205	.3389	.2323
Mobile Home	.0569	.0254	.0141	.0288	.0493
Total for all Locations	1.000	1.000	1.000	1.000	1.000
Percent of Population	.7493	.1040	.0345	.0990	1.000

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

Exhibit 2-19
1999 Homeownership Rates for Families with Household Income $30,000 to $60,000 By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 14,389)

Location	Homeownership Rate				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total[a]**
Single family detached	.8491	.8049	.7614	.7798	.8262
Single family attached	.5321	.6017	.6190	.2245	.5184
Multifamily	.1612	.1032	.1356	.1216	.1405
Mobile Home	.9355	1.000	.6667	1.000	.9250
Average for Location	.5762	.5167	.4261	.4510	.5347
MSA Urban suburb					
Single family detached	.9098	.8700	.8000	.7958	.8938
Single family attached	.5991	.4737	.4706	.3788	.5539
Multifamily	.1925	.1400	.0778	.0994	.1671
Mobile Home	.8803	.9091	.3333	.7931	.8704
Average for Location	.7533	.6158	.4981	.5623	.7145
Non-MSA and MSA-rural					
Single family detached	.8966	.8558	.8750	.7867	.8871
Single family attached	.4255	.0000	--	.0000	.3773
Multifamily	.1780	.0000	.0000	.0000	.1628
Mobile Home	.8791	.9167	1.000	.6000	.8730
Average for Location	.8329	.7817	.8000	.6989	.8218
All Locations					
Single family detached	.8944	.8356	.7876	.7883	.8756
Single family attached	.5654	.5475	.5273	.3077	.5312
Multifamily	.1776	.1128	.1100	.1118	.1535
Mobile Home	.8825	.9211	.5714	.7561	.8746
Average for all Locations	.7295	.5762	.4708	.5186	.6806

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

Exhibit 2-20
1999 Population Distribution for Families with Household Income Below $30,000
By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 18,222)

Location	Percent of U.S. Population				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total**[a]
Single family detached	.1054	.2106	.1080	.1395	.1284
Single family attached	.0246	.0901	.0620	.0601	.0421
Multifamily	.1234	.3063	.3880	.3323	.1898
Mobile Home	.0047	.0019	.0020	.0067	.0046
Sub-Total for Location	.2582	.6089	.5600	.5386	.3648
MSA Urban suburb					
Single family detached	.2553	.0976	.1660	.1561	.2106
Single family attached	.0323	.0313	.0640	.0417	.0342
Multifamily	.1154	.0967	.1760	.1498	.1183
Mobile Home	.0414	.0075	.0040	.0247	.0320
Sub-Total for Location	.4445	.2331	.4100	.3722	.3952
Non-MSA and MSA-rural					
Single family detached	.1984	.0885	.0160	.0511	.1558
Single family attached	.0076	.0075	.0000	.0027	.0067
Multifamily	.0480	.0313	.0140	.0184	.0408
Mobile Home	.0433	.0307	.0000	.0170	.0367
Sub-Total for Location	.2973	.1580	.0300	.0892	.2400
All Locations					
Single family detached	.5591	.3967	.2900	.3466	.4948
Single family attached	.0645	.1289	.1260	.1045	.0830
Multifamily	.2869	.4343	.5780	.5004	.3489
Mobile Home	.0895	.0400	.0060	.0484	.0733
Total for all Locations	1.000	1.000	1.000	1.000	1.000
Percent of Population	.6594	.1754	.0274	.1224	1.000

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

Exhibit 2-21
1999 Homeownership Rates for Families with Household Income Below $30,000
By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 18,222)

Location	Homeownership Rate				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total[a]**
Single family detached	.8278	.6672	.6296	.6109	.7443
Single family attached	.4899	.3403	.2581	.2090	.3703
Multifamily	.0944	.0521	.0670	.0472	.0694
Mobile Home	.7895	.1667	1.000	.5333	.6905
Average for Location	.4442	.3078	.2000	.2173	.3494
MSA Urban suburb					
Single family detached	.8924	.7179	.7229	.6667	.8533
Single family attached	.5000	.2100	.3125	.1290	.3868
Multifamily	.1665	.0388	.0682	.0359	.1215
Mobile Home	.8514	.7917	1.000	.6363	.8305
Average for Location	.6716	.3705	.3805	.3506	.5920
Non-MSA and MSA-rural					
Single family detached	.8565	.7279	.7500	.7456	.8327
Single family attached	.3956	.0833	--	.0000	.3115
Multifamily	.0589	.0000	.0000	.0488	.0497
Mobile Home	.8019	.8061	--	.7895	.7964
Average for Location	.7080	.5683	.4000	.5879	.6794
All Locations					
Single family detached	.8675	.6932	.6897	.6559	.8185
Single family attached	.4839	.2937	.2857	.1717	.3724
Multifamily	.1175	.0454	.0657	.0439	.0848
Mobile Home	.8242	.7734	1.000	.6759	.8046
Average for all Locations	.6237	.3636	.2800	.3000	.5245

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

Exhibit 2-22
1999 Population Distribution for All Families
By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 45,766)

Location	Percent Of U.S. Population				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total**[a]
Single family detached	.1278	.2355	.1606	.1868	.1478
Single family attached	.0226	.0830	.0452	.0447	.0332
Multifamily	.0868	.2521	.2403	.2469	.1291
Mobile Home	.0030	.0061	.0025	.0040	.0030
Sub-Total for Location	.2402	.5722	.4487	.4824	.3132
MSA Urban suburb					
Single family detached	.3784	.1669	.3072	.2500	.3357
Single family attached	.0373	.0347	.0631	.0416	.0382
Multifamily	.0846	.0924	.1555	.1323	.0931
Mobile Home	.0265	.0072	.0032	.0200	.0226
Sub-Total for Location	.5268	.3013	.5290	.4440	.4895
Non-MSA and MSA-rural					
Single family detached	.1783	.0780	.0153	.0498	.1477
Single family attached	.0049	.0056	.0006	.0178	.0045
Multifamily	.0240	.0200	.0051	.0107	.0219
Mobile Home	.0258	.0228	.0013	.0113	.0233
Sub-Total for Location	.2330	.1264	.0223	.0736	.1937
All Locations					
Single family detached	.6845	.4804	.4831	.4867	.6312
Single family attached	.0648	.1233	.1090	.0881	.0759
Multifamily	.1954	.3646	.4009	.3899	.2441
Mobile Home	.0553	.0317	.0070	.0353	.0489
Sub-Total for Location	1.000	1.000	1.000	1.000	1.000
Percent of Population	.7337	.1208	.0342	.0982	1.000

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

Exhibit 2-23
1999 Homeownership Rates for All Families
By Structure Type, Location and Race
(All values are based on un-weighted AHS data. Sample Size 45,766)

Location	Homeownership Rate				
MSA Central City	**White**	**Black**	**Asian**	**Hispanic**	**Total**[a]
Single family detached	.8765	.7542	.8135	.7500	.8328
Single family attached	.5778	.4466	.4930	.2587	.4875
Multifamily	.1643	.0796	.1326	.0766	.1240
Mobile Home	.8614	.4444	.7500	.6111	.7899
Average for Location	.5909	.4115	.4162	.3587	.5036
MSA Urban suburb					
Single family detached	.9307	.8429	.8734	.7972	.9132
Single family attached	.6241	.3698	.4949	.3048	.5523
Multifamily	.2021	.0881	.1189	.0824	.1653
Mobile Home	.8706	.8500	.6000	.7000	.8538
Average for Location	.7890	.5570	.6048	.5336	.7400
Non-MSA and MSA-rural					
Single family detached	.8964	.7796	.8333	.7902	.8806
Single family attached	.4606	.0968	1.000	.0000	.3883
Multifamily	.1041	.0000	.0000	.0417	.0880
Mobile Home	.8349	.8333	1.000	.7647	.8282
Average for Location	.7987	.6352	.6571	.6586	.7754
All Locations					
Single family detached	.9117	.7892	.8522	.7783	.8867
Single family attached	.5956	.4091	.4971	.2753	.5143
Multifamily	.1733	.0774	.1256	.0776	.1365
Mobile Home	.8534	.8171	.7273	.7107	.8376
Average for all Locations	.7437	.4836	.5214	.4584	.6730

[a]Total column reflects the combined influences of white, black, Asian, Hispanic, and Other race. Other race is a small fraction of the population and is not tabled out for that reason.

2.4.2 Mortgage Finance Constraints

Credit Barriers and Fair Lending Initiatives

In most transactions familiar to consumers, price is the single factor used by sellers to determine who can obtain their product: if a consumer is willing to pay the price, the item is purchased. This is a fundamental tenet upon which market economies are based. But in competitive loan markets, even if a consumer is willing to borrow at market interest rates, lenders may refuse to issue a loan if the borrower does not satisfy other "non-rate" terms of the loan contract such as downpayment and payment-to-income standards. The application of non-rate terms in loan markets has the potential to restrict access to owner-occupied housing even among individuals willing to borrow at market rates. To the extent that such constraints affect different groups of people to different degrees, credit barriers may contribute to homeownership gaps.

The use of non-rate terms in credit markets has been the subject of a number of theoretical studies (e.g., Jaffee and Russell (1976), Stiglitz and Weiss (1981), and Williamson (1986)). But as recently as the late 1980s, whether or not non-rate terms affected household behavior – such as the decision to own a home – was a source of debate. Riley (1987), for example, argued that lenders would likely offer higher interest rates to loan applicants posing greater default risk, and that such rate sorting would mitigate the extent to which non-rate terms in the loan contract restrict access to credit. Riley based his argument, in part, on the redlining model of Stiglitz and Weiss (1981), in which a market equilibrium with credit rationing and multiple loan rates can arise if lenders are able to group loan applicants on the basis of observable differences in credit risk. Although Riley's arguments may well apply to much of the commercial and industrial loan market, an increasing number of studies have found evidence that non-rate terms in the loan contract create barriers that reduce access to mortgage credit for some families and, in so doing, reduce homeownership rates.[41]

On the surface, it is natural to wonder why lenders would not simply set higher interest rates rather than turn customers away. But Stiglitz and Weiss (1981) clarify that three things happen when lenders set higher interest rates: one of which is good for lenders, but the other two are potentially costly. First, higher interest rates clearly increase the rate of return on a loan *provided* that the borrower pays the loan back in a timely manner. But with higher interest rates, borrowers with a strong predisposition to make timely loan payments will likely drop out of the pool of prospective loan applicants as they become concerned about their ability to pay the loan back. Borrowers more comfortable with the possibility of making late loan payments or even defaulting will remain. This adverse selection reduces the quality of the pool of prospective loan applicants. But with limited information, it may be difficult or even impossible for lenders to distinguish "good" from "bad" loan applicants.

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[41] Flavin (1981), Hall and Mishkin (1982), Hayashi (1985), Wilcox (1989), and Zeldes (1989), for example, find evidence that some implications of the life-cycle hypothesis that current consumption ought to reflect expected life-time income are violated for subsets of the population that are believed to face binding borrowing constraints. Similarly, Cox and Jappelli (1993), Perraudin and Sorenson (1992), and Duca and Rosenthal (1993, 1994a) find that non-rate terms in the loan contract affect both the level of debt held by households and housing tenure status for an important subset of the population. A number of studies have also characterized the extent to which the investment behavior of small firms differs from that of large firms (e.g., Calomiris and Hubbard (1990) and Fazzari, Hubbard, and Petersen (1988)).

In addition, with higher loan rates, higher expected capital gains must be earned to justify homeownership from an investment perspective. But asset market theory and related empirical studies provide compelling evidence that higher expected returns are accompanied by increased price volatility and risk. As a result, with high loan rates loan applicants have an incentive to invest in riskier housing knowing that their potential losses are truncated by their option to default. In this regard, higher interest rates contribute to borrower behavior that is costly to lenders, a phenomenon that is typically referred to as moral hazard.

Because of adverse selection and moral hazard, it is likely that as loan rates increase, at some point the increased return on loan payments made in a timely manner will be offset by higher overall rates of late payments and default. For these reasons, Stiglitz and Weiss (1981) argue that lenders may set loan rates below market clearing levels and use non-rate terms to ration the supply of credit in the face of excess demand for loanable funds.

But what if lenders have sufficient information to group loan applicants at least partially on the basis of observable differences in credit risk? For example, suppose that lenders are able to distinguish between those loan applicants with a history of problems in paying their credit card bills on time versus those that have a clean credit history. Stiglitz and Weiss (1981) suggest that in this case lenders will charge higher interest rates to the less credit worthy group, in effect, pricing the perceived difference in risk directly through the interest rate. Certainly, this is in keeping with common practice in the market for commercial and industrial loans where "low-risk" borrowers are offered the prime rate but small businesses pay higher rates.

At least for the mortgage market, however, Duca and Rosenthal (1994b) argue that Fair Lending Laws and the threat of costly litigation create strong incentives for a given lender to offer similar loan rates to observationally distinguishable borrowers. This would be especially true in cases where lenders felt that credit risk was correlated with politically sensitive characteristics such as race and ethnicity, sex, and age.[42] Under these conditions, one might expect a sorting equilibrium to emerge in which different lenders specialize in loan applicants of different credit risk. Then, although lenders specializing in a given risk classification would offer similar loan rates to all prospective applicants meeting those lenders' credit standards, the credit market as a whole would offer loan rates that differed across borrowers on the basis of default risk.

But other considerations may preclude such a sorting equilibrium. As an illustration, suppose that non-white loan applicants, on average, pose a higher degree of default risk than white applicants owing to differences in wealth, income, and credit history. If the sorting equilibrium above prevailed, some lenders would offer lower interest rates to a largely white pool of borrowers while other lenders would offer higher interest rates to a disproportionately non-white pool of borrowers. The political and legal obstacles to such differences in the racial and ethnic composition of borrowers across lenders could be large (Rehm (1992a, 1992b)). For example, in response to bad press and community

[42] For example, suppose that racial and ethnic discrimination in labor markets increases the probability that non-whites would be laid off relative to that of comparable white workers. Then lenders might view non-white loan applicants as more risky. Similarly, if young households and immigrants have limited credit histories then lenders would view such loan applicants as more risky than older households with established and favorable credit histories. Nevertheless, it is easy to imagine that lenders would be subject to frequent litigation if they posted higher interest rates for either non-white, immigrant, or younger borrowers.

pressure in the early 1990s, Bank of America, Chemical Bank and NationsBank announced plans to increase lending to non-whites in the midst of gaining approval for mergers with other banks. Moreover, Bank of America's merger was approved by the Federal Reserve Board conditional on meeting lending goals in poor neighborhoods (Thomas (1992), pg. A6).[43]

To analyze how lenders might respond to these conditions, Duca and Rosenthal (1994b) assume that credit risk increases with loan size, *ceteris paribus*, since the lenders' potential losses are larger with larger loans. In addition, suppose that it is relatively difficult for regulators to examine the manner in which lenders vary loan qualification standards across borrowers, particularly in comparison to the manner in which lenders vary loan rates across borrowers. Then lenders are likely to increase the extent to which non-rate terms are used to impose binding loan limits on high-risk borrowers.[44]

Duca and Rosenthal (1994b) provide indirect evidence for these arguments. Using the 1983 Survey of Consumer Finances they find that the only variable that significantly explains variation in the loan rate offered to borrowers is the lender's cost of funds. Demographic, financial, and, most importantly, credit history do not affect the offered loan rate, on average. This finding is consistent with the idea that lenders are reticent to charge different interest rates to loan applicants with observationally different risk attributes. It follows, therefore, that lenders would likely seek alternative ways to implicitly price the perceived differences in risk across loan applicants, such as the imposition of different underwriting standards.

Statistical Discrimination Versus a "Taste" for Discrimination

The discussion above is predicated on the idea that lenders treat observationally distinguishable borrowers differently in order to earn higher expected returns. In that regard, the above discussion satisfies definitions of "statistical" discrimination. Statistical discrimination occurs when lenders treat loan applicants less favorably on the basis of observable demographic attributes such as race and ethnicity or gender in situations where such traits are potential predictors of higher expected rates of late payments and default. As noted by Ladd (1998), in the mortgage and consumer loan market, statistical discrimination is illegal even though the expected return on pools of loans issued to two groups that differ on the basis of race and ethnicity or gender may differ.[45]

A very different form of discrimination arises when lenders have a "taste" for discrimination. In this instance, lenders forgo profit-making opportunities in order to avoid doing business with a particular group of individuals, for example, minority loan applicants. This form of discrimination is also certainly illegal and has also been the subject of study. Becker (1971), for example, argued forcefully over 30 years ago that in a competitive market entrepreneurs with a taste for discrimination would be competed out of business. This occurs because individuals that do not harbor discriminatory tastes

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[43] For a discussion of related issues in the subprime mortgage market see Bunce, Gruenstein, Herbert, and Scheessele (2000).

[44] A more complete presentation of the Stiglitz-Weiss model as modified by Duca and Rosenthal (1994b) is presented in Appendix B to this chapter.

[45] In contrast, in the commercial and industrial loan market, different types of prospective borrowers are typically charged different interest rates and such activity is legal provided that the loan rates are determined based on the characteristics of the business and not the individuals per se. For example, General Motors would typically be charged a lower rate than a small business because the likelihood that GM would file for bankruptcy and default is much lower.

are able to earn higher expected rates of return while operating at lower cost relative to discriminatory establishments that forgo profitable transactions.

Evidence for Statistical Discrimination in Mortgage Lending

A large literature has sought to provide empirical evidence on the prevalence of statistical discrimination in mortgage lending. Much of that literature is discussed in detail in a variety of recent review papers (e.g., Ladd (1998), Yinger (1998)), and most thoroughly, in Ross and Yinger (2003). The most prominent approach used by previous studies in this area is to examine the accept-reject decisions on mortgage loan applications as a function of the characteristics of the loan applicants, including race and ethnicity. Munnell et al. (1996) is the most influential and well known of these studies. Using HMDA data augmented with additional information on the attributes of the loan applicants, they found that after controlling for loan applicant characteristics, black mortgage applicants in Boston in the late 1980s were 8 percentage points more likely to have their loan applications rejected relative to comparable white loan applicants.

The Munnell et al. (1996) study has been subject to numerous critiques. In response, the authors made their data available to other researchers and subsequent exhaustive examination confirmed the essential features of their results (see Carr and Megbolugbe (1993) or Ladd (1998), for example). The broad consensus emerging from these efforts is that discrimination has been present in mortgage lending at least through the 1980s and is likely still present today (Yinger (1998)).

A very different approach to examining evidence of discrimination in mortgage lending has been taken by Berkovec et al. (1998). This study found evidence that African-American mortgage default rates were higher than white default rates after controlling for a variety of household attributes. Using Becker-type arguments, the authors argued that this result was consistent with an environment in which lenders apply *less* restrictive credit standards to blacks and more restrictive standards to whites. In addition, the authors also took care to note that omitted variables could potentially account for their results. In fact, a study by Cotterman (2002) that replicates Berkovic et al.'s analysis but incorporates credit score measures finds that the inclusion of this variable generally renders the race effect statistically insignificant. Nevertheless, controversy stemming from the Berkovec et al. (1998) work became sufficiently energetic that an entire issue of the HUD journal *CityScape* (1997) was devoted to comments on the work and responses by Berkovec and his co-authors. At the core of the debate were concerns about how omitted variables possibly would confound interpretation of the outcome from default studies. Ladd (1998) summarizes the central issues in this debate well when she writes…

> "… Working in one direction, the presence of the unobservable factors disproportionately increases the likelihood of blacks defaulting on any approved loan. Working in the other direction, taste-based or profit-motivated discrimination decreases the likelihood of default for blacks because fewer loans are approved to that group."

In other words, omitted factors related to discrimination could serve to either increase or decrease African-American default rates relative to those of comparable white borrowers. For that reason, Ladd (1998) concludes that default studies are hampered by identification problems that are less severe in the context of accept-reject studies of mortgage applications such as Munnell et al. (1996).

However, in a recent follow-up paper, Deng and Gabriel (2002) estimate a competing risk model of mortgage default and mortgage prepayment. Once more they find that African-American default rates are high relative to comparable white borrowers, but they also find strong evidence that African-American refinance rates are low. The interpretation offered by the authors is that banks may well be happy to offer credit to potentially risky black loan applicants given evidence that blacks are much less likely than white borrowers to exercise valuable prepayment options.

Household Wealth and Downpayment Constraints

A household's wealth plays multiple roles when considering the investment demand for housing. Wealth affects consumption demand for shelter (housing) and also the family's willingness to take on financial risk. In addition, wealth is needed to overcome mortgage lender-imposed downpayment constraints arising from equilibrium and discriminatory credit rationing. In this section we discuss the literature on recent trends in downpayments and the relationship of wealth to the required downpayment on owner-occupied housing. This is followed by a discussion of differences in wealth comparing black and white households.

Mortgage lenders have traditionally required the buyer to contribute to the purchase of a home. The purpose of the downpayment is to have the buyer share the risk of price fluctuations, to ensure that buyers have an incentive to maintain the property and to avoid the cost of a foreclosure. Masnick (2001) reports that loan-to-value ratios (LTVs) were relatively low in the early part of the 20th century, typically 50 percent in the late 1920s. In the 1930s, government-backed mortgages were developed and Fannie Mae came into existence. The percentage of house value required for a downpayment began a decline that has continued to the present day. In the 1970s, the standard downpayment was expected to be 20 percent of the purchase price, with selected exceptions. Throughout the 1990s, the minimal required downpayment continued to fall. Freddie Mac introduced the Affordable Gold programs in 1992, consisting of a 5 percent downpayment program and a "3/2" program under which the required downpayment from the borrower's funds is 3 percent with 2 percent in the form of gifts, sweat equity, grants or unsecured loans from government or nonprofit agencies. In the 3/2 program the borrower's income cannot exceed 100 percent of the area's median income. The 5 percent downpayment program is targeted at minority borrowers who are wealth constrained. The 3/2 program is targeted at severely wealth-constrained households. Following the introduction of these programs, Freddie Mac introduced the Affordable Gold 97 program, which further reduced the downpayment to 3 percent. Innovation in this area continues, the apparent goal being to reduce the required downpayment to zero. In 1997 a small program was started, the 103 Combo Loan, that combines a 97 percent loan with a 15-year second mortgage at a 10 percent rate to cover financing costs. Eligibility is restricted to households with income less than 125 percent of the county's median income. In 1998, the Alt 97 program was started, generally similar to Affordable Gold 97, but now extended to manufactured homes and reducing the mortgage insurance cost of the loan. Fannie Mae has a comparable set of low downpayment programs.

These low downpayment loans are a small but growing segment of the market. According to data from the Federal Housing Finance Board, mortgages with loan-to-value ratios of 90 percent or more made up less than 10 percent of the market during the period 1989-1991, but by 2001 this share had climbed to 21 percent. Information on loan purchases by Fannie Mae and Freddie Mac show a similar trend, with the share of loans purchased by these agencies with loan-to-value ratios of 95

percent or more increasing from 2.5 percent in 1997 to 6.5 percent in 2002.[46] The implication of these trends is that the wealth needed to become a homeowner is decreasing over time. This particular barrier to ownership is being lowered, likely impacting the racial and ethnic homeownership gaps. The reason for the impact is that there are substantial differences in household wealth by race and ethnicity as discussed below.

To become a homeowner, wealth is needed at the time of purchase for the closing costs and the amount of the downpayment. Formal models of homeownership that include the downpayment constraint include Artle and Variaya (1978) and Brueckner (1986). The empirical literature about the relationship of household wealth and homeownership presents convincing evidence that the lack of wealth reduces the likelihood of attaining homeownership even if it is rational to make the investment (Linneman and Wachter 1989; Zorn 1989; Haurin, Hendershott, and Wachter 1997). Engelhardt (1994) uses a multi-period model to show that a renting household (or one living with parents or friends) may adjust its behavior to increase wealth accumulation in order to secure the tax advantage of homeownership. Changed household behaviors may include increased savings and labor supply or decreased consumption. Additional behavioral changes are reviewed in Haurin and Dietz (2002).

There is substantial supportive empirical evidence that households change their behaviors while attempting to attain homeownership. Engelhardt (1996) finds that food consumption falls while a household is saving for the downpayment. Yoshikawa and Ohtake (1989) use Japanese data and find that renters in areas with low land prices are more likely to save to become homeowners, but those in high cost areas are more likely to give up trying to become an owner. Engelhardt (1994) finds some evidence that high house prices discourage renters from participating in a Canadian tax-advantaged plan designed to encourage households to save for their downpayments. Haurin, Hendershott, and Wachter (2001) find that as constant-quality house prices rise, renters' savings initially rise, but fall when house prices become very high. The reason for the reversal is that when house prices rise to high levels, renters' expectations of becoming homeowners fall.

The above studies could be relevant for the study of gaps in homeownership between white and minority households. To the extent that minorities tend to disproportionately reside in the largest central cities relative to white households, they are likely to pay a higher price for the same quality housing. This occurs because of the premium associated with proximity to the central business district and because house prices are positively correlated with metro area population. These higher prices make it more difficult to accumulate the needed downpayment and thus discourage renters from becoming homeowners.

In general, the wealth of black and Hispanic households is lower than that for whites. Altonji and Doraszelski (2001) review the extensive literature about wealth differences by race, concluding that this literature argues that income and demographic factors explain some, but far from all, of the observed differences in wealth. They analyze data from the Panel Study of Income Dynamics and find that among white households differences in wealth are fully explained by differences in income and demographic variables. However, among blacks, wealth differences are poorly explained by income and demographic variables, as are differences in wealth *between* white and black households.

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[46] For a thorough discussion of trends in loan to value ratios see HUD's proposed housing goals for the GSEs at 24 CFR Part 81 published in the Federal Register, Volume 69, Number 85 (May 3, 2004).

For these latter comparisons, they test for the possibility that observed differences in wealth are due to intergenerational transfers of wealth, but they reject this hypothesis. This leads them to speculate that differences in savings rates and/or the rate of return on assets must account for observed differences in wealth levels among blacks and between white and black households. A limitation of the Altonji and Doraszelski study is that they include homeowners and their home equity in their sample. Because wealth is itself influenced by homeownership status, this complicates interpretation of their findings. In particular, it is of interest for the purposes of this review to focus on wealth differences among renters, since it is this group that ultimately is the focus of policy concerns regarding gaps in homeownership rates.

Haurin, Hendershott, and Wachter (1996) use data from the National Longitudinal Survey of Youth-1979 and report average wealth levels for young adults ages 20 to 27 in 1985 to 1990 by race and ethnicity. These estimates are displayed in Exhibit 2-24. Because young adults are more likely to be renters, this sample gets closer to the population of primary interest. Generally, black households' wealth is one-third of that of whites while Hispanics' wealth is roughly 50 percent to 75 percent of that for white households.

Exhibit 2-24
Mean Real Wealth of Renters by Race/Ethnicity and Marital Status for 1985-90 (Dollars)

Year	Black-Married	Black-Single	Hispanic-Married	Hispanic-Single	White-Married	White-Single
1985	5,354	1,787	8,732	3,373	16,448	5,880
1986	4,673	2,331	10,708	3,990	16,934	5,595
1987	9,418	3,027	11,763	7,964	22,320	7,510
1988	10,059	2,658	15,562	6,269	25,630	9,563
1989	10,231	2,658	15,596	7,150	30,125	10,354
1990	12,848	2,814	21,189	5,882	34,558	11,881

Source: Haurin, Hendershott, and Wachter (1996) based on the National Longitudinal Survey of Youth-1979.

Similarly, Lusardi, Cossa, and Krupka (2000) use data from the NLSY-1997 and find that 50 percent of black and Hispanic households in the age range of 30-45 report no financial assets, whereas the comparable value for white households is just 25 percent. This adds to the body of evidence that black and Hispanic renters have lower wealth than white households.

Finally, in Exhibit 2-25 we present summary measures of wealth based on the 1998 Survey of Consumer Finances (SCF) data weighted to be representative of the United States. Note that values are provided in 1998 dollars and are reported for three points in the wealth distribution for a given group of households: the 25th percentile, the 50th percentile, and the 75th percentile. Observe also that these measures are reported separately for all households, homeowners, and renters, and for each of these categories, for white, black, Hispanic, other races/ethnicities, and all households combined. In reviewing the measures in Exhibit 2-25 several stark conclusions emerge. Most important, among black and Hispanic renters, the level of wealth at the 50th percentile is just $1,523 and $2,556,

respectively.[47] In contrast, among white renters the 50th percentile level of wealth is $9,908. The extremely low levels of wealth among the bottom half of the black and Hispanic renters underscores the challenges faced by policy makers and business leaders seeking to elevate minority homeownership rates – a very large share of black and Hispanic renters have so little wealth that effectively the only type of mortgage that would permit such families to become homeowners is a zero downpayment loan. Of course, even to the extent that such loans become available, the discussions earlier in this chapter provide a multitude of reasons for why such families might rationally prefer to rent.

Also apparent in the exhibit is that white renters at the 50th percentile have a level of wealth roughly comparable to that of black and Hispanic renters at the 75th percentile – approximately $10,000. Moreover, white renters at the 75th percentile have just under $66,000 in wealth, more than enough for many of these families to seriously contemplate homeownership.

Exhibit 2-25
Net Worth[a] of Homeowners and Renters in 1998 (Dollars)

Panel A: All Households

	White	Black	Hispanic	Other	Total
25th percentile	32,639	230	1,172	7,395	16,615
50th percentile	151,364	11,367	12,294	61,878	116,074
75th percentile	400,846	87,099	87,499	329,812	351,756

Panel B: Homeowners

	White	Black	Hispanic	Other	Total
25th percentile	80,220	41,959	35,455	68,216	73,738
50th percentile	221,521	119,592	92,484	221,804	207,115
75 percentile	489,420	265,096	236,270	483,204	465,683

Panel C: Renters

	White	Black	Hispanic	Other	Total
25th percentile	607	0	0	1,379	47
50th percentile	9,909	1,524	2,556	9,617	5,955
75 percentile	65,932	10,754	8,478	33,127	36,874

Source: Authors' tabulations of the 1998 Survey of Consumer Finance (SCF), weighted to be representative of U.S. population.

[a] Net Worth is defined as in the program in the 1998 SCF codebook titled, "SAS Code to Define Net Worth: One Possible Definition."

[47] Observe also, that among black and Hispanic renters the level of wealth at the 25th percentile is zero. Close inspection of the data found that for both African-American and Hispanic renters, households from roughly the 18th to the 33rd percentiles of the wealth distribution have zero reported wealth. The possibility exists, of course, that this pattern reflects reporting errors in the data – possibly some of the zero wealth households have small assets that they neglected to report (e.g. an old car). Even if this is the case, however, the overriding conclusion from the table that a large share of minority renters have very little wealth appears robust.

Viewing the patterns in Exhibit 2-25 in conjunction with various other factors discussed in this chapter, it is clear that there are clear and compelling factors that contribute to gaps in homeownership rates between white and black households. We will return to these issues in the chapters to follow.

2.5 Chapter Summary

As noted at the outset of this chapter, by the end of 2000, white homeownership rates were just above 70 percent while African-American and Hispanic homeownership rates remained below 50 percent and Asian rates neared 54 percent. At the same time households with very low income had homeownership rates that were 36 percentage points below the rates for high-income households. This chapter has reviewed a variety of conceptual arguments and stylized facts that help us understand what might be driving these and other very substantial gaps in homeownership rates. As a starting point, we showed that by controlling for a variety of household attributes, white-minority racial and ethnic gaps in homeownership rates were reduced from roughly 25 percentage points to 8 percentage points based on data that are representative of the United States in 1998. Why is it that household characteristics other than race and ethnicity play such an important role in determining homeownership, and how should these facts be interpreted?

This chapter offers several answers to this question. First, we emphasize that not all individuals form their own households. But homeownership *rates* are by definition equal to the number of owner-occupying households in the population divided by the total number of households present. Thus, the propensity to form a household could contribute to racial and ethnic (and income related) gaps in homeownership rates, but in a complicated manner. For example, we know that black marital rates are far lower than white marital rates. That difference serves to increase the number of black households relative to white households. But because single-headed households are typically more likely to rent, lower black marriage rates likely have a less than proportionate impact on the number of black homeowning families. Because black marital status likely increases the numerator in the homeownership rate calculation by less than the denominator, the influence of marital status on household formation likely lowers black homeownership rates relative to those of white households. But in contrast, the opposite argument exists with regard to the effect of very high incarceration rates among young black males. These are individuals who would likely rent but are otherwise not counted by Census among households used in calculating homeownership rates. Thus, higher than average incarceration rates of young black males likely has the effect of raising reported black homeownership rates. More generally, our knowledge of the influence of household formation on homeownership gaps is in its infancy and requires further study.

But, once a household is formed, what drives the decision to own versus rent a home? This question has been studied extensively in the literature. As a broad characterization, two conditions must both be met in order for a household to become an owner-occupier. The family must *want* to own their home given their current financial and social status, and the family must be *able* to own a home.

Consider first the demand side. Because housing is a durable asset, demand for homeownership is sensitive to investment considerations and, therefore, is subject to all of the considerations and factors that influence a family's preferred portfolio. In that regard, families sensitive to financial risk such as low-income households are less likely to want to own a home, everything else equal. In addition, the

return on homeownership is especially sensitive to household mobility given the very high transactions costs of selling an owner-occupied home relative to moving from a rental unit. Evidence reported in this chapter suggests that among renters, lower-income families are more mobile. This further implies that lower-income families will be less likely to want to own their homes. Additionally, the Federal tax code provides generous subsidies to homeowners by failing to tax imputed rent and allowing deductions for mortgage interest and property tax payments. But the benefits from such favorable tax treatment accrue disproportionately to higher-income households with higher marginal income tax rates and a greater propensity to itemize. The tax code too, therefore, contributes to higher homeownership rates among high-income households relative to lower-income families. Because minorities are typically of lower income relative to white households, these considerations contribute to racial and ethnic gaps in homeownership rates as well.

On the other hand, credible arguments and evidence in the literature suggests that constraints beyond the control of individual families may restrict access to homeownership for some households. Such "supply" constraints could arise in two different but related markets. First, in the housing market, a small number of studies have suggested that single-family housing is more conducive to homeownership. This could arise because of preferences for such housing among prospective homebuyers – single-family housing and homeownership could be viewed by households as complementary goods. In addition, single-family housing does not typically entail common property issues. In contrast, in a multifamily building management of common space and controls for noise and the like create administrative costs when organizing the units into condos suitable for homeownership. For these reasons, access to single-family housing may foster homeownership. Indeed, evidence presented in this chapter shows that among middle- and higher-income households racial and ethnic gaps in homeownership largely disappear after controlling for central city status and the type of structure in which the family resides (e.g. single family versus multifamily). On the other hand, minorities of all income levels are more likely to live in high density central city housing relative to comparable white households causing minority homeownership rates to lag behind those of the white population. To the extent that discrimination and related segregation in the housing market restricts minority access to single family neighborhoods, then segregation contributes to racial and ethnic gaps in homeownership. By the same token, although the evidence presented in this chapter is suggestive of such effects it is not conclusive and further study of this issue is needed.

Restricted access to mortgage credit is a second explanation for why some families ready to become homeowners remain renters. As discussed earlier in this chapter, lenders may restrict access to credit for reasons that are motivated by considerations that do not directly depend on the loan applicant's race or ethnicity. Instead, the nature of the loan contract exposes lenders to default and late-payment risk. Under certain market conditions, previous studies have shown that lenders may respond by offering credit at below market clearing rates and then using credit scores and the like to ration out loanable funds to the lowest risk borrowers. Because minorities often are of lower income and wealth, and have less secure employment, they may be subject to statistical discrimination in loan markets to the extent that lenders use race and ethnicity as predictors of hard-to-observe risk attributes. Such behavior, of course, is illegal in the mortgage market. Nevertheless, a number of studies have provided evidence of discrimination in mortgage markets, most prominently, a study of the Boston mortgage market in the 1980s conducted by members of the Boston Federal Reserve Bank (Munnell et al, (1996)). Regardless of whether the underlying discriminatory behavior is based on

statistical discrimination or outright bigotry, it undoubtedly serves to reduce minority homeownership rates.

Partly in response to concerns about minority access to mortgage credit, beginning in the early 1990s a variety of very low-downpayment mortgage products became available through conventional lenders. On the surface, these loan products offer the possibility of raising minority homeownership rates and reducing white-minority gaps in homeownership. On a qualitative basis this must be the case. But the degree to which such innovative loan products will affect minority access to homeownership is uncertain. Of particular concern is the very low level of wealth among minority renters. Evidence reported in this chapter indicates that half of black and Hispanic renters in 1998 had close to zero net wealth. For these families, even very low-downpayment mortgages will likely not be sufficient to make homeownership financially feasible. Moreover, such families may rationally prefer to rent rather than subject themselves to the financial risks that go along with homeownership. But, on a more optimistic note, black and Hispanic renters in the top quartile of their wealth distributions have $10,000 or more in net wealth. For these families homeownership may be attainable.

Chapter Three
Homeownership Differences by Race and Income: Size, Trends and Contributing Factors

3.1 Introduction

This chapter presents descriptive information on the magnitude of homeownership differences by race and income and how these differences have varied over time and by key demographic characteristics. While there is a variety of literature touching upon these trends, much of the information presented in this chapter was undertaken specifically for this study in order to provide consistent and comprehensive measures of homeownership trends. There were three principal data sources used in this analysis. The Current Population Survey (CPS) provides annual estimates of homeownership that allow for identification of key turning points in homeownership rates and analysis of the factors associated with these recent trends. We also analyze data from the decennial census to provide insights into longer-run trends in homeownership and to provide more detail on the homeownership experience of immigrants.[48] Finally, the American Housing Survey (AHS) is used to provide information on trends in homeownership across geographic locations and on the characteristics of first-time homebuyers and how this group has changed over time. Unless otherwise noted, the racial groupings used are non-Hispanic whites, non-Hispanic blacks, and non-Hispanic Asians, and Hispanics of any race.

The first section of the chapter examines trends in homeownership by race and income. The second section then shows how several key demographic determinants of housing demand—age, household type, and education—are related to homeownership levels generally, to differences in homeownership by race and income, and how changes in these factors contributed to the rise in homeownership since the early 1990s. The third section then discusses geographic variations in homeownership rates and how differences in the geographic location of households by race and ethnicity contribute to homeownership gaps. The fourth section addresses issues associated with the attainment of homeownership by immigrants, while the fifth section examines the characteristics of first-time buyers and how this group has changed over time. We then summarize available information on household projections and the likely impact of demographic trends on homeownership rates over the next two decades. The chapter concludes with a summary of findings.

[48] Tabulations of the decennial census micro data are based on the Integrated Public Use Microdata Series (IPUMS) developed by Ruggles and Sobek (1997) of the University of Minnesota (see www.ipums.org for complete information on this data series).

3.2 Homeownership by Race and Income

3.2.1 Homeownership by Race

In order to place recent homeownership trends in context, it is helpful first to examine changes in homeownership over a longer time period. Exhibit 3-1 presents homeownership rates by race for ten-year intervals beginning in 1940.[49] Over the two decades following 1940 the nation saw an unprecedented rise in homeownership rates, with the overall homeownership rate rising by more than 18 percentage points, from 43.6 percent to 61.9 percent. All racial groups contributed to this rise as the white homeownership rate rose by 17.7 points (from 45.6 percent to 64.3 percent), the black rate rose by 15.3 points (from 22.8 percent to 38.1 percent), and the Asian rate rose by 27.8 points (from 16.3 percent to 44.1 percent).[50] Homeownership rates generally continued to rise between 1960 and1980, but at a more modest pace. During this period gains among minorities generally outpaced gains among whites. The white rate increased by 4.2 points, while the black rate rose by 7.2 points and the Asian rate rose by 7.9 points.

The 1980s were notable as a period when the post-War boom in homeownership came to an end. Over the decade the overall homeownership rate actually declined by 0.2 points. This overall decline was composed of a small rise in the white homeownership rate of 0.5 points coupled with declines among all minority groups: 1.4 points among blacks, 1.0 points among Hispanics, and 0.1 points among Asians. The gains made in homeownership during the 1990s seemed all the more dramatic against this recent history of stagnating and declining homeownership rates. Between 1990 and 2000 the overall homeownership rate increased by 2.0 percentage points, including increases of 3.3 points for whites, 2.4 points for blacks, 2.2 points for Asians, and 3.0 points for Hispanics.

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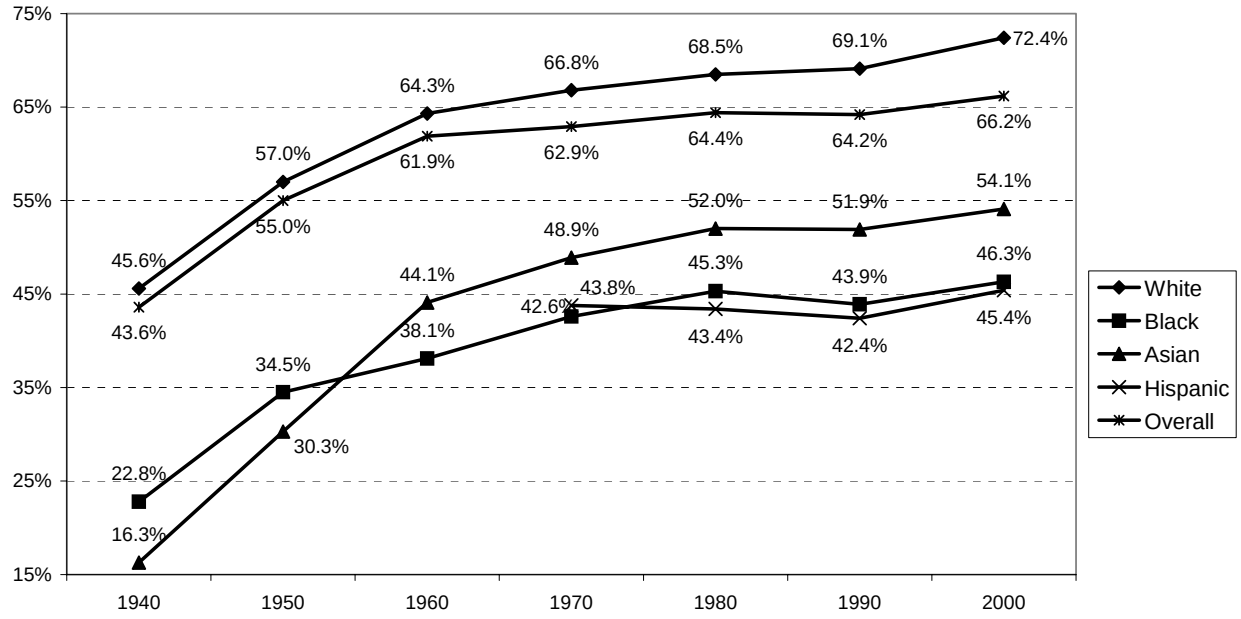
[49] One challenge of presenting data on homeownership trends is that there are several different sources of data on homeownership rates, which present some non-trivial differences in homeownership levels and trends. Most notably, while homeownership rates captured by the decennial censuses of 1990 and 2000 indicate that the difference between white and minority rates grew over this ten-year period, data from the CPS indicates these gaps generally narrowed over the same time period. For a discussion of issues related to differences between the decennial census and CPS population and household counts see Carliner (2001). Masnick, et al (1999) also provides an interesting assessment of changes in CPS methodology on homeownership estimates. Most of the information presented in this Chapter will be derived from the CPS as this data is most commonly used to track on-going changes in homeownership and allows us to examine the key period from 1993 to 2001 when homeownership rates were rising most rapidly. However, in order to present longer-run trends in homeownership, the data shown in Exhibit 3-1 is from the decennial censuses from 1940 through 2000.

[50] Prior to 1970 the census did not gather information on Hispanic origin. Rather, households with a Spanish surname were identified. Since this approach is not consistent with the questions regarding Hispanic origin, rates for Hispanics are not available prior to 1970. Since there were fairly few households with Spanish surname in 1960 and the homeownership rate of this group was fairly high (55.0 percent), there is little bias in the trends for whites and blacks between 1960 and 1970 from not excluding these households.

Exhibit 3-1
Trends in Homeownership Rates by Race and Ethnicity 1940-2000



Notes: White and Black rates for 1970 through 2000 exclude Hispanics. "Asian" rate for 1950 is proxied by non-White, non-Negro urban households, which comprise a large majority of the Asian population. (The comparable rate for 1940 was 15.4 percent compared to the 16.3 percent actual rate.)

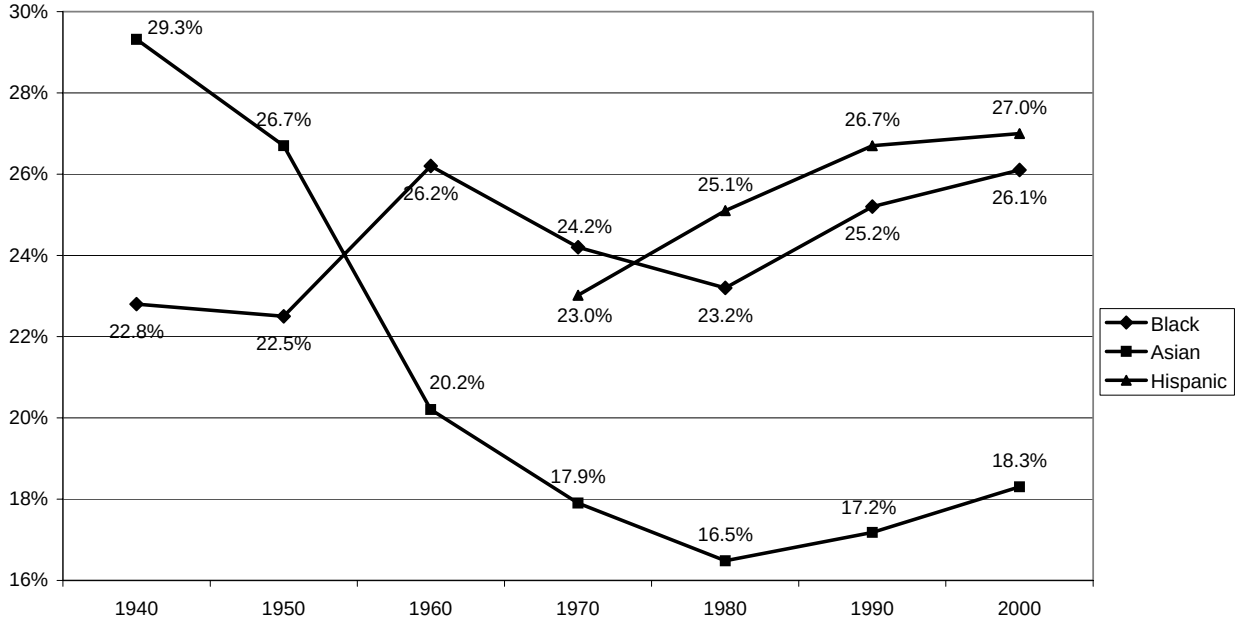
Sources: 1940-1990 from IPUMS microdata for Decennial Censuses 1940-1990. 2000 from U.S. Census Bureau, 2000 Census Summary File 1.

One notable aspect of these long run trends in homeownership is the general similarity across racial and ethnic groups. All groups experienced sharp increases in homeownership between 1940 and 1960, followed by moderate increases between 1960 and 1980, stagnating or declining rates during the 1980s, and then rising rates during the 1990s. This similarity illustrates that homeownership trends among all groups are largely driven by the same broad economic, demographic, and public policy factors. The post-war period of steady economic prosperity, more ready availability of mortgage financing, and great expansion of the supply of affordable housing in suburban areas newly served by an expanded transportation system all helped fuel the homeownership boom of this era for all groups. Nonetheless, there are some important differences in the demographic and economic characteristics of the different groups with implications for homeownership rates, which will be explored in subsequent sections.

One implication of the similarity in broad homeownership trends among racial and ethnic groups is that while there have been large increases in homeownership rates for all minority groups, the white-minority homeownership gaps have remained stubbornly high. Exhibit 3-2 illustrates trends in the homeownership gap relative to whites for each racial and ethnic group. While black rates rose sharply in the post-War period, white rates rose even faster. As a result, the gap between white and black homeownership rates rose by 4.1 percentage points during the 1950s, reaching 26.2 percentage points. While the white-black gap narrowed by 3.0 percentage points between 1960 and 1980, the decline in black homeownership during the 1980s pushed the gap back up to 25.2 percentage points. Despite the gains in black homeownership during the 1990s, data from the decennial census find that

the gap between white and black ownership rates increased by 0.9 percentage points to 26.1 points. As will be discussed more below, other data sources do show that white-black gaps improved during the 1990s. But regardless of the data source used, it is true that after the gains of the 1990s the white-black homeownership gap was near the highest levels of the past 60 years.

Exhibit 3-2
Trends in Homeownership Gaps by Race and Ethnicity 1940-2000



Notes: White and Black rates for 1970 through 2000 exclude Hispanics. "Asian" rate for 1950 is proxied by non-White, non-Negro urban households, which comprise a large majority of the Asian population. (The comparable rate for 1940 was 15.4 percent compared to the 16.3 percent actual rate.)

Sources: Authors' tabulations based on IPUMS microdata for Decennial Censuses 1940-1990 and 2000 Census Summary File 1.

The white-Hispanic homeownership gap has also generally increased over the last few decades, rising from 23.0 percentage points in 1970 to 27.0 points in 2000. A significant factor in this widening gap is the rapid rise in Hispanic immigration, which has served to depress overall Hispanic homeownership rates. In 1980, immigrants accounted for 38 percent of Hispanic households. By 1990, this share had increased to 45 percent. Since the ownership rate among Hispanic immigrants is about 10 percentage points less than the rate among native-born Hispanics, this rising share of immigrants serves to depress Hispanic ownership rates.[51] (Section 3.5 below discusses issues related to homeownership among immigrants in more detail.)

The greatest decrease in the homeownership gap has occurred among Asians. The white-Asian gap dropped from 29.3 percentage points in 1940 to 16.5 percentage points in 1980. Since 1980, however, the white-Asian gap has increased by 2.8 percentage points to 18.3 percentage points. As with Hispanics, this rising gap is in part attributable to the growth in the Asian immigrant population.

[51] Data on the share of immigrants that are Hispanic and Hispanic homeownership rates by immigrant status are based on the authors' tabulations of the decennial census for 1980 and 1990.

In 1980, immigrants headed 66 percent of Asian households. By 1990 this share had risen to 76 percent. Since Asian immigrants have homeownership rates that were about 10 percentage points lower than non-immigrants in 1990, this rising share of immigrants has dampened gains in Asian homeownership rates.

While data from the decennial census provide a long-run context in which to evaluate current trends, the long time periods between censuses masks some significant inter-decadal trends in homeownership rates. Exhibit 3-3 presents data on trends in homeownership by race and ethnicity since 1983 as measured by the CPS.[52] Before turning to an analysis of this data, however, it is important to note that there are significant differences in homeownership trends between those found by the decennial censuses of 1990 and 2000 and those derived from the CPS. Overall, the CPS estimates show a sharper rise in homeownership during the 1990s than the decennial censuses. As shown in Exhibit 3-1, according to the decennial censuses, the overall homeownership rate rose 2.0 percentage points during the 1990s. According to the CPS, the rise was 3.3 percentage points. More importantly, the CPS shows sharper increases in homeownership among minorities compared to whites. As a result, the CPS estimates indicate that white-black and white-Hispanics gaps declined during the 1990s while decennial census data indicate that these gaps actually increased. One explanation for the differences between these data is that the CPS did not accurately reflect the growth in immigrant households over the decade. Carliner (2001) argues that the Census Bureau underestimated household growth by an average of 200,000 households per year, largely as a result of underestimating the annual net inflow of immigrants during the 1990s. This underestimate of immigrants was reflected in the CPS as sample weights used to produce estimates of the overall U.S. population, which in turn are derived from external estimates of the size and characteristics of the total population. Carliner argues that the higher homeownership rate estimated by the CPS reflects the fact that the CPS underestimated the younger and largely immigrant population who are more likely to be renters.

Issues with the decennial census may also contribute to these differences in homeownership trends. The census is known to suffer from an undercount of some segments of the population, particularly low-income and minority households who are more likely to be renters. Simmons (2001) notes that the undercount of minorities and renter households is thought to have declined between 1990 and 2000. Since the 2000 census is thought to have done a better job at capturing these households, this improvement in coverage would have the affect of dampening homeownership increases for minorities.

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[52] Historically, the March demographic supplement of CPS had been used to provide annual estimates of homeownership rates. Since 1994 averages from the 12 monthly CPS have been used to provide annual estimates to smooth out sampling variation. Unfortunately, during the period from 1978 to 1982 respondents with missing information on housing tenure were reported as homeowners. The survey consequently provides biased estimates of homeownership rates for this period. As a result, 1983 is the first year shown in this exhibit.

Exhibit 3-3
Recent Trends in Homeownership Rates by Race and Ethnicity
(Percent)

Year	Total	White	Black	Hispanic	Asian
1983	64.9	69.1	45.6	41.2	NA
1984	64.5	69.0	46.0	40.1	NA
1985	64.3	69.0	44.4	41.1	NA
1986	63.8	68.4	44.8	40.6	NA
1987	64.0	68.7	45.8	40.6	NA
1988	64.0	69.1	42.9	40.6	49.3
1989	64.0	69.3	42.1	41.6	51.6
1990	64.1	69.4	42.6	41.2	49.0
1991	64.0	69.5	42.7	39.0	50.8
1992	64.1	69.6	42.6	39.9	50.9
1993	64.1	70.2	42.0	39.4	52.8
1994	64.0	70.0	42.5	41.2	51.3
1995	64.7	70.9	42.9	42.0	50.8
1996	65.4	71.7	44.5	42.8	50.8
1997	65.7	72.0	45.4	43.3	52.8
1998	66.3	72.6	46.1	44.7	52.6
1999	66.8	73.2	46.7	45.5	53.1
2000	67.4	73.8	47.6	46.3	52.8
2001	67.8	74.3	48.4	47.3	53.9
2002	67.9	74.7	48.2	47.0	54.6
2003	68.3	75.4	48.8	46.7	56.3

Note: Data for Asians are not available for 1983-87 as Asians were not identified separately.
Source: 1983-1993 March Supplement of Current Population Survey; 1994-2003 Housing Vacancy Survey.

Other factors potentially contributing to the higher homeownership rates in the CPS were changes in survey methodology introduced in the early to mid 1990s. As detailed in Masnick et al. (1999), changes to the CPS included the introduction of computer-assisted interviewing, a redesigned survey instrument, and redesign of the sampling frame. Masnick et al. argue that the introduction of these changes over the period from 1994 to 1996 contributed to the sharp rise in the homeownership rate observed over this period. Pitkin (1998) also examined this issue and based on a comparison of homeownership trends found in the AHS and CPS concluded that perhaps half of the increase in homeownership found by the CPS over this period may be attributable to changes in survey methodology. However, since homeownership rates continued to rise even after 1996 these changes in survey methodology were not a factor in the increases found later in the decade and the first years of the new century.

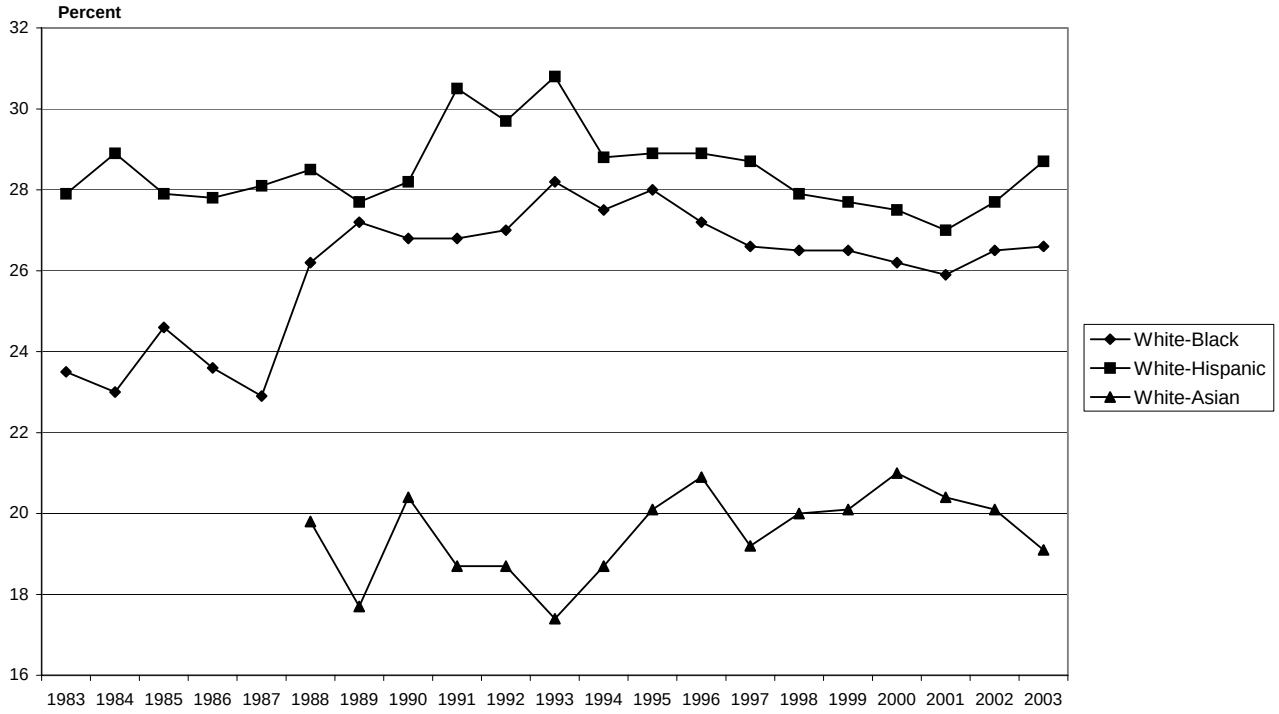
While it is important to bear in mind the potential bias in the CPS estimates, these data are nonetheless an important and widely cited source of information on annual trends in homeownership and so are used extensively in our analysis. Returning to Exhibit 3-3, as shown, from 1983 through

1986 the white homeownership rate suffered annual declines, reaching a low point in 1986 and then began a period of modest gains through 1994. In comparison, while the homeownership rate of both blacks and Hispanics did experience some increases after 1983, they generally declined into the early 1990s, with the black rate reaching a low point in 1993 and the Hispanic rate reaching a low in 1991. Then, beginning in 1994 both black and Hispanic homeownership rates began a period of uninterrupted increases that continued through 2001. Black homeownership rates dipped slightly in 2002 before increasing again in 2003, while Hispanic rates declined in both 2002 and 2003. After a minor dip in 1994, the white homeownership rate began to increase more sharply than it had in recent years, with these increases also continuing through 2001. Based on these three groups, there appears to have been a significant shift in the ability of households to move into homeownership beginning around 1994. Asian rates, however, have not exhibited as consistent a trend. In part, the sharper annual movements in the Asian homeownership rate are due to the small sample size of Asians in the March CPS.[53] But even with this annual sampling variation, Asian homeownership rates have exhibited a different pattern than other racial and ethnic groups. Asian rates generally rose during the early 1990s while other groups were declining or growing only slowly. Then, in the late 1990s, while other groups experienced rapid increases in homeownership, the Asian homeownership rate grew, but more slowly. However, the 2003 CPS data show a sharper increase in homeownership among Asians compared to other groups since 2001.

For both blacks and Hispanics, the difference from white homeownership rates reached a peak in 1993 (Exhibit 3-4). At that point the white-black gap reached 28.2 percentage points while for Hispanics the gap was 30.8 percentage points. These gaps decline almost continuously from that point until 2001, as the gains in black and Hispanic homeownership outpaced the gains among whites. However, the gaps widened somewhat in 2002 and 2003 as the white rate increased more than for blacks while the Hispanic rate actually declined. Asians actually experienced a worsening of the gap with white homeownership rates during the late 1990s, but their gap has narrowed somewhat since 2000. As of 2003, the white-black gap stood at 26.6 percentage points, the white-Hispanic gap was 28.7 percentage points, while the white-Asian gap was 19.1 percentage points. Thus, despite significant gains in homeownership rates among both minorities, the difference between minority and white homeownership rates remains substantial.

[53] The CPS only began identifying Asians as a racial group beginning in 1988. Given the relatively small number of Asian respondents, the sampling error associated with homeownership rates and other characteristics of Asians will be higher than for other racial and ethnic groups.

Exhibit 3-4
Trends in Homeownership Gaps by Race-Ethnicity 1983-2003

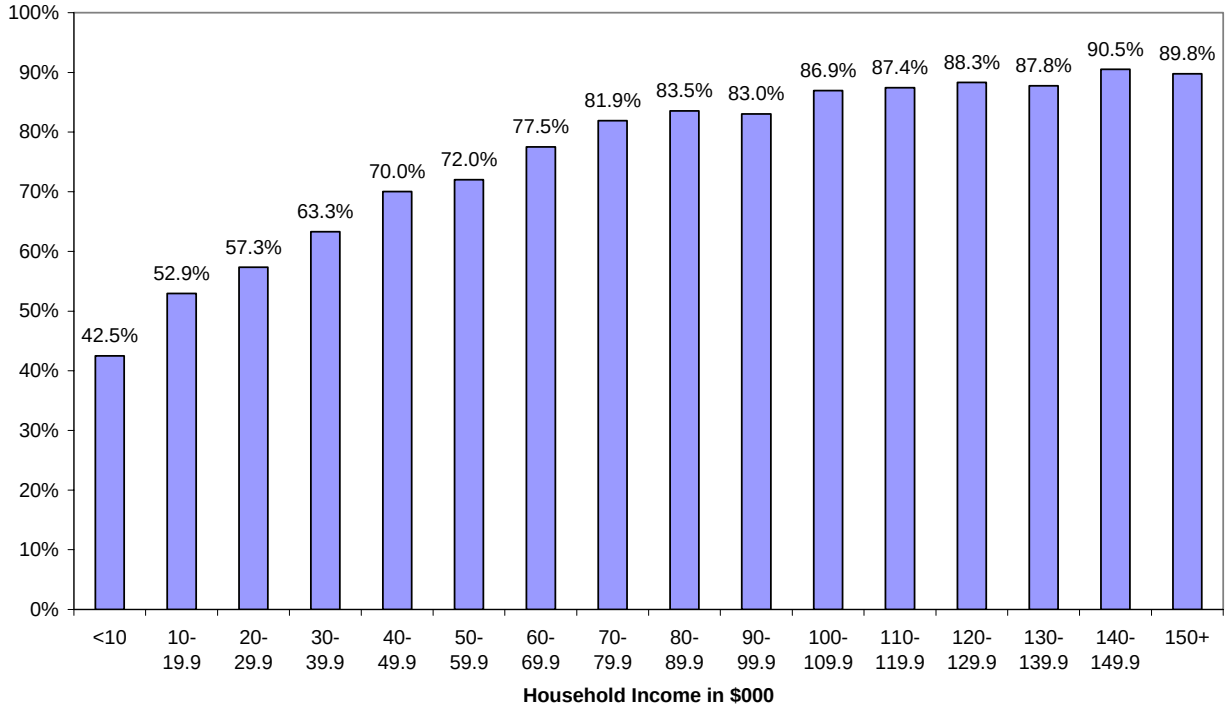


Source: Authors' tabulations based on 1983-1993 Current Population Survey, March Demographic Supplement; 1994-2003 Housing Vacancy Survey.

3.2.2 Homeownership by Income

As the discussion in Chapter Two made clear, income is an important determinant of homeownership as the investment demand for ownership increases with income. Exhibit 3-5 illustrates the relationship between income and homeownership by showing the homeownership rate in 2001 by $10,000 increments in household income. The impact of increased income on the probability of homeownership is largest at lower income levels. Among households with income less than $10,000, 42.5 percent own their homes. An additional $10,000 in income is associated with a 10 percentage-point increase in the ownership rate. With each incremental increase of $10,000 up to $80,000, the homeownership rate increases on average by about 5 percentage points. However, above $80,000 the increase in homeownership from higher income is more limited. As income rises from $80,000 to $140,000 the homeownership rate only increases by about 10 percentage points. At $140,000 the homeownership rate reaches a plateau at about 90 percent. In some sense, this homeownership rate of about 90 percent for the highest-income households represents a maximum potential rate absent financial constraints.

Exhibit 3-5
Homeownership Rate by Household Income in 2001



Source: Authors' tabulations of the Current Population Survey, March Demographic Supplement 2001.

The top panel of Exhibit 3-6 presents data on trends in homeownership rates since 1970 by household income decile. While overall ownership rates rose only modestly during the 1970s, the overall trend was composed of fairly significant declines in ownership rates for low-income households and fairly significant increases among higher-income households. The lowest decile experienced a decline of 7.9 percentage points, while the rate among the second decile dropped by 3.2 percentage points. At the other extreme, households in the top 3 deciles all experienced increases in homeownership of more than 5 percentage points. During the 1980s there were more uniform trends across income categories. Most income groups experienced declines in homeownership rates, with only the 2nd through 5th deciles realizing any gains, and households at the top of the income distribution having little change in rates. Thus, during the 1980s, homeownership among low-to moderate-income households increased relative to higher-income households. However, as in the 1970s, the lowest decile experienced the sharpest declines in ownership rates, dropping by 3.1 points.

The cumulative effect of changes in homeownership rates over the 1970s and 1980s was to increase differences in homeownership rates by income. In 1970 there was a 32.8 percentage point difference in ownership rates between the top and bottom deciles. By 1990 this difference had grown to 50.2 percentage points. This trend was reversed in the 1990s as homeownership increases were shared by all income categories, but the largest gains were among the lowest-income households and the smallest gains were among the highest income households. Homeownership increased by more than 4 percentage points among the first six deciles (with the exception of the 3rd decile). By the end of

the decade the gap between the highest and lowest deciles had declined to 46.3 percentage points, nearly 4 points below the 1990 gap, but still much larger than the gap in 1970.

Exhibit 3-6
Homeownership Rates by Household Income Deciles

Income Decile	Homeownership Rates				Change in Ownership Rates		
	1970	1980	1990	2001	1970-80	1980-90	1990-2001
1	49.6%	41.7%	38.6%	42.8%	-7.9%	-3.1%	4.2%
2	50.7%	47.5%	48.4%	53.2%	-3.2%	0.9%	4.8%
3	50.5%	50.6%	53.3%	56.1%	0.1%	2.7%	2.8%
4	52.4%	53.8%	55.4%	60.0%	1.5%	1.5%	4.6%
5	57.7%	59.6%	60.3%	64.4%	1.9%	0.6%	4.2%
6	65.3%	66.1%	65.4%	70.4%	0.9%	-0.7%	4.9%
7	69.3%	73.3%	72.1%	74.8%	4.0%	-1.2%	2.7%
8	73.3%	79.1%	77.2%	80.8%	5.7%	-1.8%	3.6%
9	77.9%	84.3%	82.8%	84.7%	6.4%	-1.5%	1.9%
10	82.4%	88.7%	88.8%	89.1%	6.3%	0.0%	0.3%
Total	62.6%	64.4%	64.2%	67.7%	1.8%	-0.2%	3.5%

2001 Income Deciles

Income (000s of 2000 dollars)	Homeownership Rates				Change in Ownership Rates		
	1970	1980	1990	2001	1970-80	1980-90	1990-2001
<10.5	49.8%	42.1%	39.4%	42.8%	-7.7%	-2.6%	3.4%
10.5-18	50.9%	48.8%	49.8%	53.2%	-2.1%	1.0%	3.3%
18-25	50.6%	50.7%	52.2%	56.1%	0.2%	1.5%	3.8%
25-33	52.7%	54.7%	56.4%	60.0%	2.0%	1.7%	3.5%
33-42	59.1%	60.5%	60.3%	64.4%	1.4%	-0.2%	4.1%
42-52.5	67.2%	68.7%	67.2%	70.3%	1.6%	-1.5%	3.1%
52.5-65	72.6%	76.6%	73.2%	74.8%	4.0%	-3.4%	1.6%
65-82.5	77.4%	82.6%	79.1%	80.8%	5.3%	-3.5%	1.7%
82.5-112	80.7%	86.9%	84.4%	84.7%	6.1%	-2.4%	0.3%
>=112	84.0%	89.7%	89.6%	89.1%	5.7%	-0.1%	-0.5%
Total	62.6%	64.4%	64.2%	67.7%	1.8%	-0.2%	3.5%

Source: Authors' tabulations of 1970, 1980, and 1990 decennial census from IPUMS and 2001 March Demographic Supplement of the CPS.

The bottom panel of Exhibit 3-6 also shows ownership rates for real income categories based on income deciles from the 2001 CPS. This provides some control for the fact that real incomes have been rising over time, so that the changes in ownership by decile shown in the top panel are due both to changes in ownership rates and changes in real purchasing power by income decile. For example, the cutoff for the top income decile in 1970 was $85,000 measured in 2000 dollars. Thus, the change in homeownership for the top decile reflects not only increases in the propensity to own, but also increases in real income so that the cutoff for this group has risen from $85,000 to $112,000. By showing ownership rates for constant real income categories, the bottom panel isolates the changes in ownership rates from changes in real incomes. Overall, very similar trends are evident in both panels, indicating that much of the observed changes in ownership rates are not due to shifts in the income distribution. As would be expected, the changes in homeownership rates are smaller when constant levels of income are used. For example, increases in ownership rates among higher-income

categories in the 1970s are smaller, indicating that the changes in ownership rates by income decile were partly attributable to rising real incomes during the decade. During the 1980s, the declines in ownership rates among higher real income categories were more pronounced than among higher-income deciles, indicating that if real incomes had not increased there would have been a decline in overall homeownership rates rather than a small increase. Finally, the increases in homeownership rates during the 1990s were also aided by rising real incomes, although the gains among the constant dollar categories were still quite large.

While economists generally analyze income distributions using equally sized divisions of the population such as quartiles or deciles, policy makers generally measure income as a percent of area median income (AMI) in defining household eligibility for participation in housing programs.[54] Measuring income as a percent of AMI is intended to take into account the significant variation in household income that is evident across market areas. There are a variety of cutoffs used for program eligibility. Under many homeownership programs, participants must have income below area median (e.g., HOME and Mortgage Revenue Bonds). In some cases more stringent standards are used. For example, the GSE special affordable housing goal provides credit for loans made to households with income below 60 percent of AMI, or below 80 percent of AMI but residing in low-income neighborhoods. The recently enacted American Dream Downpayment Initiative also targets families with income below 80 percent of AMI. In contrast, rental housing programs generally have more stringent income limits. For example, the Section 8 program is generally limited to those with income below 50 percent of AMI, while Low-Income Housing Tax Credits are aimed at households with income below 60 percent of AMI and rental projects under the HOME program are aimed at households below 65 percent of AMI.

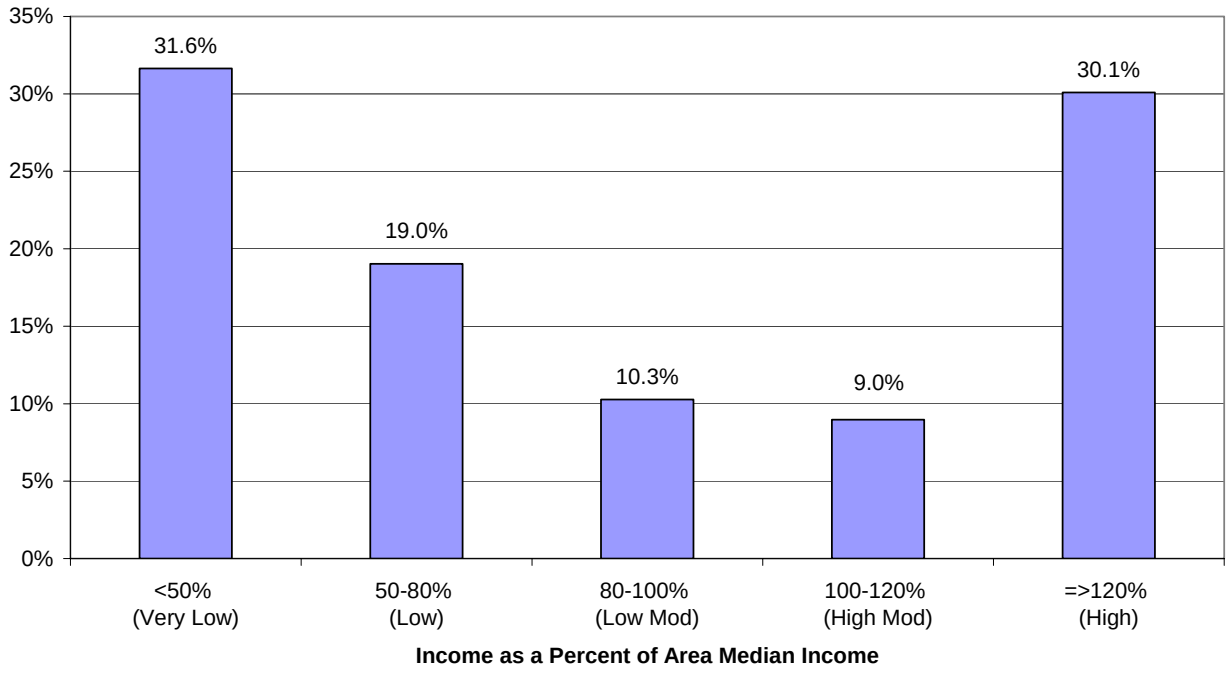
In analyzing housing needs, perhaps the most common categories of income used are less than 50 percent of AMI (very low-income), between 50 and 80 percent of AMI (low-income), 80 to 120 percent of AMI (moderate income), and above 120 percent of AMI (high income). We adopt these categories in our analysis of homeownership rates by income, although we have divided moderate-income households into two groups—those from 80 to 100 percent of median (low moderate) and those from 100 to 120 percent of AMI (high moderate)—in order to correspond to the most common cutoffs used for homeownership program eligibility.

In order to relate these income categories to the deciles previously shown, Exhibit 3-7 shows the share of households that fell within each of these income groups in 2001. As shown, 31.6 percent of households had income below 50 percent of the relevant AMI, so this category roughly corresponds to the first three income deciles. Nearly 20 percent of households had income between 50 and 80 percent of AMI, thus corresponding to the 4th and 5th income deciles, while 10.3 percent had income between 80 and 100 percent of AMI, corresponding to the 6th income decile. (Sixty percent of households have less than the relevant area median—rather than 50 percent as would be expected—because the income standard used is median *family* income, rather than median *household* income. Since families by definition do not include single-person households, family incomes are somewhat larger on average than household income.) Households with income between 100 and 120 percent of AMI represent another 9.0 percent of households (corresponding to the 7th decile), while households

[54] The "area" is the metropolitan area or county or non-metropolitan portion of the state where the household resides.

at or above 120 percent of AMI account for the remaining 30 percent of households (roughly, the 8th through 10th deciles). Over time, the share of households accounted for by each of these groupings has changed only slightly. So measuring household income as a percent of AMI is similar to measures of income based on deciles or other divisions of the households into specific shares of all households (such as quintiles or quartiles).

Exhibit 3-7
Household Distribution in 2001 by Income as a Percent of Area Median Income



Source: Authors' tabulations of Current Population Survey, March Demographic Supplement,

Exhibit 3-8 presents trends in homeownership rates and gaps by income as a percent of area median income from 1970 through 2001. As discussed in the previous section, 1986 was a low point for white ownership, while 1993 was generally a low point for minority homeownership. In order to capture trends in homeownership rates by income around these key turning points, our analysis will include data from both 1986 and 1993. Homeownership gaps are measured using the homeownership rate for households above 120 percent of AMI as the reference point. This approach essentially uses the homeownership rate of the highest income group as a measure of a financially unconstrained homeownership rate, although of course factors other than income are associated with a decision to own a home.

Exhibit 3-8
Trends in Homeownership Rates and Gaps
by Income as a Percent of Area Median Income

Homeownership Rates

	Income as Percent of Area Median Income					
Year	<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	All Households
1970	48.7%	53.5%	64.2%	70.6%	78.8%	62.9%
1980	45.6%	56.5%	67.9%	75.3%	85.1%	64.4%
1986	44.6%	56.4%	64.7%	70.9%	83.1%	63.8%
1993	44.4%	57.8%	67.1%	73.9%	84.4%	64.1%
2001	50.0%	62.8%	70.7%	75.8%	86.1%	67.7%

Homeownership Gap Relative to Income of Households Above 120 Percent of AMI

	Income as Percent of Area Median Income					
Year	<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	All Households
1970	30.1%	25.3%	14.6%	8.2%	0.0%	15.9%
1980	39.5%	28.5%	17.1%	9.8%	0.0%	20.6%
1986	38.5%	26.7%	18.4%	12.2%	0.0%	19.3%
1993	40.0%	26.6%	17.3%	10.5%	0.0%	20.3%
2001	36.1%	23.3%	15.4%	10.3%	0.0%	18.4%

Source: Authors' tabulations of the IPUMS for 1970 and 1980 and the 1986, 1993, and 2001 Current Population Survey, March Demographic Supplement.

Not surprisingly, the homeownership trends in these charts are quite similar to those found when incomes were measured by decile. During the 1970s homeownership declined among households with income less than 50 percent of AMI, while increasing among all other households, particularly those with income above 120 percent of AMI. In the first half of the 1980s homeownership declined for virtually all income groups, but declines were most significant for moderate-income households (between 80 and 120 percent of AMI). Between 1986 and 1993, a period when white homeownership rates were increasing modestly while minority homeownership rates were generally declining, homeownership began to rise for all groups of households except for very low-income households (less than 50 percent of AMI) who experienced a small decline.

In terms of homeownership gaps, in 1970 there was generally less variation in homeownership rates by income than in other time periods. For all groups except low-income households (50 to 80 percent of AMI), homeownership gaps were at their lowest point in 1970. The gap in homeownership rates between the lowest and highest income groups was 30.1 percentage points, compared to 25.3 for low-income households, 14.6 percentage points for households with income between 80 and 100 percent of AMI, and 8.2 points for households with income between 100 and 120 percent of AMI. With homeownership rising most sharply in the 1970s among the highest income households, homeownership gaps increased for all groups during this period. The biggest increase was among the lowest income groups, with the gap increasing more than 9 percentage points to 39.5. Between 1980 and 1986, homeownership gaps increased for moderate-income households (between 80 and 120 percent of AMI), but declined by 1 percentage point for very low-income households and 1.9 percentage points among low-income households. Between 1986 and 1993 moderate-income

households made modest gains relative to higher-income households (-1.1 and -1.7 percentage point gains), while very low-income households lost ground (+1.5) and low-income households made only slight gains (-0.1). From 1993 to 2001, households with income below the median all made gains relative to higher-income households, with the lowest income households making the largest gains. The homeownership gap declined by 3.9 percentage points for very low-income households and 3.3 percentage points for low-income households. As a result of the homeownership gains during the 1990s, the gaps by income were at their lowest point for all groups since 1970. For low-income households, the gap was actually lower than in 1970.

3.2.3 Homeownership by Race and Income

Exhibit 3-9 presents tabulations of homeownership rates by race and ethnicity and income as a percent of AMI from 1970 through 2001. One of the most salient characteristics of homeownership rates by race and income is that while homeownership rates increase significantly with income for all racial and ethnic groups, the impact of rising income on the probability of homeownership is more pronounced for minorities than for whites. For example, in 2001, the difference in homeownership rates between very low-income and high-income whites was 29 percentage points. In comparison, this difference was 42.8 percentage points for blacks, 48.7 points for Hispanics, and 43.9 points for Asians. The smaller homeownership gaps by income for whites reflect the fact that homeownership rates are fairly high for whites of all income levels. As of 2001, white households with income less than 50 percent of AMI had a homeownership rate of nearly 60 percent. Equivalent or higher homeownership rates were only achieved by blacks with income between 80 and 100 percent of AMI and by Hispanics and Asians with income between 100 and 120 percent of AMI.[55]

In terms of trends in homeownership rates, for the most part, each racial and ethnic group has experienced long-run trends in homeownership by income that are similar to the overall trends by income discussed above. However, there were some interesting differences in trends by income during the 1986 to 1993 period. During this time, whites of all income levels experienced increasing homeownership rates. Homeownership among high-income black households also rose fairly significantly during this period, but black households with income below the area median income experienced declines. In contrast, lower-income Hispanic households experienced rising homeownership rates, but higher-income Hispanics had falling rates. During the 1990s, homeownership growth was most pronounced among households with income below the area median for all racial and ethnic groups except Asians. Overall Asian homeownership group was also pulled down by significant declines in homeownership among high-income households, whose homeownership rate declined by 7 percentage points between 1993 and 2001. Given the relatively small sample of Asians in the Current Population Survey, sampling variation in estimated homeownership rates may account for a larger share of the observed changes in homeownership rates among Asians. In addition, a change in CPS methodology as of 1996 to assign respondents who report "Other" race to one of the other four racial categories had the biggest impact on the estimated counts of Indian or Asian householders.

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[55] As will be discussed in more detail in a later section, part of the reason for smaller homeownership gaps by income for whites is that low-income white households include a larger share of elderly households who are low-income but have relatively high wealth. Such low-income/high-wealth elderly households are less common among blacks, and even less common among Hispanics and Asians.

Exhibit 3-9
Homeownership Rates by Race/Ethnicity and Income as a Percent of Area Median Income

		Income as Percent of Area Median Income					
		<50%	**50-80%**	**80-100%**	**100-120%**	**>120%**	**All**
	Year	(Very Low)	(Low)	(Low Mod)	(High Mod)	(High)	**Households**
White	1970	53.6%	56.4%	66.1%	72.1%	79.8%	66.2%
	1980	51.0%	59.8%	70.4%	77.2%	86.2%	68.5%
	1986	51.5%	59.9%	67.2%	72.9%	84.3%	68.4%
	1993	53.2%	62.8%	71.1%	76.7%	85.9%	70.2%
	2001	59.2%	68.4%	75.2%	79.6%	88.1%	74.2%
Black	1970	31.6%	39.9%	50.2%	56.8%	65.9%	41.8%
	1980	30.8%	43.7%	54.7%	63.4%	75.8%	44.8%
	1986	30.5%	46.8%	55.4%	59.5%	73.4%	44.8%
	1993	28.1%	42.1%	53.2%	64.7%	74.6%	42.1%
	2001	33.4%	51.7%	59.4%	63.2%	76.2%	48.5%
Hispanic	1970	28.3%	38.1%	50.9%	58.8%	66.4%	43.7%
	1980	24.8%	38.3%	51.8%	61.2%	74.4%	43.5%
	1986	22.0%	37.7%	47.2%	55.7%	73.8%	40.6%
	1993	22.3%	40.4%	49.8%	56.2%	70.1%	39.4%
	2001	28.2%	44.4%	55.2%	59.0%	76.9%	46.4%
Asian	1970	28.6%	37.9%	50.8%	54.2%	69.8%	48.2%
	1980	23.1%	38.2%	55.0%	63.8%	79.2%	51.5%
	1986	NA	NA	NA	NA	NA	NA
	1993	26.5%	32.7%	47.2%	60.0%	79.5%	50.3%
	2001	28.4%	48.1%	51.6%	63.3%	72.3%	53.2%

Note: NA: Asians were not identified separately in 1986 so this data is not available.

Sources: Authors' tabulations of the 1970 and 1980 IPUMS and the 1986, 1993, and 2001 Current Population Surveys, March Demographic Supplement.

In addition to comparing homeownership rates by income within racial and ethnic categories, it is also interesting to consider the differences in homeownership rates between whites and minorities controlling for household income. Even when minority homeownership rates are compared to whites of similar income, minority homeownership rates are consistently and significantly lower than those of comparable whites. The gaps are largest at lower income levels, but still fairly sizeable even for high-income minority households. Compared to white very low-income households, comparable black households had homeownership rates that were 25.8 percentage points lower in 2001, while for Hispanics and Asians the difference was about 31 percentage points. Among low- and moderate-income minorities, homeownership rates range from about 15 to 25 percentage points below those of comparable whites. Among high-income minority households the differences range from 11.2 percentage points for Hispanics to 15.8 percentage points for Asians. While the white homeownership rate reaches nearly 90 percent for high-income households, minority rates reach a peak of only between 72 and 77 percent—more in keeping with the rates among moderate-income whites.

As noted earlier, the overall white-black gap and white-Hispanic homeownership gaps declined between 1993 and 2001, while the white-Asian gap increased. Exhibit 3-9 provides some insight into

how these gains were divided among income categories. Among blacks, homeownership gaps actually increased for every income category except for the low-income and low-moderate income categories. For Hispanics, homeownership gains were largely concentrated among higher-income households, although the white-Hispanic gap did shrink slightly for households with income between 80 and 100 percent of AMI. Asians experienced significant drops relative to whites in homeownership among households with both very-low and high income.

Of course, changes in the overall homeownership rate are not just due to changes in homeownership rates by income but also due to shifts in the income distribution. Exhibit 3-10 presents data on the distribution of households by race and ethnicity and income over time. Focusing on changes between 1993 and 2001, when overall homeownership rates were on the rise, reveals some interesting differences between racial and ethnic groups. Overall, the white income distribution changed very little over this period, although there was a 1.3 percentage point increase in very low-income households. Thus, for whites, changes in the household income distribution do not appear as an important factor in explaining overall increases in homeownership rates. In contrast, all three minority groups experienced declines in the share of very low-income households and increases at higher-income levels. Among blacks, growth was most pronounced in low-income households (3.6 percentage points) and high-income households (1.8 percentage points). Among Hispanics, growth was more evenly spread across all income groups above 50 percent of AMI. Finally, Asians had the most significant growth in high-income households. Thus, for minorities, overall growth in homeownership rates were aided by upward shifts in the income distribution as well as increases in homeownership rates with income categories.

One notable characteristic of the income distributions shown in Exhibit 3-10 is the significant difference between whites on the one hand and black and Hispanics on the other. While 28.3 percent of white households had income below 50 percent of AMI in 2001, 39.2 percent of Hispanics and 46.6 percent of blacks were in this lowest income category. At the other end of the spectrum, only 15.6 percent of blacks and 18.6 percent of Hispanics had incomes at or above 120 percent of AMI, compared to 33.7 percent of whites. These large differences in household income are an important contributing factor in the low levels of homeownership among blacks and Hispanics. Interestingly, Asians actually had slightly higher incomes than whites in 2001. Thus, for Asians, the overall difference in homeownership rates from whites is solely due to differences in rates by income and not due to differences in income distributions.

Nonetheless, while significant, the impact of differences in household income distributions is still small compared to differences in homeownership rates by race and ethnicity within income categories. If blacks and Hispanics exhibited the same distribution of household incomes as whites, but still had their current homeownership rates by income, their overall homeownership rates would be about 8 and 7 percentage points higher, respectively. However, if blacks and Hispanics retained their current distribution of household income but achieved white homeownership rates at each income decile, their overall ownership rates would be about 20 and 24 percentage points higher, respectively. These large differences in homeownership rates between whites and minorities within income categories reflect important differences in household characteristics other than income. The next section examines several of these key demographic characteristics, including age, household type, and education level.

Exhibit 3-10
Distribution of Households by Race-Ethnicity and Income as a Percent of Area Median Income

Race/ Ethnicity	Year	Income as Percent of Area Median Income <50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	All Households
White	1970	25.3%	18.0%	13.4%	11.9%	31.3%	100%
	1980	27.8%	19.2%	12.2%	10.7%	30.2%	100%
	1986	25.4%	18.3%	11.4%	10.0%	34.9%	100%
	1993	27.0%	18.5%	11.1%	9.6%	33.8%	100%
	2001	28.3%	18.2%	10.3%	9.5%	33.7%	100%
Black	1970	46.4%	22.6%	10.8%	7.6%	12.7%	100%
	1980	48.3%	19.9%	9.7%	7.2%	14.9%	100%
	1986	48.3%	20.0%	9.1%	6.4%	16.2%	100%
	1993	51.7%	18.0%	9.2%	7.2%	13.8%	100%
	2001	46.6%	21.6%	9.4%	6.8%	15.6%	100%
Hispanic	1970	33.6%	24.7%	13.7%	10.3%	17.7%	100%
	1980	38.4%	22.1%	11.7%	9.1%	18.7%	100%
	1986	41.1%	21.5%	10.5%	7.6%	19.3%	100%
	1993	44.3%	21.6%	9.9%	7.1%	17.1%	100%
	2001	39.2%	23.4%	10.6%	8.1%	18.6%	100%
Asian	1970	27.4%	19.0%	13.7%	10.6%	29.3%	100%
	1980	28.3%	18.2%	11.5%	10.4%	31.6%	100%
	1986	NA	NA	NA	NA	NA	NA
	1993	28.3%	17.8%	12.8%	8.3%	32.8%	100%
	2001	28.1%	15.8%	10.7%	8.7%	36.7%	100%

Note: NA: Asians were not identified separately in 1986 so this data is not available.

Sources: Authors' tabulations of the 1970 and 1980 IPUMS and the 1986, 1993, and 2001 Current Population Surveys, March Demographic Supplement.

3.3 Homeownership Rates by Key Demographic Characteristics

This section provides a detailed review of the relationship between homeownership rates by race-ethnicity and income and several key demographic characteristics, including the age of the household head, the type of household, and the education level achieved by the household head. All of these characteristics are known to have a strong association with homeownership rates. This section explores how differences in the age, household type, and education contribute to observed differences in homeownership rates by race-ethnicity and income. This section uses a decomposition technique used by Simmons (2001) to decompose changes in homeownership rates over the period 1993 to 2001 into components due to rising rates for subgroups of the population from shifts in the distribution of households across these subgroups. (See Appendix C for a detailed discussion of this decomposition technique.) This analysis helps to shed light on whether the gains in homeownership experienced during the 1990s were largely attributable to rising homeownership rates or to shifts in household distributions toward subgroups with a greater propensity to own. As will be seen, the gains in the 1990s are largely attributable to gains in homeownership rates with demographic shifts contributing a relatively small amount to the gains in aggregate homeownership rates.

The discussion presented in this section helps to shed light on the relative importance of these individual household attributes on homeownership rates. However, it is important to note that these characteristics are highly interrelated. As a result, while the individual impacts of each of these characteristics on observed overall differences in homeownership rates by race-ethnicity and income may be small, the aggregate impact of all of these characteristics is much larger. Chapter 4 reviews literature that controls for all of these attributes simultaneously and finds that much of the aggregate differences in homeownership rates by race-ethnicity can be explained by differences in household characteristics, including income and wealth.

3.3.1 Household Age

Exhibit 3-11 presents tabulations of homeownership rates by age, income, and race as of 2001. We have divided households into seven age groups based on the age of the household head, with all but the youngest and oldest groups covering a 10-year age interval. As illustrated by the overall homeownership rates by age in the first column of the table, homeownership rates rise sharply with age. Only about one in five households under age 25 own their own home. But by age 25 to 34 nearly half of all households (47.3 percent) are homeowners. Another sharp increase in homeownership occurs by age 35 to 44, when slightly more than two-thirds (68.2 percent) of households own a home. Homeownership rates continue to increase, although at a diminishing rate, up to the 65 to 74 age group, where the ownership rate reaches a maximum of 83.0 percent. Finally, there is a slight decline in homeownership for those age 75 or older.

The association between age and homeownership is related to the investment demand for housing. Younger households are more mobile, making homeownership less attractive given the high transaction costs of moving. There is also a strong association between age and income, so that investment demand rises with age. But as Exhibit 3-11 shows, homeownership increases with age even controlling for income, although higher-income households do move more quickly into homeownership. The homeownership rate for households with income at or above 120 percent of AMI reaches 77 percent by age 35 to 44 and exceeds 90 percent by age 55 to 64. Lower-income households move into homeownership more slowly, but experience sizeable increases in homeownership even after age 64. Because higher-income households move into homeownership more quickly, gaps in homeownership by income (measured as the difference from the ownership rate for those with high incomes) are largest for younger age groups. But for all but the lowest income group, homeownership gaps by income are negligible by age 65.

The significant association between age and homeownership is evident for all racial and ethnic groups, although whites have higher homeownership rates at all age levels compared to minorities. White rates rise quickly through age 35 to 44, reach a plateau above 80 percent by age 55, and then decline slightly above age 75. Black homeownership rates rise more slowly, but continue to rise through age 75. Hispanic homeownership rates actually rise somewhat more quickly with age than among blacks, but homeownership rates plateau for Hispanics by about age 45. Among minorities, Asians experience the largest increases in homeownership between age 35 and 54, but then homeownership rates drop off sharply above age 64.

Exhibit 3-11
Homeownership Rates by Age, Income, and Race-Ethnicity

2001 Homeownership Rates

Age	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
<25	21.4%	11.4%	22.1%	29.5%	32.1%	48.5%	25.2%	11.4%	17.6%	22.0%
25-34	47.3%	24.4%	39.7%	54.0%	57.2%	69.3%	55.5%	29.9%	32.0%	31.3%
35-44	68.2%	36.1%	58.7%	68.8%	77.2%	87.5%	75.1%	49.1%	49.0%	57.9%
45-54	76.6%	45.7%	68.4%	79.5%	83.9%	91.0%	81.9%	55.7%	60.1%	70.7%
55-64	81.1%	63.5%	80.0%	86.6%	91.2%	92.8%	85.8%	61.4%	61.8%	76.3%
65-74	83.0%	72.9%	90.9%	90.6%	92.4%	93.3%	86.0%	72.0%	65.3%	65.3%
75+	78.1%	72.4%	87.6%	90.4%	89.0%	91.6%	79.5%	75.9%	64.2%	52.6%
Total	67.7%	50.0%	62.8%	70.7%	75.8%	86.1%	74.2%	48.5%	46.4%	53.2%

Change in Homeownership Rates 1993-2001

Age	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
<25	6.5%	2.0%	6.6%	8.3%	4.2%	13.5%	7.3%	2.2%	10.3%	16.1%
25-34	4.0%	6.7%	5.2%	4.5%	-1.6%	1.0%	4.5%	10.3%	7.7%	-1.6%
35-44	2.7%	4.5%	7.7%	3.3%	2.1%	2.0%	2.8%	7.7%	5.9%	3.1%
45-54	1.5%	-0.6%	5.2%	4.0%	4.5%	1.8%	1.9%	-0.7%	7.7%	4.9%
55-64	1.4%	3.4%	4.0%	1.0%	1.2%	0.7%	2.3%	-1.3%	-0.8%	5.3%
65-74	3.1%	6.2%	1.7%	0.8%	2.6%	-1.1%	2.6%	10.5%	6.8%	7.3%
75+	4.2%	5.8%	3.1%	3.6%	-1.5%	0.2%	3.7%	12.8%	12.3%	-6.6%
Total	3.6%	5.5%	4.9%	3.6%	1.8%	1.7%	4.0%	6.4%	7.1%	2.9%

Source: Authors' tabulations of the 1993 and 2001 Current Population Survey, March Demographic supplement.

In terms of homeownership gaps by age and race/ethnicity, white-minority differences tend to be smallest for the youngest age groups, before white rates have increased very much, and the oldest age groups, when minorities continue to experience increases in homeownership rates while white rates increase very little. For example, the white-black homeownership gap is about 25 percentage points from age 25 through 64, but above age 64 the gap narrows substantially. The white-Hispanic gap exhibits a similar pattern, although the gaps remain large even for elderly Hispanics. The white-Asian gap shows a substantial narrowing by age 55, but the gap widens again as ownership rates drop sharply among the oldest Asians.

The bottom panel of Exhibit 3-11 presents changes in homeownership rates from 1993 to 2001. The homeownership gains of the 1990s were evident among all age groups, with the largest rate increases among both the youngest and oldest age groups. The gains in homeownership among younger households are particularly notable because of the declines in homeownership among young households during the 1980s.[56] In fact, with just a few exceptions, homeownership increases were evident among all income levels and racial and ethnic groups by age. The smallest rate increases—and even declines in a few cases—were among households between age 45 and 64. This pattern was most pronounced for blacks and Hispanics, with younger and older households experiencing double digit increases in homeownership rates, while households between 45 and 64 experienced declines. The pattern among Asians was somewhat different, with the largest increases evident among those in the middle of the age distribution from age 45 to 64.[57]

Overall changes in homeownership rates are the result of changes in both ownership rates across age categories and changes in the age distribution of households. A significant demographic trend that has contributed to changes in homeownership is the general aging of the population as the large baby-boom cohort has moved into middle age over the last two decades.[58] Exhibit 3-12 shows the age distribution of households by income and race/ethnicity in 2001 and how this distribution changed between 1993 and 2001. As of 2001, households were somewhat concentrated in the 35 to 44 and 45 to 54 age groups, each of which accounted for about a fifth of all households. The aging of the baby boom between 1993 and 2001 is evident in the bottom panel of Exhibit 3-12 by the decline in the share of households age 25 to 34 and the increase in the share age 45 to 54. There were also increases in young households under age 25, in part due to immigration, and households 75 and older, reflecting increasing life spans and longer periods of independent living by the elderly.

The aging of the population would be expected to help boost homeownership rates since older households are more likely to own their homes. While the aging of the population did contribute to rising rates during the 1990s, much of the increase is attributable to rising rates by age. When changes in homeownership rates are decomposed into portions due to changes in the household age

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[56] See Green (1996) and Apgar, et al (1991), for a discussion of declines in homeownership by age during the 1980s

[57] Again, the estimates of Asian homeownership should be interpreted with caution given the relatively small sample available in the CPS. For example, the very large increase in homeownership among households under age 25 may be due to sampling variation resulting from the very small number of sampled Asian households in this age category.

[58] The term “baby boom” generally refers to a period of high fertility rates that prevailed from 1946 to 1964. People born during these years were age 29 to 47 in 1993 and age 37 to 55 in 2001.

distribution and to changes in homeownership rates, it turns out that shifts in the household age distribution account for only about 20 percent of the increase in homeownership during the 1990s, with the other 80 percent due to rising homeownership rates by age.

Exhibits 3-11 and 3-12 also show how household income and age are jointly related to homeownership rates. Across income categories, there is a fair amount of similarity in the share of households under age 35, which accounts for much of the first-time buyer market. This age group comprises about a quarter of households in each income category except the highest. There is a tendency for the share of households age 35 to 64 to be larger among higher-income categories as this is generally the period of highest earnings potential. The share of households in this middle-age bracket rises from about 40 percent for very low-income households to nearly three quarters of high-income households. One of the most significant differences in the age distribution by income is in the share of elderly households, who are disproportionately low-income. Households age 65 or over account for more than a third of very low-income households, but only a fifth of low-income households, and less than 10 percent of high-income households. However, while these elderly households may have low incomes, they may also have relatively high wealth.

The changes in the household age distribution were generally similar across income categories. The primary exception is very low-income households where there was a fairly significant increase in the share of households age 75 and older and less growth in the baby-boom age groups. For every income category except very low-income, the overall changes in homeownership rates were almost exclusively due to rising homeownership rates rather than changes in the age distribution. For very low-income households, about 20 percent of the increase in the overall homeownership rate was due to changes in the household age distribution. Perhaps more importantly, households age 75 and older alone accounted for more than two-fifths of the increase in homeownership among very low-income households. Of the 5.5 percentage point increase in homeownership among very low-income households, this group accounted for 2.3 percentage points, as their increasing share of households combined with their high homeownership rates to pull up the overall rate for this income category.

Turning to differences in the household age distribution by race and ethnicity, one factor that contributes to the white-minority differences in homeownership rates is that minorities tend to be younger than whites. Compared to whites, minority groups have larger shares of households under age 35. Among whites, 21 percent of households are under age 35, compared to 29 percent of blacks, 36 percent of Hispanics, and 33 percent of Asians. Whites also have a larger share of elderly households with 23 percent of households age 65 and older, compared to only 15 percent of blacks, 11 percent of Hispanics, and 10 percent of Asians. The lower share of white households in young age groups and higher share in older age groups contribute to the higher homeownership rate among whites. If minorities had the same age distribution as white households, their homeownership rates would increase by between 4 and 6 percentage points.

Exhibit 3-12
Household Distribution by Age, Income, and Race-Ethnicity

2001 Household Distribution

Age	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
<25	6.0%	9.1%	7.5%	5.8%	4.7%	2.3%	5.1%	8.1%	10.0%	7.3%
25-34	17.4%	14.8%	20.3%	22.0%	21.3%	15.6%	15.5%	20.7%	25.9%	25.5%
35-44	22.5%	14.8%	21.9%	25.8%	26.7%	28.5%	21.6%	24.4%	25.7%	26.1%
45-54	20.5%	12.7%	17.3%	19.7%	22.9%	30.2%	20.9%	20.5%	16.9%	20.8%
55-64	13.1%	12.3%	12.3%	12.4%	13.2%	14.6%	13.8%	11.7%	10.4%	10.1%
65-74	10.5%	15.5%	12.1%	8.8%	7.3%	5.9%	11.6%	8.1%	6.8%	5.7%
75+	10.0%	20.8%	8.5%	5.5%	3.8%	2.9%	11.5%	6.5%	4.3%	4.5%
Total	100%	100%	100%	100%	100%	100%	100.0%	100.0%	100.0%	100.0%
	42.9%	27.5%	39.2%	45.5%	49.6%	58.7%				

Change in Household Distribution 1993-2001

Age	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
<25	0.6%	-0.4%	0.9%	1.0%	1.4%	0.9%	0.3%	1.4%	0.8%	1.1%
25-34	-3.4%	-3.5%	-4.2%	-3.6%	-4.0%	-2.3%	-3.8%	-4.2%	-2.6%	0.3%
35-44	-0.2%	0.3%	1.8%	0.7%	-0.7%	-2.0%	-0.3%	-0.2%	0.8%	-4.7%
45-54	3.5%	2.6%	4.3%	3.9%	4.0%	3.6%	3.6%	5.0%	0.3%	3.3%
55-64	0.5%	1.3%	0.4%	0.1%	0.8%	-0.3%	0.8%	-0.4%	0.0%	-0.8%
65-74	-1.6%	-2.1%	-2.4%	-2.2%	-1.4%	-0.4%	-1.5%	-2.2%	0.1%	0.3%
75+	0.6%	1.7%	-0.8%	0.1%	-0.1%	0.6%	0.9%	0.5%	0.6%	0.5%
Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Authors' tabulations of the 1993 and 2001 Current Population Survey, March Demographic supplement.

The younger age structure of the Hispanic and Asian populations reflects the impact of immigration, since immigrants tend to enter the country in young adulthood.[59] One of the impacts of immigration is that there was less change in the household age distribution for both Hispanics and Asians than for whites and blacks. While both whites and blacks experienced large declines in the share of households age 25 to 34 and 65 to 74 and increases in households age 45 to 54, these impacts were more muted for Hispanics and Asians. As a result, the contribution of shifts in the household age distribution to changes in homeownership rates were smaller for Hispanics and Asians. Among whites, 22 percent of the overall rise in homeownership can be attributed to favorable changes in the age structure of the population, while for blacks this share is 13 percent. But for Hispanics, shifts in the age distribution only accounted for 4 percent of the total rise and for Asians shifts in the age distribution actually accounted for a 0.3 percentage point decline in the overall homeownership rate.

3.3.2 Household Type

Another key demographic determinant of homeownership is household type. To evaluate the relationship between homeownership and household type we have divided households into six categories: married couples with and without children, other family households with and without children, single persons, and other types. For purposes of this categorization, children are defined as persons age 18 or less. 'Other families' include households where at least two related individuals reside, but the household is not headed by a married couple. Other families without children include such groups as adult siblings or multigenerational households without children. Other families with children are either single-parent households (either never married or divorced or widowed), children living with grandparents, or same-sex partners with children. "Other" households consist of groups of two or more non-related individuals, including same-sex partners without children.

The demand for housing services would be expected to be stronger for larger households (such as households with children) and married couples, who have a more home-centered lifestyle. But household type is also closely related to household age and income, so that differences in homeownership by household type also reflect differences in these factors as well. For example, the presence of children increases other household costs and may depress household earnings due to the child-care needs. Thus, even though the presence of children may increase housing demand, there may be other associated factors that decrease the propensity to own. Households without children also tend to be older (past child rearing age), and so generally have higher homeownership rates associated with both age and income.

Exhibit 3-13 presents tabulations of homeownership rates by household type, income, and race. Homeownership rates are highest for married couple households, with the highest rates among married couples without children (86.1 percent), reflecting the fact that these households tend to be older. Married couples with children also have a very high ownership rate (78.5 percent). Other families without children have the next highest homeownership rates (64.5 percent), again reflecting the fact that these households tend to be older and to have higher incomes. Single-person households

[59] For a discussion of the trends in the number and characteristics of immigrants and their movement to homeownership see McArdle (1995), Callis (1997), and Borjas (2002).

Exhibit 3-13
Homeownership Rates by Household Type, Income, and Race-Ethnicity

2001 Homeownership Rates

Household Type	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Married, No Children	86.1%	78.1%	82.9%	84.7%	86.5%	91.2%	89.2%	78.0%	66.0%	61.0%
Married with Children	78.5%	44.1%	64.3%	75.9%	81.0%	91.4%	85.2%	65.1%	55.7%	66.9%
Other Family, No Children	64.5%	54.1%	62.1%	66.0%	70.9%	79.0%	75.1%	54.1%	41.6%	56.2%
Other Family with Children	40.4%	25.8%	44.8%	58.7%	60.2%	72.1%	52.4%	27.4%	23.2%	30.8%
Single Persons	54.1%	49.4%	57.4%	61.6%	62.9%	69.0%	58.8%	39.4%	34.2%	29.4%
Other	39.2%	26.9%	29.9%	34.2%	44.9%	53.8%	44.2%	26.2%	20.0%	25.4%
Total	67.7%	50.0%	62.8%	70.7%	75.8%	86.1%	74.2%	48.5%	46.4%	53.2%

Change in Homeownership Rates 1993-2001

Household Type	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Married, No Children	3.1%	5.5%	3.4%	4.6%	2.8%	1.8%	3.5%	5.3%	6.3%	0.1%
Married with Children	5.3%	6.4%	9.2%	4.3%	2.7%	3.2%	6.2%	9.3%	8.3%	6.1%
Other Family, No Children	1.6%	5.3%	-0.6%	-2.0%	2.3%	1.1%	3.0%	0.9%	3.8%	11.5%
Other Family with Children	8.1%	7.7%	7.0%	1.6%	-6.6%	0.0%	8.7%	7.9%	8.5%	-2.6%
Single Persons	4.3%	2.6%	7.7%	7.4%	4.0%	5.2%	4.6%	7.7%	7.7%	-3.2%
Other	5.4%	6.1%	5.9%	7.2%	6.7%	2.4%	6.8%	2.9%	1.8%	13.3%
Total	3.6%	5.5%	4.9%	3.6%	1.8%	1.7%	4.0%	6.4%	7.1%	2.9%

Source: Authors' tabulations of the 1993 and 2001 Current Population Survey, March Demographic supplement.

have somewhat lower homeownership rates at 54.1 percent. The lowest homeownership rates are among other families with children and "other" households, both of which have homeownership rates around 40 percent.

There are interesting patterns to the gaps in homeownership by income within household type categories. The largest differences in homeownership by income are among married couple and other family households with children, each of which exhibits a more than 45 percentage point gap in homeownership rates between the lowest and highest income categories. At the other extreme, the smallest homeownership gap by income is for married couples without children, as homeownership rates only increase by 13 percentage points from the lowest to highest income groups. The other groups have moderate homeownership gaps by income, ranging from 20 percentage points for single persons to 27 percentage points for other households. Comparing differences in homeownership rates by household type within the highest income category gives an indication of how household type affects homeownership independent of associated financial constraints. Among households with income at or above 120 percent of AMI, married couples—with and without children—have the highest homeownership rates at about 91 percent. Other families without children have the next highest rates at 79.0 percent. Other families with children and single persons have ownership rates around 70 percent, while the lowest homeownership rates are for other households at 53.8 percent.

In comparing homeownership rates by race and ethnicity, as with other demographic categories, there are significant white-minority homeownership differences across all household types. For the most part, the white-minority differences by household type range from a low of 18 percentage points to a high of 34 percentage points. The one exception is the white-black difference for married couples without children, which is only 11 percentage points, reflecting the substantial narrowing of white-black homeownership differences among the oldest age group. In contrast Asians have the largest gaps for married couples without children at 29 percentage points, reflecting the concentration of these households in younger age groups than whites. Among blacks, the largest gap by household type is for other families with children at 25 percentage points. Hispanics have relatively little variation in homeownership gaps by household type, with all categories having gaps of at least 23 percentage points.

The bottom panel of Exhibit 3-13 shows how homeownership rates changed by household type between 1993 and 2001. Once again, gains were evident among all groups. The largest gains were among other families with children (8.1 percentage points), followed by other households (5.4 percentage points) and married couples with children (5.3 percentage points). Single persons also had a sizeable gain in homeownership over this period of 4.3 percentage points. The smallest gain was in the rate among other families without children, which only increased by 1.6 percentage points. With few exceptions, there were gains in homeownership across all income categories and racial and ethnic groups by household type.

Overall differences in homeownership rates across income and racial and ethnic categories reflect differences in the distribution of household types by income and race and ethnicity. For example, single persons accounted for only a quarter of all households in 2001, but almost half of all very low-income households and only 7 percent of high-income households. Low incomes among single-person households reflect both the reliance on a single source of income and a high share of elderly households. In contrast, married couples are about half of all households, but nearly 80 percent of high-income households and only a quarter of very low-income households. Higher incomes among

married couples reflect the potential for two sources of income. In short, differences in homeownership rates by household type are clearly associated with differences in income levels associated with different household types.

There are also some notable differences in the distribution of household types across racial and ethnic groups. For example, compared to whites, blacks have a much lower share of married couple households—31.8 percent for blacks compared to 55.0 percent for whites—and a much higher share of other family households—33.9 percent compared to 11.7 percent. Since married couples are much more likely to be homeowners than other family households, this difference in household types contributes to the differences in homeownership rates between whites and blacks. Overall, if blacks had the same distribution of household types as whites, but retained existing black homeownership rates by household type, the overall black homeownership rate would be 8.4 percentage points higher. Thus, the difference in the distribution of households by type between whites and blacks is an important factor in the homeownership rates of these two groups.

For Hispanics and Asians, differences from whites in the distribution of households by type play a much smaller role in the overall homeownership gap. Among Hispanics, married couples account for a similar share of households compared to whites, and Hispanics have a much lower share of single-person households. Both of these factors would help to mitigate the white-Hispanic homeownership gap. On the negative side, Hispanics have a much higher share of households with children—49.2 percent compared to 29.5 percent among whites. Overall, if Hispanics had the same household distribution as whites, their homeownership rate would only increase by 1.8 percentage points. Asians also generally have a household distribution that favors homeownership. Asians have a higher share of married couples than whites (62.7 percent compared to 55.0 percent) and fewer single-person households. As a result, if Asians had the same household distribution as whites but maintained their current homeownership rates, their homeownership rate would actually be 3.7 percentage points lower. In short, for Hispanics and Asians, differences in the distribution of households by type do not account for the overall gap in homeownership rates compared to whites.

As was noted in the discussion of homeownership by age categories, changes in overall homeownership rates reflect not just changes in rates for specific household categories, but also shifts in the distribution of households across these categories over time. The top panel of Exhibit 3-14 presents the distribution of household types by income and race and ethnicity in 2001, while the bottom panel shows changes in the household distribution. Recent shifts in household types have not been favorable for homeownership. From 1993 to 2001 there was a decline in the share of married couple households and an increase in the share of single-person, other family without children, and other households. Since these later groups have lower homeownership rates than married couples, this shift in the household distribution would tend to lower homeownership rates, all else equal. In fact, when changes in ownership rates are decomposed into portions due to increases in rates by household type versus changes due to shifts in the distribution of households by type, we find that the shift in the distribution of households by type served to lower overall homeownership rates by 0.8 percentage points. However, this decline was offset by an increase of 4.4 percentage points due to rising homeownership rates among all household types.

Exhibit 3-14
Household Distribution by Household Type, Income, and Race-Ethnicity

2001 Household Distribution

Household Type	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Married, No Children	28.4%	16.7%	26.5%	30.4%	32.9%	39.9%	31.7%	16.0%	18.9%	26.8%
Married with Children	23.9%	8.5%	20.2%	27.8%	33.0%	38.3%	23.3%	15.8%	35.4%	35.9%
Other Family, No Children	7.1%	7.3%	9.0%	8.6%	7.3%	5.2%	5.5%	13.6%	11.9%	7.6%
Other Family with Children	8.6%	13.7%	10.7%	7.5%	6.1%	3.1%	6.2%	20.3%	13.8%	5.3%
Single Persons	26.1%	49.9%	26.8%	18.1%	13.6%	7.3%	27.5%	28.9%	14.5%	17.4%
Other	5.8%	3.9%	6.8%	7.6%	7.1%	6.3%	5.9%	5.5%	5.5%	7.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Change in Household Distribution 1993-2001

Household Type	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Married, No Children	-0.9%	0.6%	-2.1%	-1.6%	-0.2%	-1.4%	-0.7%	0.2%	-0.6%	1.9%
Married with Children	-1.9%	-2.0%	-1.5%	-0.9%	-3.4%	-1.8%	-2.4%	-1.9%	-0.2%	-1.7%
Other Family, No Children	0.5%	0.5%	0.9%	0.8%	-0.1%	0.3%	0.2%	0.2%	2.0%	-1.2%
Other Family with Children	-0.4%	-3.0%	0.9%	0.4%	0.7%	0.7%	-0.1%	-3.8%	-1.4%	-1.4%
Single Persons	1.7%	3.4%	0.5%	-0.3%	2.2%	0.9%	2.1%	3.2%	-0.5%	0.8%
Other	1.0%	0.5%	1.3%	1.6%	0.7%	1.4%	0.9%	1.9%	0.7%	1.7%
Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Authors' tabulations of the 1993 and 2001 Current Population Survey, March Demographic supplement.

The decomposition of changes in homeownership rates also sheds light on which groups contributed most to the overall change in homeownership rates. Interestingly, single-person households accounted for the largest share of the overall rise in homeownership rates. Of the 3.6 percentage point rise between 1993 and 2001, single-person households accounted for 56 percent of the total increase as this group both came to account for a larger share of households and had a significant rise in homeownership rates. The next largest contribution to the overall increase in homeownership came from other families with children and other households, each of which accounted for a little less than a fifth of the overall rise.

This pattern was fairly consistent across all income and racial and ethnic categories, with rising rates among all household types offsetting declines in homeownership due to shifts in the household distribution toward single-person and other households and away from married households. One exception was among very low-income households, where the growth of elderly households in this income category was evident in an increase in married couples without children, other families without children, and single-person households—all of which contributed to an increase in homeownership for this income category.

3.3.3 Education

Another factor associated with homeownership rates is education level. Several recent studies have found that one of the notable aspects of changes in homeownership rates over the last several decades has been the widening of homeownership gaps by education level. Segal and Lewis (1999), for example, show that the gap in ownership rates between those with less than a high school degree and those with a post-graduate degree was 5.8 percentage points in 1977. By 1997 homeownership rates had decreased sharply for those with less than a high school degree and had increased sharply for those with a graduate degree so that this education gap had increased to 21.4 percentage points. Gyourko and Linneman (1997) undertake a more complex analysis of the impact of educational attainment on homeownership probabilities that accounts for a variety of other factors, such as age, income, and marital status. They find that from 1960 to 1990 those with less than a high school degree were progressively less likely to own a home, so that the homeownership gap with more highly educated households was growing. The divergence in homeownership propensities by education level are thought to reflect changes in the labor market returns to education over this period. Older households with less than a high school education did not suffer as much of an economic penalty for a lack of education as younger households have. While the changes in homeownership probabilities associated with education have occurred over a fairly long time period and so might not be as evident in changes in homeownership in recent years, given the importance of education as an explanatory factor in the literature, we also examine recent trends in homeownership rates by education level.

Exhibit 3-15 presents homeownership rates by education level and income and race and ethnicity for 2001. As shown, there is a fairly strong association between education level and homeownership rates. The only situation where an increase in education is not associated with higher homeownership is for those with some college or an Associates degree, as homeownership rates for this group are slightly lower than for those with just a high school degree. Compared to those with less than a high school degree, homeownership rates are 13 percentage points higher for high school graduates, 16 percentage points higher for college graduates, and 24 percentage points higher for those with a graduate degree.

Exhibit 3-15
Homeownership Rates by Education Level, Income, and Race-Ethnicity

2001 Homeownership Rates

Education Level	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Less than High High School	55.7%	47.6%	61.8%	66.9%	69.6%	77.6%	66.2%	46.3%	39.4%	37.7%
High School Graduate	68.2%	52.5%	65.7%	75.4%	80.1%	87.5%	75.2%	44.6%	45.9%	49.4%
Some College/Assoc. Degree	67.7%	48.8%	61.5%	70.0%	75.8%	85.3%	72.7%	47.7%	54.7%	53.3%
Bachelor's Degree	71.8%	48.7%	58.1%	66.7%	70.8%	85.7%	75.8%	54.6%	54.4%	55.9%
Graduate Degree	79.8%	56.2%	66.4%	67.1%	78.6%	88.4%	81.8%	76.4%	74.0%	60.2%
Total	67.7%	50.0%	62.8%	70.7%	75.8%	86.1%	74.2%	48.5%	46.4%	53.2%

Change in Homeownership Rates 1993-2001

Education Level	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Less than High High School	-1.5%	1.1%	-4.8%	-3.7%	-8.4%	-7.4%	-1.6%	4.0%	5.4%	2.1%
High School Graduate	3.3%	7.1%	4.6%	3.6%	2.5%	2.1%	4.1%	6.0%	7.6%	-3.3%
Some College/Assoc. Degree	5.3%	8.9%	11.1%	5.0%	4.4%	2.5%	5.7%	7.0%	7.1%	8.0%
Bachelor's Degree	3.9%	9.3%	10.9%	7.8%	-0.8%	2.6%	5.0%	4.3%	3.2%	1.0%
Graduate Degree	3.5%	9.9%	11.0%	7.3%	12.3%	1.8%	2.6%	14.4%	17.1%	5.4%
Total	3.6%	5.5%	4.9%	3.6%	1.8%	1.7%	4.0%	6.4%	7.1%	2.9%

Source: Authors' tabulations of the 1993 and 2001 Current Population Survey, March Demographic supplement.

As would be expected, the differences in homeownership rates by education level are strongly associated with differences in income. The important association between education and income is demonstrated by the fact that within income categories the differences in homeownership rates by education level are much smaller. For example, in most income categories, high school graduates have homeownership rates that are close to or greater than the rates for those with graduate degrees. Thus, the overall differences in homeownership by education are largely due to the propensity for more highly-educated households to have higher incomes rather than some independent impact of education on the probability of being a homeowner.

The lack of association between education and homeownership controlling for income also reflects the differences in household age associated with education levels. College and graduate school degrees have become more common in recent decades, so that these education categories have higher shares of young households than high school graduates. Thus, part of the reason why high school graduates with income between 100 and 120 percent of AMI are more likely to own a home than those with similar income and a graduate degree is that the high school graduates are generally older than households with graduate degrees. This result is in keeping with the analysis by Gyourko and Linneman (1997) that found little difference in homeownership rates for households with at least a high school degree after controlling for age and income, although those with less than a high school education had much lower homeownership rates than other households, all else equal.

The bottom panel of Exhibit 3-15 shows how homeownership rates changed between 1993 and 2001 by education level. All groups except those with less than a high school degree experienced solid gains in homeownership rates over this period; those with some college or an Associate's degree had the largest gains. But homeownership among those with less than a high school degree declined by 1.5 percentage points, with losses evident among all but the lowest income category. Since most education categories experienced similar growth in homeownership rates since 1993, there was not much change in homeownership gaps by education level—with the notable exception of those with less than a high school degree.

In examining racial differences in homeownership, we once again find large differences in homeownership rates between whites and all minority groups even controlling for differences in education. While the largest white-minority gaps are evident among households with a high school degree or less, the gaps for households with a college education are all about 20 percentage points. It is only among households with a graduate degree that the white-minority homeownership gaps decline significantly. Among these households the white-black gap is only 5.4 percentage points, while the white-Hispanic gap is 7.8 percentage points. The one exception is among Asians, where those with a graduate degree still have a 21.6 percentage point gap with whites of a similar education level. This may reflect a high share of Asian immigrants among this group as well as a higher concentration in high-cost metropolitan areas.

The top panel of Exhibit 3-16 shows the distribution of households by education level and income and race/ethnicity, while the bottom panel shows how this distribution changed between 1993 and 2001. The tendency for households to have higher levels of education is evident in the growing share of households with education beyond high school and the shrinking share with just a high school degree or less. The household distribution also demonstrates the strong correlation between education level and income as households with less education make up greater shares of low-income households and those with higher levels of education account for larger shares of high-income households.

The table also shows that there are some significant differences in educational attainment across racial-ethnic groups. Compared to whites, blacks and Hispanics have higher shares of households with a high school education or less and lower shares of households with a college or graduate degree. Among whites, 43.5 percent of households have a high school degree or less, compared to 56.2 percent of blacks and 69.1 percent of Hispanics. Whites also have 28.7 percent of households with a college or graduate degree, compared to only 15.7 percent of blacks and 11.6 percent of Hispanics. In contrast, Asians actually have higher levels of educational attainment than whites. Only 27.6 percent of Asians have a high school degree or less, and 53.0 percent have a college or graduate degree. If blacks and Hispanics attained the same level of education as whites, the homeownership rates for these groups would increase by 2.3 and 5.5 percentage points, respectively. With the same level of education as whites, the Asian homeownership rate would actually be 1.8 percentage points lower given Asians' generally higher levels of education.

Decomposing the overall changes in homeownership rates between 1993 and 2001 into components due to changes in homeownership rates by education level and in the distribution of households by education level reveals that much of the rise in homeownership over the period can be attributed to households with either some college or a college degree. This positive contribution results from both a growing share of households in these categories and the strong increases in homeownership among these groups. On the other hand, households with a high school education or less actually contributed to declines in homeownership due to drops in the share of households in these categories and lower homeownership rates among households with less than a high school degree. This pattern was evident for most income and racial-ethnic groups. One exception was among very low-income households, where those with just a high school degree accounted for about three-fifths of the rise in homeownership. This pattern probably reflects the increase in elderly homeowners in this category. The other exception was Hispanics, where the gains in homeownership were fairly evenly spread across all education levels.

Exhibit 3-16
Household Distribution by Education Level, Income, and Race-Ethnicity

2001 Household Distribution

Education Level	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Less than High High School	16.1%	30.1%	15.8%	11.4%	9.7%	5.2%	12.1%	22.1%	42.7%	10.1%
High School Graduate	30.8%	35.3%	34.6%	33.6%	30.3%	23.0%	31.4%	34.1%	26.4%	17.5%
Some College/Assoc. Degree	26.8%	22.8%	30.1%	29.7%	29.6%	27.0%	27.7%	28.1%	19.3%	19.4%
Bachelor's Degree	17.3%	8.7%	14.4%	18.0%	20.5%	26.9%	18.7%	10.9%	8.5%	35.6%
Graduate Degree	9.0%	3.0%	5.1%	7.4%	10.0%	17.9%	10.0%	4.8%	3.1%	17.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Change in Household Distribution 1993-2001

Education Level	All Households	<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Less than High High School	-4.7%	-9.0%	-6.2%	-2.9%	-2.3%	-0.8%	-5.0%	-8.8%	-3.6%	-2.1%
High School Graduate	-2.2%	1.1%	-2.8%	-4.2%	-4.2%	-3.9%	-2.4%	-0.6%	0.3%	-3.8%
Some College/Assoc. Degree	3.3%	4.4%	5.1%	3.9%	1.2%	1.6%	3.5%	6.0%	1.3%	0.6%
Bachelor's Degree	2.9%	2.4%	3.1%	3.2%	3.5%	3.0%	3.1%	2.1%	1.9%	6.9%
Graduate Degree	0.7%	1.1%	0.8%	0.1%	1.8%	0.1%	0.8%	1.3%	0.2%	-1.6%
Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Authors' tabulations of the 1993 and 2001 Current Population Survey, March Demographic supplement.

3.4 Geographic Variations in Homeownership Rates and Gaps

In evaluating national homeownership rates, it is important to bear in mind that there are large variations in homeownership rates across market areas around the country. The variation in homeownership rates across markets reflects differences in both housing demand (such as differences in markets' demographic characteristics) and housing supply (such as differences in markets' land prices and regulatory environments including zoning and building codes). Since there are significant variations in the distributions of households by race/ethnicity and income across market areas, variations in homeownership rates by market area also play an important role in the overall differences in homeownership rates observed at the national level. The first part of this section presents information on the variation in homeownership rate by geographic location while the second part examines how homeownership rates vary by income and race/ethnicity by geographic location.

3.4.1 Geographic Variations in Homeownership Rates

Exhibit 3-17 illustrates how homeownership rates varied in 2001 by region and by metropolitan area status (i.e., central city, suburban, or non-metropolitan areas).[60] The top of this exhibit shows how homeownership rates vary by region. In general, homeownership rates are lower in the West and Northeast compared to the South and Midwest. The West has the lowest homeownership rate at 62.8 percent while the Midwest rate was more than 10 percentage points higher at 72.9 percent.[61] A recent analysis by Coulson (2000) suggests that the regional variation in homeownership rates is largely related to variations in housing prices, population density, and shares of the population residing in central cities. While Coulson found that demographic factors also contributed to regional homeownership variations, the effect of demographic differences was small compared to supply side factors, at least at the regional level.

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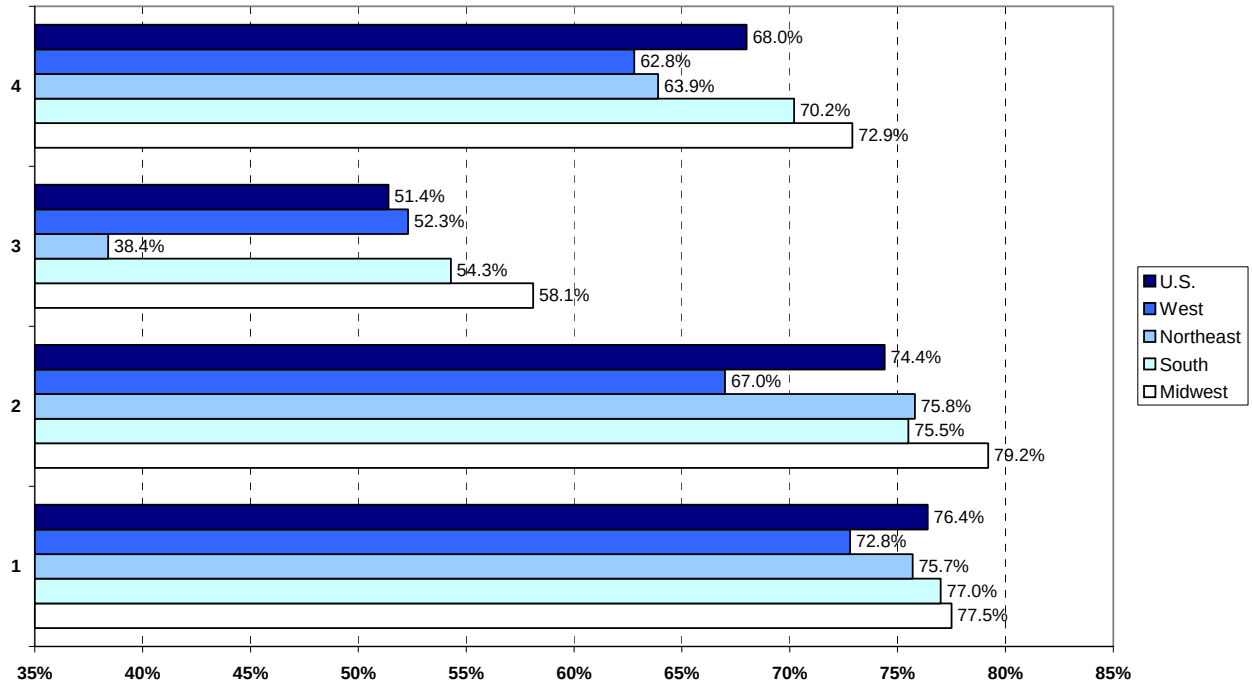
[60] A metropolitan area is a core area containing a large population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. The core is generally one or more central cities or counties. The largest city in each metropolitan area is designated a "central city." Additional cities qualify as central cities if specified requirements are met concerning population size and commuting patterns. Suburban areas are parts of a metropolitan area outside of the central city. Non-metropolitan areas are areas that are not considered part of any metropolitan area.

[61] The homeownership rates in this table do not correspond to those presented in earlier tables as the American Housing Survey (AHS) is used for these tabulations rather than the CPS. The use of the AHS was necessary for this geographic analysis since the CPS does not always identify the portion of the metropolitan area where survey participants live in order to protect the confidentiality of respondents. For example, in the March 2001 Demographic Supplement of the CPS, 14 percent of the observations did not identify whether the respondent lived in a central city, suburb or non-metro area.

Exhibit 3-17
Variation in Homeownership Rates by Geographic Area 2001



Source: Authors' tabulations of the 2001 American Housing Survey.

There are also significant differences in homeownership rates by metropolitan area status. As shown in Exhibit 3-17, central cities have much lower homeownership rates than either suburban or non-metropolitan areas. Across the country as a whole, the homeownership rate in central cities was 51.4 percent in 2001, compared to 74.4 percent in suburban areas and 76.4 percent in non-metropolitan areas. One reason for the low homeownership rate in central cities is the high density of housing in these core areas. As discussed in Chapter 2, since homeownership is more commonly associated with single-family housing, the relative dearth of single-family housing in central cities may limit homeownership opportunities in these areas. Low central city homeownership rates are evident in all regions, but are most pronounced in the Northeast where only 38.4 percent of central city households are homeowners. Suburban homeownership rates are fairly similar across regions, with the exception of the West where suburban homeownership is 8.5 percentage points lower than the next lowest region. The West also has somewhat lower homeownership rates in non-metropolitan areas than the other regions.

In addition to the variation across region and metropolitan area status, there is also significant variation in homeownership rates across individual metropolitan areas. Exhibit 3-18 presents summary information on homeownership rates across metropolitan areas as captured by the 2000 decennial census. Across the 331 metropolitan areas defined at the time of the census, homeownership rates averaged 66.9 percent. Most metropolitan areas had homeownership rates that did not deviate substantially from this average as half of all metropolitan areas had homeownership rates between 63.4 percent and 70.9 percent. However, there are some rather large differences at the

extremes of the homeownership rate distribution. Across all metropolitan areas, homeownership rates ranged from a low of 30.7 percent in Jersey City, NJ to a high of 83.7 percent in Punta Gorda, FL. In general, lower homeownership rates are found among larger, more densely populated metropolitan areas and areas dominated by universities and so by a younger, more mobile population. Areas with high homeownership rates tend to be areas with high shares of elderly households, suburban portions of the largest metropolitan areas, or small, low-density markets. Thus, while demographic factors do not explain regional variations in homeownership rates, they are important in explaining inter metropolitan area variations.

Exhibit 3-18
Variation in Homeownership Rates Across Metropolitan Areas in 2000

	Homeownership Rate (Pct)
Summary Statistics	
Average	66.9
First Quartile	63.4
Median	67.7
Third Quartile	70.9
Lowest 10 Homeownership Rates	
Jersey City, NJ	30.7
New York, NY	34.7
Bryan--College Station, TX	45.6
Los Angeles--Long Beach, CA	47.9
San Francisco, CA	49.0
Lawrence, KS	51.9
Yolo, CA	53.1
Bloomington, IN	54.0
Athens, GA	54.3
Honolulu, HI	54.6
Highest 10 Homeownership Rates	
Punta Gorda, FL	83.7
Nassau--Suffolk, NY	80.0
Ocala, FL	79.8
Barnstable--Yarmouth, MA	79.2
Fort Pierce--Port St. Lucie, FL	78.8
Monmouth--Ocean, NJ	78.7
Sarasota--Bradenton, FL	76.8
Houma, LA	76.7
Jackson, MI	76.5
Fort Myers--Cape Coral, FL	76.5

Source: U.S. Census Bureau, 2000 Decennial Census, Summary File 1.

An interesting aspect of metropolitan area homeownership rates is that they are fairly stable over time. In their analysis of the determinants of metropolitan area homeownership rates, Eilbott and Binkowski (1985) noted the stability of these rates between 1950 and 1970. In fact, the simple correlation of homeownership rates for 1990 and 2000 for 310 metropolitan areas in existence at both points in time is 0.95. This correlation is particularly high considering that the component towns and

counties of the metropolitan areas changed between 1990 and 2000. The consistency of homeownership rates over time reflects both consistency in demand factors (e.g., the continued character of areas as retirement or university towns over time) and supply factors (e.g., the durability of high density housing stock in older cities).

3.4.2 Geographic Variation in Homeownership Gaps by Income and Race/Ethnicity

The variation in homeownership rates across geographic areas is an important factor to consider in evaluating homeownership gaps by race/ethnicity and income, as there are strong patterns to the geographic distribution of households by race/ethnicity and income. The top panel of Exhibit 3-19 presents summary information on household distribution by geographic location in 2001. Lower-income households are generally over-represented in central city areas and under-represented in suburban areas, while the opposite holds for higher-income households. There is less variation evident in the location of households by income level in either non-metropolitan areas or by region.[62] While the low homeownership evident in central cities may in part be explained by the prevalence of low-income households in these areas, the causality may in part also go in the other direction—homeownership among low-income families may be constrained by supply side constraints in central cities.

There are even sharper variations in the geographic location of households by race and ethnicity. In terms of metropolitan area status, blacks are highly concentrated in central cities, with 53.5 percent of black households in these areas, compared to only 29.7 percent of all households and 22.9 percent of white households. This high concentration in central cities is offset by much lower representation in suburbs and non-metropolitan areas. Only 32.8 percent of black households live in suburban areas, compared to 48.3 percent of all households and 51.4 percent of white households. Thus, blacks are over-represented in areas with low homeownership rates and under-represented in areas with high homeownership rates, while the opposite is true for whites. Hispanics and Asians are also over-represented in central cities, with 47.8 and 44.2 percent of these groups, respectively, in these areas. However, both Hispanics and Asians have a substantial presence in suburban areas, with 42.5 percent of Hispanics and 53.0 percent of Asians in these areas. But both of these groups have only a small presence in non-metropolitan areas, where homeownership rates are high.

The bottom panel of Exhibit 3-19 shows how the distribution of households by geographic location changed between 1993 and 2001. The long-term trend toward suburbanization and the movement to the South and West are both evident in recent years. For almost all income levels and racial-ethnic groups, the share of households in central cities, the Northeast and Midwest declined, while the share in suburbs, the South and West increased. The shift of population to suburban areas and the South would be expected to help increase homeownership rates, although the movement away from the Midwest and toward the West would help dampen homeownership rates.

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[62] In part, this lack of variation is a result of measuring income as a percent of the relevant area median income. Since household income has a fairly similar distribution across regions and non-metropolitan areas, there is little variation in the share of households at different points in the income distribution (i.e., at 50 percent of the median, 80 percent of the median, etc.).

Exhibit 3-19
Household Distribution by Geographic Location, Income, and Race-Ethnicity

2001 Household Distribution

Geographic Location	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Central City	29.7%	36.2%	32.2%	29.3%	26.9%	23.2%	22.9%	53.5%	47.8%	44.2%
Suburb	48.3%	41.5%	46.5%	47.3%	52.8%	54.6%	51.4%	32.8%	42.5%	53.0%
Non-Metropolitan Area	22.0%	22.3%	21.3%	23.4%	20.2%	22.2%	25.7%	13.6%	9.7%	2.8%
Northeast	19.2%	20.4%	18.1%	18.1%	19.0%	18.9%	19.9%	17.7%	15.2%	18.7%
Midwest	23.3%	22.5%	24.3%	24.8%	24.2%	23.0%	26.6%	19.0%	7.6%	11.3%
South	35.8%	36.9%	34.9%	35.2%	32.9%	36.2%	33.5%	54.0%	36.7%	17.4%
West	21.7%	20.3%	22.7%	21.8%	23.9%	22.0%	20.0%	9.2%	40.4%	52.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Change in Household Distribution 1993-2001

Geographic Location	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Central City	-1.8%	-2.5%	0.0%	2.2%	-0.7%	-1.6%	-2.5%	-4.9%	-2.9%	-2.6%
Suburb	1.7%	2.2%	0.1%	-1.9%	2.2%	1.3%	1.6%	4.6%	2.5%	3.7%
Non-msa	0.0%	0.3%	-0.1%	-0.3%	-1.6%	0.3%	0.9%	0.3%	0.4%	-1.0%
Northeast	-0.8%	-0.5%	-1.7%	-1.0%	0.2%	-0.6%	-0.8%	0.2%	-1.9%	-0.2%
Midwest	-1.0%	-2.2%	-0.6%	0.0%	-1.7%	0.1%	-0.3%	-1.3%	0.5%	-0.1%
South	1.0%	1.9%	1.2%	0.2%	-1.3%	0.8%	0.7%	0.5%	3.5%	1.4%
West	0.8%	0.8%	1.1%	0.8%	2.8%	-0.3%	0.3%	0.6%	-2.1%	-1.2%
Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Authors' tabulations of the 1993 and 2001 American Housing Survey.

Exhibit 3-20 shows the geographic variation in homeownership by income and race/ethnicity. Virtually all income and racial-ethnic groups have lower homeownership rates in central city areas. The difference between suburban and central city homeownership rates is largest for the very low-income households at 24.5 percent, but even among the highest income households homeownership rates are 12.6 percentage points lower in central city areas. Thus, even for these relatively unconstrained households, homeownership is less likely in central city areas. Another indication of the importance of location in homeownership rates is that differences in homeownership rates by income are largest in central city areas. In central cities, very low-income households have homeownership rates that are 42.7 percentage points less than for the highest income households, while in suburban areas this difference is only 30.8 percentage points and in non-metropolitan areas it is only 27.2 percentage points.

In comparing homeownership rates by race and ethnicity across geographic areas by metropolitan status, whites have by far the highest homeownership rates in central cities at 61.1 percent. Nonetheless, the difference in homeownership rates between central city and suburban residents is fairly similar across racial-ethnic groups. The difference ranges from a low of 17.4 percentage points for blacks to a high of 21.0 percentage points for Asians. Thus, all racial-ethnic groups exhibit lower homeownership rates in central cities. The white-minority gaps in homeownership rates do not vary a great deal with metropolitan area status. Across all three racial-ethnic groups, the gap with white homeownership rates averages 21.5 percentage points in central cities, compared to 19.8 percentage points in suburban areas, and 18.6 percentage points in non-metropolitan areas.

When homeownership rates are compared across regions by income and race/ethnicity, the pattern for higher homeownership rates in the Midwest and South is evident for most groups. The differences in homeownership by income are fairly similar across regions, although they are slightly higher in the West. However, there are significant differences in the white-minority homeownership gaps by region. The Northeast has some of the largest gaps, with a white-black gap of 38.0 percentage points, a white-Hispanic gap of 46.7 percentage points, and a white-Asian gap of 24.4 percentage points. The Midwest also has fairly large gaps by race and ethnicity, averaging 27.1 percentage points across the three minority groups, while gaps tend to be smaller in the South (21.0 percentage points) and West (22.5 percentage points). The smallest white-black gap is in the South (23.3 percentage points), while the smallest white-Hispanic and white-Asian gaps are in the West (20.3 and 14.5 percentage points, respectively). The regional differences in white-minority homeownership gaps in part reflect differences in the concentration of minorities in central cities. For example, in the Northeast, where the gaps tend to be the largest, 72 percent of blacks and 66 percent of Hispanics live in central cities, compared to 21 percent of whites.

Considering both the distribution across regions and within metropolitan areas, if minority households were to be distributed across regions and metropolitan areas in the same way as white households, the black homeownership rate in 2001 would be 2.4 percentage points higher, the Hispanic rate would be 5.0 percentage points higher, and the Asian rate would be 4.0 percentage points higher.

Exhibit 3-20
Homeownership Rates by Geographic Location, Income, and Race-Ethnicity

2001 Homeownership Rates

Geographic Location	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Central City	51.4%	34.0%	45.1%	55.5%	62.5%	76.7%	61.1%	38.7%	37.6%	42.5%
Suburb	74.4%	58.5%	65.9%	70.7%	79.9%	89.3%	78.8%	56.1%	57.4%	63.5%
Non-Metropolitan Area	76.4%	63.9%	69.8%	75.6%	79.0%	91.1%	78.8%	63.0%	60.1%	57.6%
Northeast	63.9%	45.8%	56.3%	69.2%	71.5%	82.7%	72.8%	34.8%	26.2%	48.5%
Midwest	72.9%	53.8%	65.7%	73.5%	83.4%	91.6%	77.4%	47.8%	51.0%	52.1%
South	70.2%	56.0%	63.0%	67.0%	74.0%	87.5%	77.1%	53.8%	55.8%	58.7%
West	62.8%	43.4%	52.4%	59.5%	70.8%	84.1%	69.4%	36.9%	49.1%	54.9%
Total	68.0%	50.9%	60.0%	67.4%	75.0%	86.8%	74.8%	47.7%	48.2%	54.0%

Change in Homeownership Rates 1993-2001

Geographic Location	All Households	Income as Percent of Area Median Income					Race/Ethnicity			
		<50% (Very Low)	50-80% (Low)	80-100% (Low Mod)	100-120% (High Mod)	>120% (High)	White	Black	Hispanic	Asian
Central City	2.3%	2.5%	-1.6%	-1.8%	-1.2%	-0.7%	4.1%	2.0%	5.2%	2.5%
Suburb	3.1%	3.3%	0.3%	-0.6%	2.7%	0.9%	3.9%	6.4%	6.1%	0.6%
Non-Metropolitan Area	3.5%	5.5%	-0.4%	-1.2%	-0.5%	1.6%	3.9%	4.5%	4.3%	24.7%
Northeast	1.8%	1.5%	-2.3%	3.9%	1.2%	-2.7%	3.4%	-0.1%	7.3%	4.6%
Midwest	5.1%	5.8%	-0.1%	-1.0%	2.3%	2.6%	5.4%	6.6%	10.6%	7.5%
South	3.9%	5.3%	2.0%	-3.3%	0.9%	1.4%	4.8%	5.6%	4.7%	9.6%
West	2.1%	2.5%	-2.9%	-3.1%	1.0%	1.1%	3.4%	2.3%	4.2%	-0.6%
Total	3.3%	4.1%	-0.4%	-1.4%	1.1%	0.9%	4.4%	4.4%	6.0%	3.0%

Source: Authors' tabulations of the 1993 and 2001 American Housing Survey.

The bottom panel of Exhibit 3-20 shows the changes between 1993 and 2001 in homeownership rates by geographic location and by income and race/ethnicity. Homeownership rates increased in all geographic areas over this period. While increases were larger in suburban and non-metropolitan areas, central cities also experienced a sizeable gain of 2.3 percentage points. Across regions, the gains were largest in the Midwest (5.1 percentage points) and South (3.9 percentage points), but the Northeast and West also experienced gains of about 2 percentage points. These same patterns were evident across most income and racial-ethnic groups.

When both changes in homeownership rates and the distribution of households are considered, suburban areas are found to have contributed the most to rising homeownership during the 1990s. Suburban areas accounted for about 80 percent of the increase, with the remainder attributable to non-metropolitan areas. In regional terms, much of the gain in homeownership over this period can be attributed to the South due to the combination of rising rates and increasing household shares. The West also had a sizeable positive influence due to its gain in household share.

3.5 Homeownership Among Immigrants

Recent work on the homeownership attainment of immigrants finds that immigrant ownership rates are conditioned by three factors: household characteristics (or endowments) that also affect the ownership rates of native-born households such as income, age, household type, and educational attainment; temporal factors related to immigrants' membership in both a birth cohort and year-of-entry cohort which affect ownership attainment over time due to aging and assimilation effects; and endowment factors unique to immigrants including English-language ability and citizenship status. The discussion in this section covers only the second and third set of influences as the role of endowment factors more generally was covered in the previous section. This section begins by discussing the impact on homeownership of immigrants' "double cohort" membership—for both birth year and year of entry into the U.S.—that has dominated recent literature. The second part then examines the association between key immigrant characteristics and homeownership, including race, immigrant status, country of origin, English language ability, and citizenship status.

3.5.1 Differences in Homeownership by Age and Year of Entry

Given the substantial changes in the characteristics of the immigrant population over the last several decades, comparing the size of the immigrant-native ownership gap and its trajectory over time can be misleading, but it is nonetheless useful to begin with the most recent aggregate figures. The disparity between immigrant and native homeownership rates is currently just under 20 percentage points—based on 67.2 and 47.4 percent rates respectively (Borjas 2002). This differential is up substantially from 12 percentage points in 1980, and 14 percentage points in 1990, a product of a native ownership rate that has climbed steadily and a declining immigrant rate.[63]

[63] The 1980 and 1990 rates are based on Decennial Census data while the 2000 figures are from the CPS. An unknown but relatively minor portion of the 1990-2000 time trend consequently results from differences between the two data sets rather than from actual changes in the ownership rates over the period. The impact of this difference, while not particularly significant in the aggregate national rates, is likely of greater importance in the finer grain results presented later in this paper.

While many have noted the need to control for the differing endowments of different immigrant temporal cohorts and to adjust for the differential age structure between immigrants and the native born, Dowell Myers has taken the lead in explaining why comparisons without full controls for temporal effects are suspect (Myers (1996), Myers and Lee (1996 and 1998), Myers, Megbolugbe, and Lee (1998), Painter, Gabriel and Myers (2001)). He and his colleagues note first that all individuals (native- and foreign-born alike) enter the housing market at specific points in time and consequently embark on a lifetime homeownership trajectory that is based in part on individual characteristics and in part on membership in a particular housing market entry cohort. The importance of cohort membership lies in the fact that over time, housing markets change in ways that influence the likelihood that households will become owners. Consequently, households who first enter the housing market during a period when homeownership is relatively difficult to attain may not be able to match the same age-specific homeownership trajectories of earlier cohorts that entered the housing market during a period when homeownership attainment was easier.

For natives, housing market entry cohorts are determined principally by age as most individuals begin forming independent households in their 20s. For immigrants, however, housing market entry occurs at the time they enter the U.S., placing those that arrive after the typical age of housing market entry in different housing market entry cohorts from same-aged natives. Immigrants of different ages are also on different housing market trajectories owing to differing age-related propensities to experience standard lifecycle influences on homeownership such as marriage and childbearing. Immigrants are therefore located in a cohort associated with age at arrival into the U.S. and another with year of entry. Year of entry controls for assimilation effects related to movement into homeownership. The assimilation effects include such factors as becoming proficient in English, becoming knowledgeable about the operation of U.S. housing and mortgage markets, and adopting U.S. attitudes and preferences related to housing tenure (particularly for immigrants who come from cultures where renting is more common or use of mortgages is rare).

Given the period effects associated with cohort membership, using the double cohort method standardizes for the growth in homeownership rates that occurs over the life course as well as for the growth in ownership rates that immigrants experience as duration of residence (and consequently degree of assimilation) increase, while also capturing the period effects of birth-cohort membership. Because period effects alter the shape of the homeownership trajectory of different cohorts, cross-sectional comparisons of age confound the effect of aging on homeownership with the permanent differences between year of entry cohorts that are tracking on different trajectories (Myers and Lee 1998). Comparisons between native- and foreign-born ownership rates, and of foreign-born ownership rates at different time periods, must, therefore, account for immigrants' age and year-of-entry cohorts in order to separate aging effects from assimilation effects for different waves of immigrants (Myers, Megbolugbe and Lee 1998).

Exhibit 3-21 presents homeownership trends for immigrants by age group (birth cohort) and year of entry. The table shows that for a given year-of-entry cohort (reading across the rows), the years immediately following arrival are characterized by relatively low rates of ownership that substantially lag those of native-born households in the same age group. For example, 35-44 year-olds that entered the U.S. between 1975 and 1979 had ownership rates that were 43 percentage points below those of native-born households in the same age group in 1980. The table also indicates that subsequent progress for this age/arrival cohort was fairly rapid, however. By 1990, when these individuals had reached the ages of 45-54, the gap between the ownership rates of those who arrived in 1975-79 and

native-born households had closed to 18 percentage points. In fact, between 1980 and 1990, immigrants who had arrived during 1975-1979 increased their ownership rate by nearly 30 percentage points, while that of same-aged natives increased only 5 percentage points. Although the rates of both groups were higher in 1990 than a decade earlier due to aging-related ownership increases, immigrants received an additional boost as they entered a phase of their assimilation trajectory characterized by rapid movement into homeownership.

The table also shows that, though no immigrant group's age-at-entry adjusted ownership rates reaches that of the native-born over the time period examined in the table, those entering the U.S. at younger ages come closest to achieving parity with natives, replicating a finding by Myers, Megbolugbe, and Lee (1998) for Los Angeles County. The fact that immigrants entering the country at different ages have different rates of ascendancy to homeownership as they move through specific age ranges illustrates the importance of using age-of-entry cohorts in analyzing the lifetime homeownership attainment trajectories of immigrants entering at different points in their lives.

Exhibit 3-21 also highlights period differences among same-aged arrival cohorts after similar lengths of stay as more recent same-aged immigrant cohorts have lower ownership rates after the same length of stay than previous cohorts. For example, those aged 35-44 in 1980 that entered the U.S. during the 1970-1974 period had a 1980 homeownership rate of 46 percent. Immigrant households aged 5-44 years in 1990 who had entered from 1980-1984, had a lower homeownership rate of 39 percent. By 2000, 35-44 year old immigrants that entered between 1990 and 1994 had ownership rates of 34 percent. The fact that rates of ownership are lower for more recent cohorts likely reflects the fact that, over time, homeownership has become more difficult to achieve, as evidenced by the progressively lower homeownership rates of same-aged *native* cohorts aged 25-34 years in 1990 and 2000 than in 1980. Myers and Lee (1998) point out that aggregate immigrant homeownership rates have been relatively flat, as declines in homeownership among younger age groups have been balanced by increases in homeownership of older cohorts.

Borjas (2000:6) characterizes the information in Exhibit 3-21 as indicative of "a persistent decline in homeownership rates across successive immigrant cohorts, both in absolute terms and relative to the trends in homeownership observed in the native population." Myers and Lee (1998), however, contend that the declining ownership rates of successive immigrant cohorts are a result of the period effects of earlier immigrants entering housing markets characterized, among other things, by less affordable housing conditions than earlier cohorts faced.

Exhibit 3-21
Homeownership Rates Among Immigrants by Age and Year of Entry (Percent)

Arrival Period	Age Group	1980	1990	2000
Native	25-34 in 1980	49.8	67.0	76.8
	35-44 in 1980	71.0	76.2	80.8
	45-54 in 1980	76.9	80.4	
	25-34 in 1990		44.8	68.0
	25-34 in 2000			46.7
1970-1974	25-34 in 1980	31.9	58.4	70.9
	35-44 in 1980	46.1	65.4	72.3
	45-54 in 1980	46.6	61.6	
1975-1979	25-34 in 1980	16.5	53.1	68.3
	35-44 in 1980	28.2	58.0	62.7
	45-54 in 1980	30.4	54.8	
1980-1984	25-34 in 1990		34.4	48.1
	35-44 in 1990		38.9	56.8
	45-54 in 1990		42.6	47.8
1985-1989	25-34 in 1990		12.2	43.0
	35-44 in 1990		21.1	39.4
	45-54 in 1990		25.4	40.5
1990-1994	25-34 in 2000			22.3
	35-44 in 2000			33.7
	45-54 in 2000			38.2
1995-1999	25-34 in 2000			10.0
	35-44 in 2000			19.3
	45-54 in 2000			25.2

Source: 1980, 1990 PUMS, 1998-2000 CPS. Reproduced from Borjas (2002:5).

3.5.2 Differences in Homeownership by Key Immigrant Endowments

Comparing ownership rates of immigrants and native born, even controlling for temporal effects associated with age and length of stay, obscures differences in the homeownership attainment of immigrants by key household characteristics. Chapter 4 will review literature that examines homeownership rates controlling for the full range of household characteristics that affect the probability of homeownership. In this section we will discuss this literature with a specific focus on the impact of specific characteristics that are unique to immigrants. We begin by examining the impact of immigrant status generally on the probability of homeownership and then examine differences by country of origin, citizenship, and English-language ability.

Immigrant Status

Coulson (1999) notes that as of 1996, the uncontrolled ownership rates of white, Asian, Hispanic, and black immigrants were 56.6, 48.0, 36.1, and 35.1 percent, respectively. These levels are between 10

and 16 percentage points below those of native-born households in the same racial-ethnic groups, suggesting that immigrant status is an important influence on homeownership attainment of each group. Coulson estimates a series of probit models on a national household sample drawn from the CPS, testing for the impact of immigrant status while controlling for a variety of socioeconomic, demographic, and geographic factors on the likelihood of homeownership. The results of this analysis suggest that immigrant status does play an independent role in determining homeownership rates for both Asians and Hispanics. Painter, Gabriel, and Myers (2001) take issue with this conclusion, however. In a study limited to Los Angeles County, they find that when other factors are controlled for, immigrant status does indeed influence homeownership rates for Hispanics but does not do so for Asians. They attribute the differences between their findings and Coulson's to different methodological approaches. In an analysis of the determinants of homeownership rates of different Asian sub-groups in New York, Los Angeles, and San Francisco, Painter, Yang, and Yu (2002) also find that with appropriate controls homeownership rates of Asian immigrants as a whole do not differ from those of native-born whites. These findings amplify those of Myers and Lee (1998) who, examining Southern California, discovered that Asian and Hispanic immigrants have different homeownership trajectories. Looking at cohorts based on age and year-of-entry in 1980 and 1990, they found that Asian immigrants tended to move rapidly into ownership. Their ownership rates, in fact, exceeded those of native-born Asians soon after entry. For Hispanics, the movement into homeownership is initially less rapid. In the second decade after arrival, however, Hispanic immigrants' movement into homeownership is more rapid than that of native-born Hispanics passing through the same age range. In short, the literature suggests that immigrant status is associated with slower homeownership attainment for Hispanics but not for Asians. Differences between Hispanic and Asian ownership attainment may be a result of wealth differentials. Despite the fact that it has been shown to be central to homeownership attainment generally, wealth is not included in the models discussed in this section due to data limitations, though most do include education as a proxy for permanent income.

Country of Origin

Considering immigrant homeownership attainment separately by race and ethnicity still masks significant variation within racial/ethnic groups. Coulson and Kang (2001), for instance, note that ownership rates for five Asian subgroups (Japanese, Mainland Chinese, South Asians (India, Pakistan, Bangladesh), 'Dragons' (Korea, Singapore, Taiwan, Hong Kong), and Other Asians differ substantially (Exhibit 3-22) and that the differences are due (among other factors) to length-of-stay and housing market characteristics for each sub-group.

Exhibit 3-22
Homeownership Rates for Immigrants and Native-Born Asians
(Percent)

	Japanese	Mainland Chinese	South Asians	Dragons	Other
All Households	63	55	43	39	57
Immigrants	40	53	44	39	56
Native Born	82	68	27	29	61

Source: 1996-1999 Current Population Survey reproduced from Coulson and Kang (2001).

Painter, Yang, and Yu (2002) also look at heterogeneity in the homeownership experience of Asian households. In the three metropolitan areas they examine (New York, San Francisco, and Los Angeles), they find that Chinese consistently have the highest homeownership rates and Koreans and Other Asians the lowest. In their tenure-choice probit models for each of six Asian subgroups (Chinese, Filipino, Japanese, Korean, Asian Indian, Other), different factors have different weight in explaining the tenure choices. Immigrant status in particular varies across groups, having a large negative effect for "Other Asians" and increasing the likelihood of ownership for Chinese, but having no significant effect on the other four groups.[64]

Work by several authors considers additional differences in ownership achievement based on immigrants' country of origin more generally. This work shows European immigrants with high levels of ownership relative to others, but largely as a result of their earlier migration and hence high average age and duration of stay. McArdle (1995), focusing on immigrants to New Jersey[65] and looking at the top ten countries of origin for immigrants to the state, finds European immigrants more likely to own homes even controlling for temporal, socioeconomic, and demographic characteristics. As of 1990, those from Italy and Germany are most likely to own homes, followed by those from the United Kingdom, Poland and India, who are in turn somewhat more likely to own than Portuguese and Filipinos and substantially more likely to do so than Latin Americans.

Borjas (2002) also presents data on ownership rates by country of origin (Exhibit 3-23). Like McArdle (1995), his data are from the 1990 Census. His results show substantial variation across country of origin, with immigrants from the Dominican Republic having the lowest homeownership rates and those from Italy the highest. There are also substantial differences between different subgroups within broad region-of-origin classes, however, as the groupings in Exhibit 3-18 make clear. As discussed earlier, the gross differences shown in this table are somewhat misleading because there is no control for differences in year of entry or age structure across immigrant groups. The high rates of homeownership among Europeans relative to other groups, for instance, are largely due to the fact that most European immigrants are older and have spent substantially more time in the U.S. than immigrants from most other regions. The one European group characterized by more recent immigration, immigrants from the former Soviet Union, has an ownership rate more in keeping with that of other countries from which high shares of immigrants arrived fairly recently. To control for these differences across populations by country of origin, McArdle calculates the ownership rates of each country of origin after attributing to each group the same demographic and economic endowments as native whites. Her results suggest that the bulk of the homeownership gaps for the countries of origin with the lowest homeownership rates is a result of behavioral differences rather than differences in household characteristics. While McArdle's analysis does suffer from a lack of sufficient controls for many factors that are important to homeownership attainment (again, wealth being a notable example), her findings are suggestive that cultural differences reflecting different countries of origin may influence homeownership rates of immigrants.

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64 The authors report little difference between Chinese from the Mainland, Taiwan, Hong Kong, or other countries of origin.

65 New Jersey is one of the six states that have traditionally attracted the bulk of immigrants Along with California, New York, Texas, Florida, and Illinois.

Exhibit 3-23
Homeownership Rates for Immigrants by Country of Origin, 1990

Country of Origin	Homeownership Rate (%)	Country of Origin	Homeownership Rate (%)
Asia		**Europe**	
Philippines	60.9	Italy	78.8
India	58.3	Germany	70.5
China	56.5	Greece	70.2
Korea	43.8	United Kingdom	64.6
Vietnam	43.8	Poland	62.7
		Portugal	62.1
		USSR	50.2
Latin America		**Other**	
Cuba	52.0	Canada	67.9
Colombia	41.7	Iran	50.0
Mexico	38.4	Jamaica	46.7
El Salvador	17.3	Haiti	32.4
Dominican Rep.	14.2		

Source: U.S. Census Bureau, 1990 decennial census (reproduced from Borjas 2002).

Citizenship

Another factor that has been found to be important in immigrant homeownership attainment is citizenship status. Using the 1996 CPS, Masnick (1997) found that the overall share of foreign-born individuals living in owner occupied housing was 47 percent, but the ownership rate was only 36 percent for non-citizens and 70 percent for citizens.[66] Coulson (1999) also finds a positive impact for citizenship on homeownership in models controlling for the influence of other factors. Although the direction of causality between citizenship and homeownership is not clear, this differential is indicative of a potentially important difference in the ownership behavior of the two groups.

Masnick (1997) notes that because attaining both citizenship and homeownership are processes that take time and hence become more likely with residence in the U.S., citizenship is related to year of entry or assimilation effects. When year of entry is controlled for, the homeownership dominance of foreign-born citizens versus non-citizens declines, but a difference does persist. Exhibit 3-24 presents data from Masnick on homeownership rates controlling for both citizenship status and year of entry. The 35 percentage-point gap between foreign-born citizens and non-citizens of all ages, for instance, shrinks to 15 percentage points when only those arriving during 1970-1979 are considered. Controlling also for age further diminishes the gap, though citizenship status continues to be important. Among those ages 45-64 that arrived 1970-1979, for example, the gap between citizen and non-citizen shares is a somewhat smaller 13 percentage points.

Coulson and Kang (2001) also look at the role of citizenship in logit models of the probability of homeownership. They find that both immigrant status and citizenship status are statistically

[66] All of Masnick's results are based on the shares of individuals of varying types that live in owner-occupied housing, as opposed to the share of households that own homes.

significant when both are entered in their model. However, the effect of citizenship becomes fairly weak when years in the U.S. and immigrant status are also included.

Exhibit 3-24
Homeownership Rates Among Immigrants by Year of Arrival and Citizenship Status (Percent)

		Year of Arrival			
Age in 1996	**All Years**	**Pre-1970**	**1970-1979**	**1980-1989**	**1990-1996**
All Foreign-Born					
<25	29.8	-	48.5	38.7	20.9
25-44	50.1	71.9	63.5	44.9	22.9
45-64	64.0	78.6	68.5	52.1	33.7
65+	67.0	74.7	58.1	48.3	41.0
All Ages	**46.8**	***75.6***	***60.9***	***41.7***	***22.1***
Citizens					
<25	56.4	-	54.7	58.4	53.3
25-44	62.8	75.5	66.1	56.4	35.9
45-64	78.0	81.5	75.8	70.1	76.7
65+	76.6	78.9	65.7	58.5	65.0
All Ages	**70.3**	***79.4***	***68.7***	***59.7***	***48.6***
Non-Citizens					
<25	26.0	-	45.1	34.0	19.3
25-44	33.2	57.0	53.4	34.6	17.8
45-64	51.7	72.6	60.3	44.7	31.7
65+	51.2	60.3	52.8	44.3	38.6
All Ages	**35.6**	***65.8***	***54.2***	***36.3***	***20.7***

Source: 1996 CPS (reproduced from Masnick 1997).

English Language Ability

English language ability is hypothesized to improve the chances of homeownership both because of its association with greater long-term earnings potential and as a marker of cultural assimilation that, among other things, signals the ability to navigate the complicated homebuying process. The handful of studies that include English-language proficiency as an explanatory variable have focused primarily on Hispanics. These studies generally find, as expected, that the ability to speak English enhances the likelihood of homeownership.[67] Flippen (2001) estimates models separately for all Hispanics and for foreign-born Hispanics, in each case finding a large effect of English-language ability net of other factors. Krivo (1995) shows that household heads that speak Spanish at home are less likely to be owners.

Myers and Lee (1998) also find English proficiency affects Hispanic, as well as white homeownership attainment. Interestingly, however, it does not affect that of Asians. Myers and Lee also uncover an additional issue in the relationship between homeownership and English proficiency related to bilingualism. Households headed by Asian and Hispanic individuals that speak English

[67] An ethnographic study by Ratner (1996) shows, however, that even immigrants that do not speak English are often able to navigate the search process in their native language through real estate agents and other professionals that speak their own language.

outside the home and another language at home have greater chances of homeownership than those that speak only English.

3.6 First-time Buyers

An important part of the public policy goal of increasing the nation's homeownership rate and closing homeownership gaps by race and income is to improve the opportunities for current renters to become homeowners. As discussed in detail in the first part of this chapter, homeownership has risen fairly sharply since 1993. More importantly, the homeownership gains have been almost universally shared across all major demographic groups. Nonetheless, as discussed in Chapter 2, changes in homeownership rates can result from a variety of population dynamics. For example, a rise in homeownership may occur from a decline in the number of renter households even if the number of owner households does not change at all. In order to evaluate the extent to which former renters have contributed to the rise in homeownership, it is helpful to consider trends in the number and characteristics of first-time homebuyers. In this section of the report we present information from the AHS on first-time homebuyers during the 1990s to investigate how these households may have changed during the recent rise in homeownership rates. The AHS is the only systematic source of information on the number and characteristics of first-time homebuyers over time. However, since first-time buyers in a given year represent a relatively small fraction of all homeowners, sample sizes for this group can be fairly small. As a result, our analysis cannot examine individual racial-ethnic minorities, but instead will compare non-Hispanic whites with all minority households. In addition, since the AHS is only conducted every other year, we have combined data for the two most recent complete years covered by the survey both to boost sample sizes and to provide complete coverage for the period examined.

As shown in Exhibit 3-25, in keeping with the relatively sharp rise in the national homeownership rate, there has been a fairly substantial increase in the number of first-time homebuyers since the early 1990s. During the period 1989-1990 there were 3.1 million first-time homebuyers. Over the next ten years the number of first-time buyers rose steadily, reaching 4.2 million by 1999-2000. With a total of 22.5 million first-time homebuyers over this period, the contribution of this group to the national homeownership rate has been substantial.

Exhibit 3-25
Trends in Number of First-Time Homebuyers During the 1990s
(Homebuyer households in thousands)

	First-Time Homebuyers			All Homebuyers	
Period	Total	Minority	Minority Share	Total	First-Time Homebuyer Share
1989-1990	3,135	716	22.9%	8,862	35.4%
1991-1992	3,286	767	23.4%	9,440	34.8%
1993-1994	3,767	1,028	27.3%	10,123	37.2%
1995-1996	3,903	1,102	28.2%	9,912	39.4%
1997-1998	4,157	1,320	31.7%	10,499	39.6%
1999-2000	4,213	1,325	31.5%	10,580	39.8%

Source: Authors' tabulations of AHS from 1991, 1993, 1995, 1997, 1999, and 2000.

Equally important, minorities have come to account for a growing share of first-time homebuyers. In the 1989-1990 period minorities accounted for 22.9 percent of first-time homebuyers. This share increased steadily over the decade reaching 31.7 percent by 1997-1998 and then staying at the level for 1999-2000. In part, the rise in minority homebuyers is to be expected given the growing share of minority households in the U.S. But the increase in minority first-time buyers has greatly outpaced minority household growth. In 1991 minorities accounted for 21.0 percent of all households—very close to their share of first-time buyers. By 2001 minorities accounted for 25.6 percent of all households, which was more than 5 percentage points less than their share of first-time buyers.

Exhibit 3-26 compares the characteristics of first-time buyers with repeat homebuyers during 2000 and 2001. As would be expected, first-time buyers tend to have less income and are younger. Among first-time buyers 50.6 percent had income less than the area median compared to 37.1 percent of repeat buyers. There is relatively little difference in household type between these type of buyers, although first-time buyers are somewhat less likely to be married couples without children (22.3 versus 30.8 percent) and are more likely to consist of other families with children (13.1 versus 7.0 percent). First-time buyers are also more likely to live in central cities (27.3 versus 19.5 percent) and are less likely to purchase single-family detached housing (69.4 versus 76.9 percent). Somewhat surprisingly, there is not a very large difference in the share of first-time buyers purchasing manufactured housing—12.4 percent versus 10.6 percent for repeat buyers.

There are also significant differences between minority and white first-time buyers. White first-time buyers are more likely to be high income (40.4 versus 30.9 percent), under age 35 (69.6 versus 50.3 percent), and single persons (23.7 versus 10.7 percent). Interestingly, while minority first-time buyers are more likely than whites to buy homes in central cities (37.9 versus 22.7 percent), they are also slightly more likely than whites to purchase single-family detached housing (72.4 versus 68.1 percent).

One question of interest to policy makers is whether the homeownership rise of the 1990s was associated with changes in the characteristics of first-time buyers. To the extent that policies were successful in expanding homeownership opportunities, it would be expected that first-time buyers would include more households who have previously not been as likely to move into homeownership. Exhibit 3-27 presents information on trends in the characteristics of minority and white first-time buyers during the 1990s. Because of the relatively small number of first-time buyers captured in the AHS, for this table we have combined some of the categories shown in Exhibit 3-26 in order to provide more stable estimates of household shares. We have also shown the distribution of characteristics for a series of years rather than just the beginning and end of the period in order to evaluate the stability of any trends over time.

Exhibit 3-26
Distribution of First-Time and Repeat Homebuyer Households by Selected Characteristics (2000-2001)
(Percent of Homebuyers)

	All Homebuyers		Minority Homebuyers		White Homebuyers	
	First-Time	Repeat	First-Time	Repeat	First-Time	Repeat
Income as % of Area Median						
<50%	17.0	14.0	19.0	15.9	16.2	13.6
50-79.9%	19.4	14.1	21.0	17.7	18.7	13.4
80-99.9%	14.2	9.0	14.0	7.4	14.3	9.3
100-119.9%	11.8	9.0	15.1	9.5	10.4	8.9
120%+	37.5	53.9	30.9	49.5	40.4	54.7
Household Type						
Married without Children	22.3	30.8	15.9	23.4	25.0	32.3
Married with Children	32.4	33.3	45.6	36.8	26.7	32.6
Other Family with Children	13.1	7.0	16.4	10.1	11.6	6.4
Other Family without Children	4.4	5.5	7.4	10.7	3.1	4.5
Single Person	19.8	18.5	10.7	15.7	23.7	19.1
Other	8.0	4.8	3.9	3.4	9.8	5.1
Age						
<25	13.3	3.6	10.3	4.9	14.6	3.3
25-34	49.8	21.2	40.0	27.6	54.0	20.0
35-44	24.7	30.7	37.0	33.8	19.4	30.1
45-54	8.3	20.4	9.9	19.2	7.5	20.6
55-64	2.9	13.2	1.7	7.9	3.4	14.2
65+	1.1	10.9	1.2	6.6	1.1	11.8
Geographic Location						
Central City	27.3	19.5	37.9	33.2	22.7	16.9
Suburb	54.1	56.6	52.7	56.6	54.7	56.6
Non-metro Area	18.6	23.8	9.4	10.2	22.5	26.5
Structure Type						
Single Family Detached	69.4	76.9	72.4	80.2	68.1	76.2
Single Family Attached	5.6	3.2	7.0	4.5	4.9	2.9
Multi-family 2-4 Units	1.8	1.5	2.3	2.6	1.6	1.3
Multi-family 5+ Units	0.4	0.2	0.5	0.5	0.4	0.1
Manufactured Housing	12.4	10.6	8.6	5.0	14.1	11.7
Condominium	10.4	7.6	9.2	7.2	11.0	7.7

Note: Homebuyers include all those reporting they purchased their home in 2000 or 2001. Since the AHS was conducted from July through November of 2001, the data only covers a portion of 2001. Whites exclude Hispanics.
Source: Authors' tabulations of the 2001 AHS.

Exhibit 3-27
Trends in First-Time Homebuyer Characteristics During the 1990s
(Percent of First-Time Homebuyers)

	1991-92	1993-94	1995-96	1997-98	1999-00
Minority First-Time Buyers					
Income as % of Area Median					
<80%	50.7	51.1	47.3	43.5	42.4
80-119.9%	21.8	24.7	25.6	25.1	25.1
120%+	27.5	24.2	27.1	31.4	32.5
Family Type					
Married with Children	11.9	14.8	18.6	14.6	13.6
Married without Children	47.7	45.9	42.2	41.5	46.0
Other Families with Children	11.6	13.4	14.5	17.0	18.3
Single Person	15.3	13.1	15.2	13.2	10.3
Other	13.5	12.8	9.5	13.7	11.7
Age					
<35	42.2	44.2	44.9	44.4	46.6
35-44	35.9	34.3	34.4	35.1	36.6
45+	22.0	21.5	20.7	20.5	16.8
Geographic Location					
Central City	37.4	39.2	37.8	39.4	38.7
Suburb	51.4	46.9	43.5	46.8	52.4
Non-metropolitan Area	11.2	13.8	18.7	13.7	8.9
Structure Type					
Single Family Detached	69.5	69.7	66.3	71.3	68.5
Manufactured Housing	13.7	12.3	14.0	10.2	8.5
Single Family Attached & Multifamily	16.8	18.0	19.7	18.5	23.0
White First-Time Buyers					
Income as % of Area Median					
<80%	37.9	34.8	34.1	31.7	30.6
80-119.9%	27.9	28.6	29.2	26.7	24.8
120%+	34.2	36.6	36.8	41.6	44.6
Family Type					
Married with Children	28.3	25.3	26.0	25.9	24.3
Married without Children	36.7	36.8	35.7	34.8	32.7
Other Families with Children	7.5	7.0	7.9	8.3	9.9
Single Person	17.1	18.5	17.6	20.2	20.6
Other	10.4	12.4	12.8	10.8	12.6
Age					
<35	65.6	67.1	65.7	62.4	66.0
35-44	20.8	23.7	22.8	25.7	21.6
45+	13.6	9.3	11.5	11.9	12.4
Geographic Location					
Central City	23.5	23.3	24.9	24.1	22.7
Suburb	54.1	54.3	51.2	51.6	55.7
Non-metropolitan Area	22.4	22.4	23.9	24.3	21.6
Structure Type					
Single Family Detached	73.1	73.1	69.5	72.8	70.6
Manufactured Housing	12.6	12.7	15.2	14.4	13.2
Single Family Attached & Multifamily	14.3	14.1	15.3	12.7	16.1

Source: Authors' tabulations of AHS from 1993, 1995, 1997, 1999, and 2000.

Among minority first-time buyers, one of the more pronounced changes has been for buyers to include a decreasing share of low-income households (income less than 80 percent of AMI). At the beginning of the period 50.7 percent of minority first-time buyers were low-income households. This share declined fairly steadily over the decade to 42.4 percent by 1999-2000. While in part this decline was associated with an increase in moderate-income (between 80 and 120 percent of AMI) households, it also reflects a sizeable increase in the share of high-income (above 120 percent of AMI) households. Thus, based on the first-time buyer characteristics, it appears that the rise in minority homeownership has been more pronounced among moderate- and high-income households. Interestingly, a similar trend was evident among white first-time buyers as well. In 1991-1992 37.9 percent of white buyers had low-incomes. By 1999-2000 this share had dropped to 30.6 percent. Among whites there was also a decline in moderate-income buyers, so the share of high-income buyers increased by 10.4 percentage points, from 34.2 to 44.6 percent. Thus, there was a fairly consistent trend during the 1990s for first-time buyers to have higher incomes.

Another fairly consistent trend among minorities was for a higher share of other families with children among first-time buyers. At the beginning of the 1990s, 11.6 percent of minority first-time buyers consisted of this household type, but by the end of the decade this share had risen to 18.3 percent. Given the fairly large share of minority family households headed by single persons, the increase in these households among first-time buyers is a potentially important development. Nor was this change in the share of first-time buyers driven by an increase generally in this type of household, as overall other families with children came to account for fewer minority households over the decade. While whites also experienced an increase in the share of other families with children among first-time buyers, the increase was much smaller (7.5 to 9.9 percent). However, whites also experienced slight increases in the share of single-person and other households, indicating that homeownership was becoming more common for households other than married couples. Again, while these households were becoming more prevalent among whites, the growth among first-time buyers exceeded their overall growth over the decade.

There was also slight growth in the share of households under age 35 among minority first-time buyers. The share of households under 35 increased from 42.2 percent in 1989-1990 to 46.6 percent in 1999-2000. This increase came at the expense of households age 45 and older. Since the financial benefits of homeownership will be greater for households who achieve ownership at a younger age, this shift to younger first-time buyers is important. Notably, there was no evidence of any change in the age distribution of white first-time buyers. Also, despite the increase in young buyers among minorities, whites still tend to purchase homes at much younger ages than minorities. Two-thirds of whites are under age 35 when they purchase their first home, compared to less than half of minorities.

There was no noticeable trend in the share of first-time buyers by geographic location among either minorities or whites over the decade. Among minorities there was shift in the types of structures purchased away from manufactured housing toward single-family attached and multifamily housing (including condominiums). In contrast, among whites during this period there was some indication that single-family attached houses declined as a percentage of purchases, with a slight rise in manufactured housing and other types of housing.

3.7 Homeownership Projections

The demographic structure of the population is set to evolve over the coming decades in ways that will influence homeownership rates and gaps. The first key change will be the overall aging of the population, led primarily by whites. Because homeownership rates peak in older age classes, this trend will help to increase white ownership rates over the period. The second key change will be the increasing representation of minorities among younger-aged households resulting from high levels of immigration both in recent decades and in the years to come. Both ongoing immigration and substantial household formations in the younger age classes where renting is relatively common will dampen minority homeownership rates, even as the number of minority homeowners increases substantially. This section briefly examines expected trends in household formation before moving to a discussion of tenure projections

3.7.1 Household Projections

Two recent studies present household projections for the period 2000 to 2020, predicting similar changes in the number of net new households formed between 2000 and 2020 (23.8 versus 23.9 million) (Masnick and Di 2002, Farnsworth Riche 2001).[68] Given the consistency of these forecasts, the discussion here relies on the Masnick and Di (2002) estimates since this study also provides projections of tenure trends over time while Farnsworth Riche does not. Masnick and Di (2002) are also more consistent with literature on homeownership rates and gaps in discussing *non-Hispanic* whites, blacks, and Asians/Others, as opposed to including Hispanics in white, black, and Asian/Other categories as Farnsworth Riche does. Finally, the method used to generate the Masnick and Di projections has been described extensively (cf. Masnick and Di, 2000) while the Farnsworth Riche report does not discuss the projection methodology employed.

Masnick and Di's (2002) household projections use 1993 to1998 cohort trends in family and non-family headship rates applied to estimated 1995 headship rates.[69] These are then multiplied by population projections for each racial/ethnic group in five-year age classes.[70] Masnick and Di dampen the cohort trending progressively as they get farther from the initial period to avoid propagating trends from the baseline period indefinitely. The result is a forecast, at five-year intervals

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[68] It is not possible to directly compare disaggregated results because Masnick and Di (2002) separate out Hispanics while Farnsworth Riche (2001) does not. Comparing groups besides whites should, however, yield similar results because Hispanics are a relatively large share only of the white population. Masnick and Di project household growth of 37, 76, and 80 percent for non-Hispanic blacks, non-Hispanic Asians/others, and Hispanics while Farnsworth Riche projects almost identical growth of 39, 75, and 80 percent for blacks, Asians/Others, and Hispanics, indicating that results of the two studies are generally consistent.

[69] 1993 and 1998 levels are actually averages of 1992-1994 and 1997-1999 data. The 1995 mid-decade estimated rate is the average of 1991-1999 March CPS rates for the headship rate numerator and Census Bureau annual population estimates for the denominator.

[70] As discussed in Chapter Two, the headship rate indicates the share of the population that heads a household. For example, in a population of two 35-year olds, if they join together in a household one would be assigned the role of household head and the headship rate would be 50 percent—one head out of a population of two.

from 2000 to 2020, of the number of family and non-family households by race/ethnicity. With headship rates calculated separately for families and non-families within each racial/ethnic group, differences in the tendency to form families influences homeownership rates because of the higher propensity of family households to own homes.

Perhaps the most outstanding trend over the next two decades is the aging of households. Farnsworth-Riche (2001) points out that, more than ever before, the age distribution of households in 2020 will resemble a 'column,' with roughly equal numbers of people in each age group, as opposed to the historical 'pyramid' shape, with more young than middle-aged residents, and more middle-aged than elderly. This change is evident in the data presented in Exhibit 3-28 presenting the household projections from Masnick and Di. Each ten-year age bracket between 25 and 74 will contain roughly equal numbers of households in 2020, a marked contrast to 2000 when age distribution still displayed the pyramid shape. The number of post-retirement age households will be 52 percent higher in 2020 than in 2000, as this group increases from 21 to 26 percent of all households.

Exhibit 3-28
Projected Change in the Number of Owner and Total Households by Race and Age

Age Group	White		Black		Hisp		Asian/Other		Total		*Minority Total*	
2000	**Owners**	**Total**	**Owners**	**Total**	**Owners**	**Total**	**Owners**	**Total**	**Owners**	**Total**	***Owners***	***Total***
15-24	723	3,759	84	913	85	817	29	264	922	5,753	*199*	*1,994*
25-34	6,551	12,454	657	2,629	714	2,305	273	905	8,195	18,293	*1,644*	*5,840*
35-44	13,114	17,785	1,482	3,302	1,185	2,587	601	1,069	16,381	24,743	*3,267*	*6,958*
45-54	12,686	15,716	1,456	2,494	912	1,613	558	839	15,611	20,661	*2,926*	*4,946*
55-64	9,144	10,762	917	1,518	587	941	352	481	11,000	13,702	*1,857*	*2,941*
65-74	8,009	9,263	737	1,084	430	673	196	289	9,371	11,309	*1,362*	*2,046*
75+	7,698	9,662	531	757	260	443	124	206	8,614	11,069	*915*	*1,406*
Total	57,924	79,400	5,864	12,697	4,173	9,380	2,134	4,053	70,094	105,531	*12,170*	*26,131*
2020												
15-24	716	3,717	90	985	139	1,326	48	434	993	6,462	*277*	*2,745*
25-34	6,682	12,581	852	3,258	1,112	3,487	401	1,349	9,048	20,674	*2,365*	*8,094*
35-44	10,878	14,012	1,776	3,449	1,933	3,699	866	1,543	15,453	22,703	*4,575*	*8,691*
45-54	12,030	13,814	2,163	3,179	1,968	3,088	968	1,409	17,129	21,491	*5,099*	*7,676*
55-64	15,472	17,100	2,172	3,200	1,749	2,562	889	1,139	20,282	24,001	*4,810*	*6,901*
65-74	13,657	14,840	1,591	2,163	1,168	1,641	565	738	16,982	19,381	*3,325*	*4,541*
75+	10,360	11,829	954	1,175	727	1,084	405	533	12,446	14,622	*2,086*	*2,793*
Total	69,795	87,893	9,600	17,409	8,796	16,887	4,142	7,146	92,332	129,334	*22,538*	*41,441*
Change 2000-2020												
15-24	-7	-42	6	71	53	509	19	170	72	709	*78*	*751*
25-34	132	127	195	629	397	1,182	129	444	853	2,381	*721*	*2,254*
35-44	-2,236	-3,773	294	147	749	1,112	264	474	(928)	(2,040)	*1,307*	*1,733*
45-54	-656	-1,901	708	686	1,056	1,475	410	570	1,518	829	*2,174*	*2,730*
55-64	6,328	6,338	1,255	1,681	1,162	1,621	536	658	9,281	10,298	*2,953*	*3,960*
65-74	5,649	5,576	855	1,079	739	968	369	449	7,611	8,072	*1,963*	*2,496*
75+	2,661	2,167	423	418	467	641	281	327	3,832	3,554	*1,171*	*1,386*
Total	11,871	8,493	3,736	4,712	4,623	7,506	2,008	3,092	22,238	23,803	*10,368*	*15,310*

Note: Hispanics may be of any race. White, black, and Asian/Other are non-Hispanic.
Source: Masnick and Di (2002).

While general aging of the population suggests an increasing homeownership rate, Exhibit 3-28 also makes clear that the aging trend is concentrated in the white population. By 2020, 30 percent of

white households will be 65 and older, but only 18 percent of minority households will be. Because it is at the oldest ages that households achieve peak homeownership rates, the older age structure of the white population will be an important driver of homeownership gaps in the future, as discussed later in this section.

The other key trend over the period is the increasing minority share of households, which is projected to rise from 22 to 32 percent of all households, including 17 to 24 percent of owners, and 39 to 51 percent of renters. Overall, Masnick and Di (2002) project that whites will form relatively few (8.5 million) net new households between 2000 and 2020, an 11 percent increase. In contrast, the number of minority households will rise a collective 15.3 million, representing 37, 76, and 80 percent increases in the number of black, Asian/Other and Hispanic households. Among other reasons, the racial/ethnic differences are a result of the fact that the loss of households due to aging (or dissolution) will be concentrated in the white population – few minority households will dissolve between 2000 and 2020. In fact, fully 87 percent of the current 11.1 million households aged 75 and over are white. In contrast, minorities, with younger age structures, will experience relatively few age-based household dissolutions, and relatively many household formations. Minority formations will receive an additional boost from immigration, which will account for 6.9 million new households between 2000 and 2020 (Masnick and Di 2002).[71]

3.7.2 Homeownership Forecasts

Predicting the tenure status of households twenty years in the future, even assuming sound household projections, is challenging, and results should consequently be interpreted with caution. Masnick and McArdle (1993), for instance, quite accurately predicted that there would be 105.0 million households in 2000. HUD (1994) then used the AHS to estimate that 68.2 million of these households would own homes, a homeownership rate of 65.0 percent. While different sources disagree on the exact homeownership rate in 2000, it is widely thought to be substantially higher.[72] For this reason, Masnick and Di (2002), who make tenure projections for 2020, conduct a sensitivity analysis, generating a low and high series to complement their estimate of what they view as the most likely outcome.

Masnick and Di (2002) is the only source of which we are aware that provides homeownership projections for the 2000 to 2020 period. The homeownership projections are based on family and non-family household projections by race and ethnicity and rates of net transition from owner to renter status for five-year age cohorts under high, low, and middle ownership trend scenarios. The low series is based on the rate of transitions to homeownership during the 1990-1995 period, during which homeownership growth was relatively muted. The high series is based on transitions during

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[71] This estimate is based on the Census Bureau's most likely immigration scenario of a gradual decline in annual immigrants from 1 million to 750,000 annually between 2000 and 2010, where it remains until 2020. The authors note that even substantial changes in the flow of immigrants from a low series based on a decline to 500,000 in 2010, to a high series where immigration remains at 1million annually do not significantly alter the number of households formed over the period. The low estimate results in total household formation of 22.2 million and the high estimate in 25.4 million formations, compared with the baseline projection of 23.8 million.

[72] The homeownership rate in the 2000 Census is 66.2 percent while the 2000 Housing and Vacancy Survey estimates a higher 67.4 percent.

the 1993-1998 period when homeownership growth was rapid and pronounced. They generate their middle series by averaging the high and low series transition rates.

In evaluating the likelihood that the various scenarios they consider will actually occur, Masnick and Di (2002) note that all groups have tracked on their high homeownership trajectories since 1998. Nonetheless, they point out that remaining on this trajectory will require favorable macroeconomic and housing market conditions. While there have been short periods of similarly robust owner growth in the past, maintaining the current pace for the next two decades would be unprecedented. A shift to a higher interest rate regime or a severe economic recession could push rates down to their low series trajectory. Masnick and Di (2002) also point out that, historically, recessions and other shocks have tended to affect ownership rates of minorities most, meaning that a substantial change in the economic environment could jeopardize even the gains enjoyed over the 1990s homeownership boom.

In short, there are three key factors that affect Masnick and Di's projected homeownership rates, each of which introduces progressively more uncertainty into the projected results. The first factor, and the one least likely to vary, is the aging of the population. While all groups are experiencing rapid growth in older households, whites are experiencing relatively slower growth in younger households and so will experience a greater increase in the share of older households than minorities. As a result, the aging of the population will increase white ownership rates by a greater degree than minorities. The second key factor is the projected number of family and non-family households. Masnick and Di assume that cohort trends for the 1993-1998 period, progressively dampened at five-year intervals, will persist. But because changes in propensities to form families (or the headship rate) are somewhat more difficult to predict, and because they do not offer alternate headship rate scenarios, this factor is a source of additional uncertainty in their projected results. The third factor, and the one that is most difficult to predict is the future trend in net owner to renter transitions for age and racial-ethnic groups. Since minority homeownership generally lost ground relative to whites between 1990 and 1995, the low scenario will tend to predict that the homeownership gap will increase. In contrast, since minorities made more rapid gains than whites in homeownership between 1993 and 1998, the high series assumption is that these gains will continue for a twenty-year period, resulting in a fairly sizeable reduction in racial homeownership gaps.

Based on Masnick and Di's middle scenario, homeownership rates are projected to be much higher for each racial and ethnic group in 2020 than they are today, but gaps by race and ethnicity do not differ markedly from today's levels. Exhibit 3-29 shows that each group's ownership rate will be more than 5 percentage points higher in 2020 than in 2000. The black rate rises most, fully 9.0 percentage points, while that of Hispanics, whites, and Asians are up 7.6, 6.5, and 5.3 percentage points respectively. Because black and Hispanic rates rise more rapidly than those for whites, their ownership gap with whites is projected to narrow by 2.5 and 1.1 percentage points, respectively. Asians' homeownership rate is projected to rise more slowly than whites, largely because recent immigrants will remain a larger share of Asian households than of any other group.

Exhibit 3-29
Projected Homeownership Rates and Gaps by Race and Ethnicity

	2000		2020		2000 to 2020	
	Ownership Rate (percent)	**Gap with Whites** (percentage points)	**Ownership Rate** (percent)	**Gap with Whites 2020** (percentage points)	**Rate Change** (percentage points)	**Gap Change** (percentage points)
Non-Hispanic White	73.0	-	79.4	-	6.5	-
Non-Hispanic Black	46.2	26.8	55.1	24.3	9.0	-2.5
Non-Hispanic Asian/Other	52.7	20.3	58.0	21.4	5.3	1.1
Hispanic	44.5	28.5	52.1	27.3	7.6	-1.1
Total	66.4	6.5	71.4	8.0	5.0	1.5
Minority Total	*46.6*	*26.4*	*54.4*	*25.0*	7.8	-1.4

Note: Projections shown are from Masnick and Di middle series.
Source: Masnick and Di (2002).

Under the low and high series, not only do projected homeownership rates differ but gaps do as well (Exhibit 3-30). Because the middle series is an average of the high and the low, all low series results are lower than the middle series by the same amount that the high series exceeds it. For whites this difference is smallest, though still substantial, at 2.8 percentage points. For blacks, Asians/Others, and Hispanics the differences from the middle series are 5.0, 5.9, and 8.5 percentage points, respectively.

Exhibit 3-30
Homeownership Rates and Gaps in 2020 Under Alternative Projection Scenarios

	Low		Middle		High	
	Ownership Rate (percent)	**Gap with Whites** (percentage points)	**Ownership Rate** (percent)	**Gap with Whites** (percentage points)	**Ownership Rate** (percent)	**Gap with Whites** (percentage points)
Non-Hispanic White	76.6	-	79.4	-	82.2	-
Non-Hispanic Blcak	49.1	27.5	55.1	24.3	61.1	21.1
Non-Hispanic Asian/Other	52.1	24.5	58.0	21.4	63.8	18.4
Hispanic	43.6	33.0	52.1	27.3	60.6	21.6
Total	67.2	9.4	71.4	8.0	75.6	6.6

Note: Because data for 2000 are projected, low series estimates for some groups can be below 2000 levels in Exhibit 3-29. This does not imply a decline in the homeownership rate since low series projections for 2000 are lower than those for the 2000 middle series as well as for the low series 2020 rate.
Source: Masnick and Di (2002).

Of course, absent a clear understanding of the factors that caused the rise in homeownership rates in the 1990s, it is difficult to forecast the likely path of homeownership rates in the future. The forecasts by Masnick and Di provide an indication of the range of likely changes in homeownership rates assuming that we either revert to the relatively modest gains of the early 1990s (the low scenario) or maintain the pace of gains made after 1993 (the high scenario). A key difference between these periods is that minorities made little gain in homeownership prior to 1993 but made rapid gains after 1993. As a result, there are large differences in projected changes in homeownership gaps between these two projection series. Under the low series, only blacks will close the gap with whites, and do

so by a mere 0.2 percentage points, while the Asians/Others and Hispanic gaps will each grow 2.5 points. In contrast, under their high scenario—where the rapid gains in homeownership made in recent years are sustained for another twenty years—homeownership gaps relative to whites will shrink by 4.5 percentage points for blacks, 5.6 percentage points for Hispanics, and 1.4 percentage points for Asians. These gains in homeownership rates would be impressive, but since whites are also expected to experience significant increases in homeownership large gaps between the homeownership rates of whites and minorities would nonetheless remain—21.1 percentage points for blacks, 21.6 percentage points for Hispanics, and 18.4 percentage points for Asians. But while the gaps remain large, homeownership rates for each minority group would exceed 60 percent—rates almost unimaginable at the beginning of the 1990s.

The projections by Masnick and Di may provide policy makers with a baseline against which they can evaluate potential goals for increasing homeownership. In order to achieve gains similar to those under the high scenario, the recent pace of gains must be maintained. Further gains may be possible if factors underlying Masnick and Di's forecast are improved. For example, some of the homeownership gap between whites and minorities can be explained by income differences. If macroeconomic conditions and public policy can reduce income disparities at a rate that exceeds recent gains, further gains in minority homeownership may be possible.

3.8 Chapter Summary

There are strong similarities in long-run trends in homeownership rates by race and ethnicity indicating that broad demographic, economic, and public policy factors are important in homeownership trends among all groups. As a result, while minorities have made important gains in homeownership in recent years, these gains have not necessarily been reflected in reductions in homeownership gaps with whites. For example, during the 1990s all racial and ethnic groups experienced rising homeownership rates. Based on the decennial censuses of 1990 and 2000, homeownership increased by 3.3 percentage points among whites, 2.4 percentage points among blacks, 3.0 percentage points among Hispanics, and 2.2 percentage points among Asians. These gains were particularly notable as they came on the heels of flat or declining homeownership rates during the 1980s. But since white households experienced the largest increase in homeownership, white-minority homeownership gaps all increased over the decade.

Annual data from the Current Population Survey (CPS) present a more sanguine view of changes in homeownership rates, both in terms of how much homeownership has increased and how these increases have helped to close white-minority homeownership gaps. According to CPS data, black and Hispanic homeownership rates increased more sharply than white rates beginning in 1993. As a result, the CPS finds that between 1993 through 2001 the white-black homeownership gap fell by 2.3 percentage points, while the white-Hispanic gap fell by 3.8 percentage points. However, since 2001 these gaps have once again widened as whites have experienced larger increases in homeownership. The white-Asian homeownership gap, however, has actually increased since 1993 , as increases in the Asian homeownership rate did not keep pace with gains among whites. But even with the more sanguine trends from the CPS, the sizes of white-minority homeownership gaps remain high by historical standards. As of 2003 the homeownership rate among whites was 26.6 percentage points higher than the black rate, 28.7 percentage points higher than the Hispanic rate, and 19.1 percentage

points higher than the Asian rate. In comparison, in 1980 these gaps were 23.2, 25.1, and 16.5 percentage points, respectively.

There are also large differences in homeownership rates by household income. As of 2003, 51.2 percent of very low-income households (those with income below 50 percent of the relevant area median income or AMI) owned their homes, compared to 86.6 percent of high-income households (those with income at or above 120 percent of AMI). Thus, the homeownership gap between these groups was 35.4 percent. While there are a number of valid reasons why homeownership should be lower among low-income households—including the financial risks of homeownership and the high transaction costs of buying and selling homes—the size of this gap is still a cause for concern to the extent that low-income households who would prefer to own are unable to realize this goal. In fact, over the period from 1970 to 1986, very low-income households experienced declines in homeownership rates while high-income households experienced increases. As a result, over this period the homeownership gap between these groups increased from 30.1 to 38.5 percentage points. The 1990s represented an important reversal in this trend as homeownership increased more rapidly among very low-income households. While this reversal in trends is important, the 2003 gap of 35.4 percentage points is still much higher than the 30.1 percentage point gap by income from 1970.

Differences in homeownership rates by income are an important factor in homeownership differences by race and ethnicity. Compared to whites, both blacks and Hispanics have much lower incomes, although Asians actually have higher incomes. But while differences in household income levels contribute to homeownership gaps for blacks and Hispanics, homeownership gaps remain for all racial and ethnic minorities even when comparing households of similar income levels. White-minority homeownership gaps are largest for very low-income households, ranging from 20 to 25 percentage points, but even among high-income households the white-minority gap is 10 to 15 percentage points. During the 1990s homeownership gaps narrowed most for low- and moderate-income black households, while among Hispanics gains were concentrated among households with income above area median. In addition to closing gaps by incomes, relative increases in minority income levels also helped to lower the white-minority homeownership differences. Blacks and Hispanics both saw the share of households with income below 50 percent of AMI decline by about 5 percentage points, while among whites this group grew by 1.3 percentage points. Among Asians there was a sizeable increase in households with incomes above the area median.

In addition to income, there are also significant differences between whites and minorities in demographic characteristics and geographic location that contribute to the overall differences in homeownership rates. Among key demographic characteristics that play an important role in homeownership rates are age, household type, and education level. Homeownership is higher for older households, married couples, and those with higher levels of education, and lower for younger households, other families with children (largely single-parent families), single persons, and those with low levels of education. Of course, these factors are interrelated as income is strongly associated with all of these demographic characteristics: income rises with age, is higher for married couple families, and increases with education level.

Relatively low homeownership rates among blacks and Hispanics are in part attributable to the fact that compared to whites they are generally younger and have lower education levels. Blacks also have fewer married couple households and both blacks and Hispanics have more single-parent families than whites, which also contributes to the observed homeownership gaps. Asians, on the

other hand, have household characteristics that are associated with higher homeownership rates. In addition to having income levels that are higher than whites, Asians also have a greater preponderance of married couple households and higher education levels. The one aspect that serves to depress Asian homeownership rates relative to whites is age, as Asians are much younger on average than whites.

The geographic distribution of the minority population also contributes to observed homeownership gaps. Central cities have homeownership rates that were 23.0 percentage points lower than suburban areas in 2001. While in part this lower homeownership rate reflects the high concentration of low-income households in cities, but as shown in Chapter 2, even high-income households have much lower homeownership rates in cities. Since minorities are much more concentrated in central cities than whites, differences in the geographic location of whites and minorities also contribute to observed homeownership gaps. In addition to differences in concentration in central cities, minorities also have very different regional distributions. Hispanics and Asians are both over-represented in the West and under-represented in the Midwest. Since homeownership rates are lowest in the West and highest in the Midwest, the difference in homeownership rates between whites, Hispanics, and Asians is in part due to differences in regional distribution of these populations. Blacks, on the other hand, are heavily concentrated in the South, a region that has fairly high homeownership rates. Thus, for blacks, their regional distribution actually helps to mitigate white-black homeownership differences.

Another important factor to consider in comparing white and minority homeownership rates is that the Hispanic and Asian population includes a large number of first-generation immigrants to the U.S. A variety of studies have examined homeownership among immigrants and find that factors such as the length of time living in the U.S., English-language ability, and citizenship status all play a role in predicting whether immigrants will be homeowners. Immigrants have been found to move slowly into homeownership following entry into this country, but over time many groups move quickly into homeownership and substantially close homeownership gaps with native-born households. Among Asians in particular much, if not all, of the observed difference in homeownership gaps with whites can be attributed to the immigrant status of these households. The white-Hispanic gap also is much smaller once immigrant factors are taken into account, although for Hispanics a non-trivial homeownership gap still remains.

In sum, while there are substantial differences between whites and minorities in a number of the important determinants of homeownership, none of these factors alone can account for much of the total observed white-minority homeownership gaps. For blacks, the two single biggest factors to account for the difference in homeownership rates compared to whites are lower incomes and fewer married couple households, both of which individually account for about 8 percentage points of the gap. Black-white age differences account for about a 5 percentage-point difference, while differences in education levels and geographic location are each associated with about a 2 percentage point difference. Among Hispanics, differences in income, age, education levels, and geographic location are all fairly significant, accounting for 5 to 7 percentage points of the difference from the white homeownership rate. For Asians, differences in age and geographic location each contribute about 4 percentage points to observed differences from white homeownership rates, while higher Asian incomes, shares of married couple households, and education levels all favor higher homeownership compared to whites. However, it is very important to note that these estimates of the contribution of individual characteristics to the overall white-minority homeownership gaps do not control for the correlation among these factors. For example, since income and household type are strongly

correlated, the combined impact of these two factors will be less than the sum of the estimated individual impacts of these factors. In Chapter 4 we review studies that have analyzed racial differences in homeownership using methods that control simultaneously for all of the measurable factors that are associated with a preference for homeownership. These studies show that the combined effect of demographic and other differences between whites and minorities together can account for much of the observed differences, but for blacks and Hispanics a fairly sizeable gap of 5 to 10 percentage points remains unexplained.

This chapter has also presented information on trends in first-time buyer characteristics. Since public policy is most concerned with increasing homeownership among households that have faced greater challenges in becoming owners, one concern with an analysis of the changes in the number and characteristics of all homeowners is that it is difficult to tell whether increases in new homeowners made a significant contribution to rising homeownership rates. An analysis of data on first-time homebuyers from the American Housing Survey (AHS) confirms that during the 1990s there was, in fact, a sizeable increase in the number of first-time homebuyers. In the two-year period of 1989-1990 there were 3.1 million first-time homebuyers. By 1999-2000 this number had increased by 34 percent to 4.2 million. This growth was not just due to an improved housing market, as repeat homebuyers only increased by 11 percent over this same period. Importantly, minorities made an important contribution to the increase in first-time homebuyers, with their share of this group rising from 22.9 percent to 31.5 percent over the same period. An analysis of changes in characteristics of minority first-time buyers over the 1990s finds that there was a rising share of moderate- and high-income households and younger households. There was also a marked increase in the share of other families with children—a particularly important development given the historical low levels of homeownership among this group and the large share of these households among blacks and Hispanics.

Finally, this chapter reviewed projections for homeownership rates over the next two decades. Masnick and Di (2002) of Harvard's Joint Center for Housing Studies have developed homeownership projections from 2000 through 2020 under three different scenarios: a return to the homeownership trends of the early 1990s (the low series), continuation of homeownership trends from the late 1990s (the high series), and trends that represent the average between these two scenarios (the middle series). Perhaps the most important lesson from these projections is that sizeable homeownership gaps are likely to persist for some time even if minority homeownership rates experience significant increases. Under their middle series, homeownership gaps with whites will decline by 2.5 percentage points for blacks and 1.1 percentage points for Hispanics—despite the fact that the homeownership rates are projected to rise 9.0 percentage points for blacks and 7.6 percentage points for Hispanics. (The white-Asian gap is projected to increase by 2.2 percentage points as immigration continues to dampen homeownership among Asians.) The reason for the persistence in homeownership gaps despite significant increases in minority homeownership is that factors that favor minority homeownership also favor white homeownership. One conclusion from Masnick and Di's findings may be that it is more pertinent to focus on the absolute level of homeownership rates among minorities rather than use the white homeownership rate as a benchmark for measuring progress.

Chapter Four
Causes of Racial Gaps in Homeownership Rates

4.1 Introduction

This chapter has two primary goals: first, to summarize findings from existing empirical studies of racial gaps in homeownership rates; and second, to shed light on the extent to which the present literature has been able to explain homeownership gaps based on the determinants of homeownership discussed in Chapter 2.[73] As will become apparent, the existing literature on homeownership reflects the contributions of many different authors using many different datasets and empirical methods over the last thirty years. While that diversity of effort provides opportunities for robustness checks, it also creates challenges when attempting to draw consistent patterns from the literature for reasons that will be highlighted below.[74]

To anticipate some of our conclusions, we find that the literature has made progress on various fronts, but also has some significant limitations. Of the contributions thus far, a particularly important result common to many studies is that household demographic and financial attributes explain 15 to 20 percentage points (or more in some cases) of the roughly 25 percentage point gap in homeownership rates of white versus African-American and Hispanic households. That finding suggests that the majority of the aggregate racial gap in homeownership arises because of identifiable differences in factors that are associated with the demand for homeownership. While some of these factors are the focus of policy efforts to increase homeownership (e.g., efforts to subsidize housing costs or provide low-downpayment assistance for low-income households), other factors may be more difficult for policy makers and business leaders to influence, such things as marital status. On the other hand, the remaining unexplained, or residual, racial gap in homeownership rates – approximately 5 to 10 percentage points (plus or minus depending on the study) – is large enough to merit considerable concern and attention in both academic and policy circles. The degree to which policy makers can influence the size of this residual gap depends on the underlying factors producing that residual. The unexplained racial gap in homeownership is generally thought to reflect two quite different sets of factors: (i) unobserved household attributes (e.g. wealth, tolerance for risk, expected mobility, employment history, understanding of the homebuying process), and (ii) market characteristics outside of the household's control such as discrimination in mortgage and housing markets. As noted above, some household attributes that reduce demand for homeownership may be difficult for policy

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[73] While the issue of homeownership differences across the income distribution is also an important issue for this study, income has not been the primary focus of most work evaluating homeownership differences. As a result, this chapter primarily deals with the large literature that has analyzed the causes of gaps in homeownership by race. Nonetheless, income is always one of the factors controlled for in these studies. Thus, when appropriate, this chapter will also discuss findings regarding the importance of income as a determinant of homeownership differences.

[74] This chapter focuses on reviewing papers that study the correlates and causes of racial and ethnic gaps in homeownership. It does not review papers that analyze the causes of other racial and ethnic differences in behaviors or outcomes that are related to homeownership such as differences in mortgage loan types or terms, differences in home prices paid, or racial differences in the geographic location of homes.

makers to influence. But in principle, the effect of discrimination on access to homeownership can be at least partly addressed through efforts to enforce existing legislation and regulation, issues that we will return to in Chapter 5.

We should also emphasize that for a number of reasons, the patterns gleaned from the existing literature thus far should be viewed with a healthy degree of caution, especially with respect to temporal changes in the influence of race on homeownership. For example, if the prevalence of discrimination in mortgage and housing markets has diminished over time, then one would expect estimates of race-related homeownership gaps to have declined as well. Indeed, there is suggestive evidence in the literature of just such a trend. But recent studies have also tended to take into account a richer set of household attributes that were not previously available in earlier surveys. As a result, it is likely that some portion of the observed cross-study decline in racial disparities in homeownership reflects improved controls for household attributes rather than a reduction in external constraints on access to homeownership. More generally, virtually all of the studies to be discussed in this chapter suffer to varying degrees from the effects of omitted variables and incomplete specification of the determinants of homeownership, especially in comparison to the conceptual determinants of homeownership outlined in Chapter 2. In addition, while the trend over time has been towards more complete specifications, it is certainly not the case that all recent studies are superior to earlier studies.

Further complicating comparisons across studies – especially again with respect to trends over time – are differences in econometric methods. Among earlier studies, the dominant method used to control for race-related effects was to include dummy variables for racial status (e.g. white, black, Hispanic, Asian). But more recently, a number of studies have begun to adopt a "decomposition" approach that follows methods originated by Oaxaca (1973) and Blinder (1973) and which have recently been described by Collins and Margo (2001). Applying this method to housing tenure, homeownership models are estimated separately by race and the coefficients from one group are used to predict the behavior of other groups while also being compared to the actual homeownership rates in the population. This approach separates total differences in homeownership rates into an endowment effect due to differences in household characteristics and a residual effect due to unexplained differences in the group including discriminatory treatment in the market.[75] This approach is more general than simply including racial dummy variables because it implicitly includes an entire set of interactive variables that allow race to modify the influence of all other variables included in the model (e.g. income, age). The alternative dummy variable approach, in comparison, implicitly assumes that racial status shifts the propensity for homeownership by the same amount for all

[75] More specifically, the decomposition process entails applying the estimated coefficients predicting white homeownership to the characteristics of black households. The average predicted probability of homeownership for all black households provides an estimate of the black homeownership rate assuming their choices were made in the same way as whites. Subtracting this estimated black homeownership rate from the overall white homeownership rate provides an estimate of the 'endowment' effect – that is, the difference in rates due to differences in household characteristics or endowments. The "residual effect" is the remaining difference between actual black homeownership rate and the overall black homeownership rate predicted using the white model. The residual effect includes both differences in household characteristics that are *not* captured in the model but are correlated with included variables as well as differences in treatment in the market due to discrimination.

individuals belonging to a given race regardless of income, household composition, etc.[76] Comparisons of results across decomposition and dummy variable studies should, therefore, keep these differences in mind.

A final limitation common to nearly all studies in the literature concerns the nature of the underlying behavioral model being estimated. In Chapter 2, we defined the *demand* for homeownership to reflect a family's preferences when subject only to their budget constraint. But, as will become apparent, few of the studies to be discussed below have actually estimated the demand for homeownership because few studies have explicitly controlled for external constraints on the household, such as mortgage credit constraints and restricted access to single-family housing.[77] Instead, most homeownership gap studies are best viewed as reduced form exercises that provide evidence of the joint effects of household preferences and supply-side constraints on housing tenure decisions. This limitation further exacerbates the need to tread carefully when drawing policy implications from existing studies, especially with respect to changes in estimated race-related homeownership gaps over time. For example, do changes over time in estimated race effects reflect changes in the intrinsic demand for homeownership or changes in external constraints that restrict access to homeownership? The policy implications from patterns in the data differ dramatically depending on the answer to that question. But, unfortunately, the existing literature offers little guidance on this issue, a limitation that further underscores our need to learn more about the causes of homeownership gaps, both in the present period and also over the past several decades.

Bearing these issues in mind, the remainder of this chapter is organized as follows. In section 4.2 we examine estimates of homeownership gaps from a variety of studies that control for racial differences in household attributes. In section 4.3 we examine a select group of articles that shed further light on empirical efforts to uncover specific determinants of racial homeownership gaps. This portion of the chapter is organized in a manner that partly mirrors that of Chapter 2 and also makes a point of highlighting areas in which further research is needed. Finally, in Section 4.4 we offer conclusions.

4.2 Estimates of Overall Homeownership Gaps Controlling for Racial and Ethnic Differences in Household Attributes

In the first portion of this chapter we discuss cross-sectional studies that use the dummy variable method to evaluate racial disparities in homeownership rates. Because this method was the norm among virtually all of the earlier studies of homeownership gaps, this sub-section also provides a degree of chronological ordering to the discussion. Next, we discuss estimates of homeownership gaps based on cross-sectional applications of the decomposition method. After that, we examine a

[76] Although the decomposition approach is more general, it is important to bear in mind that econometric precision also requires ample degrees of freedom, especially when numerous dummy variables are included in the model. For this reason, the decomposition method is best suited to large datasets in which there are large numbers of households of different races present. In a smaller dataset the dummy variable approach may still be preferred.

[77] A recent exception is Rosenthal (2002) which explicitly controls for the influence of borrowing constraints when estimating homeownership gaps. However, although that paper also includes controls for central city versus suburban status – a proxy for access to single-family housing – it does not explicitly model constraints arising from differential access to single-family neighborhoods.

number of studies that attempt to analyze changes in homeownership rates and gaps over time using consistent datasets, specifications, and methods.

4.2.1 Studies Using The Dummy Variable Approach

The first work to focus on homeownership gaps was Kain and Quigley (1972) who studied St. Louis. Controlling for a variety of demographic factors, they found that the likelihood of homeownership among black households was 8.8 percentage points lower than comparable white households when using a generalized least squares regression model.[78] Their control variables included income, education, job tenure, marital status, gender, age, household size, number of children, and prior housing tenure status. Clearly some of the household attributes thought to influence homeownership and discussed in Chapter 2 were omitted and are likely reflected at least in part by the race dummy variable (e.g. wealth, income variability, mobility, expected house-price appreciation, credit histories). In addition, the race dummy may also reflect the influence of supply-side constraints, such as restricted access to single-family neighborhoods and mortgage credit as noted earlier.

Birnbaum and Weston (1974) modified the Kain-Quigley approach by including wealth as an explanatory variable. When they omitted wealth, as in Kain-Quigley, their estimate of the black-white gap in homeownership was 9.3 percentage points, close to that of Kain and Quigley. But when the level of household wealth was included in the model, the coefficient on wealth was highly significant and reduced the magnitude of the race effect to 5.9 percentage points. Of course, homeownership can influence wealth, which is, therefore, potentially endogenous. To allow for this possibility, Birnbaum and Weston also estimated their model using alternative measures of wealth that excluded home equity. Excluding home equity increased the race effect slightly to a level between 6.1 percentage points to 8.2 percentage points depending on the specification. These patterns support arguments that studies of homeownership gaps must carefully control for differences in endowments, otherwise the research will mistakenly attribute the gap to race.

Roistacher and Goodman (1976) replicated Kain and Quigley's method using data from the 1971 Panel Study of Income Dynamics (PSID) for the 24 largest metro areas. They found that the race effect, as measured by a coefficient on a dummy variable for blacks in an ordinary least squares (OLS) regression model, ranged from 17.0 to 19.1 percentage points. Roistacher and Goodman also estimated a logit model using the same data. When evaluated at the sample means of other variables, the logit model yielded an even greater disparity in ownership associated with race of 26.3 percentage points. However, when Roistacher and Goodman (1976) studied a sample of recent movers, they found no difference in the likelihood of ownership by blacks or Hispanics. This study was the first to suggest that existing gaps would disappear over time as households relocate.[79]

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[78] Substituting permanent for current income caused that racial gap to jump to 19.4 percentage points.

[79] A number of studies of homeownership conducted during the 1970s examined tenure decisions of recent movers in order to account for the lag between a decision to change tenure and when the change actually occurs given the high transaction costs associated with purchasing or selling a home. In addition to Roistacher and Goodman, Kain and Quiqley (1972), Ladenson (1978), and Silberman, et al (1982) all examined the tenure choice of recent movers. It was assumed that recent movers more accurately reflected a household's optimal tenure choice, which was thought to be particularly important during a period when there were rapid changes in legal protections for minorities and prejudicial attitudes. In recent years it has

Jackman and Jackman (1980) estimated homeownership equations using a national survey conducted by the Institute for Social Research in 1975. They used few explanatory variables in their models (income, age, a composite measure of socioeconomic standing, and dummy variables for married household heads, households with children, South region, large cities, and suburban areas) raising the possibility of greater omitted variable bias than in prior studies. They found that black households had a 10.6 percentage point lower likelihood of owning, controlling for other factors.

Long and Caudill (1992) analyzed white-black differences in homeownership using the 1986 Current Population Survey. Their explanatory variables included permanent and transitory income, a measure of wealth derived by capitalizing income from investments, the fraction of income received from welfare, and dummy variables for age, employment status, veteran status, household size, the south region, central city location and race. They omitted expected house-price appreciation, credit histories, mobility, income and job stability, and education. In addition, they deviated from most other studies by restricting their sample to married couples and by excluding mobile homes. This makes it difficult to compare their results to those of other studies. Using the dummy variable approach they found that being black was associated with a 6.3 percentage point lower probability of homeownership.

Other studies using the dummy variable method include Krivo (1986) who used the AHS from 1981 to study the ownership gap between white and Hispanic households, controlling for income, education, age, number of children, region, and urban location. She found that Hispanics were 10 percentage points less likely to own once controls were included for household socio-economic attributes. However, Hispanics are not a homogeneous group and the residual component of the gap varied substantially across sub-groups, equaling 26 percentage points for Puerto Ricans, 19 percentage points for Cubans, but only 4 percentage points for Mexican Americans. Krivo attributed these gaps to location, discrimination that causes segregation (real estate agents and mortgage lenders), and she speculated that immigrant status and housing cost also could play a role. Unlike other studies employing dummy variables for race, Krivo also explored differences in the explanatory power of individual household attributes both between Hispanics and whites and across Hispanic subgroups. But she did not use the Oaxaca-Blinder method to decompose the total gap into part attributable to differences in endowments and an unexplained residual.

Rosenbaum (1996) studied New York City and controlled for education, income, marital status, number of children, age, and the number of earners. Her findings are generally similar to prior studies. She also disaggregated the Hispanic category and obtained different estimates of the likelihood of ownership for each sub-group. The sub-group with the highest propensity for homeownership after controlling for household socio-economic attributes was families of Puerto Rican background, followed by "other" Hispanic, Central/South American, and Dominican with the lowest homeownership propensity. In addition, all of the Hispanic sub-groups had ownership propensities below that of comparable white households.

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become less common to focus only on recent movers, with the implicit assumption being that on average the temporary disequilibrium between a household's current and desired tenure does not bias overall findings about the factors determining tenure choice.

4.2.2 Studies Using The Decomposition Approach

Silberman, et al. (1982) argued that past discrimination might restrict current opportunities and decisions to own a home. In addition, they argued that older households are less likely to change their behaviors even if laws and discriminatory practices change, but that young households will respond to a changing environment. To examine these issues they evaluated homeownership probabilities for white and black households using PSID data for 1974 and 1978. Their primary approach was to estimate separate probit equations for blacks and whites and then statistically decompose the total racial difference in propensity to buy into a part related to differences in household characteristics and an unexplained residual using the Oaxaca-Blinder method described in the introduction to this chapter. This is the first study to use decomposition methods to analyze racial gaps in homeownership. They found a large residual racial gap in ownership in 1974 – 22.5 percentage points. But the race effect fell to 18.3 percentage points by 1978. In addition, they tested their hypothesis that new households will be more responsive to changes in their environment (e.g. new laws and less discrimination) by examining the propensity of newly formed households to become homeowners. Consistent with their arguments, the residual homeownership race effect was smaller for new households: 15.9 percentage points in 1974 and 8.2 percentage points in 1978. Based on the decline in race-related effects over their sample horizon they concluded that racial discrimination declined after 1974, or at least that the influence of discrimination on homeownership diminished.

Wachter and Megbolugbe (1992) applied a modeling approach developed by Goodman (1988) to the 1989 American Housing Survey. They included a large set of explanatory variables including measures of the relative cost of owning and renting, the expected appreciation in value of the occupied housing units, permanent and transitory income, as well as measures of race, age, marital status, and gender of the household head. They estimated separate models for blacks and whites and found a six percentage point lower rate of ownership for blacks, after controlling for household endowments and related socio-economic characteristics. This estimate is distinctive in that it is lower than most previous studies using data from a roughly similar time period. As noted earlier, the reduced race effect could result from a decline in the influence of unobserved discrimination, but could also result from the inclusion of a more complete set of household explanatory variables in the model. They also estimated separate models for Hispanics and non-Hispanics and found that of a total difference in ownership rates of 40 percentage points, only 9 percentage points were unexplained by household attributes. It is important to note that this analysis of Hispanic homeownership gaps differs from most other studies in that it does not control for race as well as ethnicity so that non-Hispanics include blacks and Asians as well as whites. Nor did the authors control for immigrant or citizenship status, which a variety of studies of Hispanic homeownership have found to be quite important determinants of homeownership.

Myers and Chung (1996) focused on gaps in ownership among pre-retirement white and black households ages 51 to 62 using data from the Health and Retirement Survey (HRS). A distinctive feature of this dataset is that it includes information about households' tolerance for risk. In that regard, it should be noted that Myers and Chung found that average values for the risk tolerance measures are similar for black and white households, although possibly somewhat at odds with that result, Myers and Chung also find that white families have a longer time horizon for financial planning than black households. The HRS also provides controls for a large number of very informative household variables, including age, marital status, gender, number of dependents,

income, education, health, religion, region, and a measure of cognitive ability. Not included in the Myers and Chung study were household wealth, mobility, expected house-price appreciation, past tenure status, and income and job stability. Bearing these features in mind, Myers and Chung find that having a longer planning horizon had a positive effect on ownership, while risk bearing preferences had no effect. Using the now standard decomposition of the gap in ownership, they found that the total 22.9 percentage point white-black gap was split into a 13.6 percentage point endowment component and a 9.2 percentage point "discrimination" (and missing endowment variables) component.

Flippen (2001b) also used data from the 1991-92 Health and Retirement Survey to study racial differences in homeownership rates among whites, blacks, and Hispanics. He included data on inheritances, age, marital status, number of children, health, cognitive ability, education, income, occupation, self-employment, retirement status, number of prior layoffs, retirement status, expected years of life remaining, region, urban location, risk tolerance, and length of planning period. This list is the most comprehensive of all studies published through 2001 and it includes proxies for hard to measure concepts such as income uncertainty and risk aversion. Even with all of these controls, Flippen found that black and Hispanics were significantly less likely to be homeowners using the dummy variable approach. He then ran the equations separately and decomposed the 25 percentage point black-white gap in homeownership into the part due to differences in endowments (24 percentage points) and the residual (1 percentage point). Thus, the part of the gap due to "discrimination" or other omitted factors had shrunk to a very small amount. Flippen then further decomposed the impact of endowments into the effect of each explanatory variable by assessing the impact on the gap of substituting the mean for whites for a particular variable into the black equation. Among the endowments, the contributions to the black-white gap in order of importance were marital status, income, occupation, health, inheritances, and education. The gap in Hispanic-white homeownership was 27 percentage points, of which endowment differences explained 21 percentage points, leaving a residual component of 6 percentage points. Differences in income and employment characteristics were the most important endowment factors for Hispanics.

4.2.3 Studies That Estimate Trends in Homeownership Gaps

Ladenson (1978) examined white-black differences in the propensity to buy among recent movers using the PSID for each year from 1969 to 1974. Using a generalized least squares model, he found that the shortfall in black home purchase rates relative to white households declined each year through 1971, when blacks were actually more likely to purchase upon a move than whites. After 1971, however, a shortfall in blacks' propensity to own again emerged, and increased each year until 1974, so that by 1974 the racial disparity in the propensity to own was actually larger than it was in 1969. In contrast, Weinberg (1978) estimated a logit model of the home buying decision using data from the period 1957-64 for San Francisco. He found that blacks were 14.9 percentage points less likely to purchase upon moving than whites, based on the effect of a race dummy variable in the logit model evaluated at sample means.

Long and Caudill (1992) estimated a homeownership model using samples of married couples from the 1970 and 1980 decennial censuses and the 1986 CPS to provide an assessment of trends in unexplained white-black differences in homeownership, and the potential for changes in discriminatory treatment, over time. The results of their analysis suggest that race-related residual differences in homeownership rates declined over the 16 year period from 1970 to 1986. They noted

the 1970 black-white gap was 20.8 percentage points, and claim that it fell to 14.3 percentage points in 1986. The gap is lower than the gap for all households because of the restriction of their sample to married couples and, perhaps, due to the comparison of census data with CPS data. They find that in 1970, 7.1 percentage points of the gap was due to racial differences (discrimination and other omitted variables), but this fell to 2.6 percentage points by 1986. They conclude that "housing market discrimination which restricts the opportunities for blacks to own homes is relatively unimportant today, at least for blacks households whose structure matches that of most white households (i.e. husband-and-wife households)."

Herbert (1995) also studied how the shortfall in homeownership rates of blacks changed relative to whites during the 1980s. Employing a methodology similar to that used by Kain and Quigley (1972), Herbert predicted black homeownership by applying white homeownership rates for 252 types of households based on age, household type and income to the distribution of black households across these categories. This study found an overall shortfall in black homeownership of 13.9 percentage points in 1980 compared to similar white households. Moreover, that shortfall declined only slightly to 13.7 percentage points in 1990. When only married couples were considered the trend was similar. Black couples without children were 10.8 percentage points **less** likely to own in 1980 than similar whites and 9.8 percentage points less likely in 1990. This improvement was offset, however, by an increase in the shortfall in ownership rates among married couples with children from 14.2 to 14.9 percentage points during the 1980s. Thus, Herbert did not find any evidence of a significant decline in the share of the shortfall in black homeownership that was attributable to race during the 1980s – even among married couples. Of course, the methodology used does not provide controls for a number of factors—such as wealth, employment status, credit history, etc. – which may account for much of the observed gaps in homeownership rates.

Gyourko, Linneman, and Wachter (1997) compared changes in homeownership rates for blacks and other minorities between 1960 and 1990 to examine whether there were similarities in the experience of racial minorities in homeownership trends. Using data from the 1960-1990 decennial censuses, Gyourko, Linneman, and Wachter showed that aggregate homeownership rates among non-black minorities increased about the same amount as that of black households between 1960 and 1970 and between 1980 and 1990. However, between 1970 and 1980 black homeownership increased by 3.2 points, while among other minorities homeownership declined by 0.6 points. The divergence of rates in the 1970s is due to multiple factors, but an important one is the difference in the composition of minorities in terms of share of natives and immigrants. In particular, the rate of immigration of non-black minorities was substantially larger than for blacks. Since immigrants tend to have relatively low ownership rates this difference in part explains the divergence in rates. During the other periods there was less divergence in the overall experience of blacks and other minorities, although there may have been changes in the relative socioeconomic standing of these groups that would also affect the probability of homeownership.

Gyourko, Linneman, and Wachter (1999) also examined changes over time in the effect of minority status on homeownership using the Survey of Consumer Finance conducted by the Federal Reserve in 1962, 1977, and 1983.[80] They report results for the "typical" white household and measured the

[80] This study is an extension of work by Linneman and Wachter (1989) that examines the importance of borrowing constraints in determining homeownership.

impact of race by the change in the predicted probability of owning for this household when race was changed to non-white. The results were reported for two different households: wealth constrained and unconstrained. For households without a wealth constraint, minorities have a slightly higher predicted ownership rate (holding other variables constant). This difference declined between 1962 and 1977 and then increased between 1977 and 1983. For wealth constrained households the shortfall in ownership due to race dropped sharply between 1962 and 1977, from 25 percentage points to 6 percentage points, and then rose to 12 percentage points in 1983. These findings clearly do not suggest evidence of a consistent trend in the importance of race over time. But a limitation of the Gyourko, Linneman, and Wachter (1999) study is that all minorities are grouped together which confounds efforts to interpret the findings. If the composition of the minority population changed substantially during the 1962 to 1983 period this could account for the variation in estimates from the different sample years. For example, blacks far outnumber other minority groups in 1962 but by 1983 the Hispanic and Asian population had grown considerably and included substantial numbers of recent immigrants.

Bearing the above caveat in mind, Gyourko, Linneman and Wachter (1999) concluded that, because there was little racial difference in the likelihood of homeownership among households not subject to a wealth constraint, discrimination was not an important explanation for racial differences in homeownership once differences in endowments were taken into account. Instead, they contended that racial differences in homeownership were largely due to differences in wealth. An important concern about this study, however, is that they treat wealth as exogenous even though homeownership has the potential to affect a family's level of wealth. For this reason, while their contention is plausible, it is not conclusive.

The finding that "unexplained" gaps are declining over time is not supported in all studies. Gyourko and Linneman (1997) estimated logit models of homeownership using samples from the decennial censuses from 1960 through 1990. They reported the joint effect of minority status and age on the predicted probability of ownership for a typical household. In every time period they found the largest effect of race on homeownership among young households (age 26-35). The race effect then declined consistently as households age. For each age group there was a decline in the importance of race between 1960 and 1970 of about 2 percentage points. Between 1970 and 1990 the influence of race increased, however, for all age groups except the youngest, for whom no change was evident. These findings suggest that there was no decline in the effect of minority status on homeownership after 1970. As with the Gyourko, Linneman, and Wachter (1999) study though, this study also grouped all minorities together, making interpretation of the results difficult, especially given the size of the Hispanic population by the late 1980s, many of whom were new immigrants.

Segal and Sullivan (1998) use the CPS to study the rate of ownership and white-black homeownership gaps of household heads age 18 to 74 from 1977 to 1997. They first observe that over this span of years the overall homeownership rate changed in a very different manner for different age categories, falling for heads age 44 or less and rising for heads age 55 or greater. Segal and Sullivan (1998) also note that the homeownership rates for both married and unmarried households increased during this period by about four percentage points, but the overall rate change was near zero because of the large shift of the population from married to unmarried heads of household. Their final observation is that the homeownership rate for households with more than a college degree rose substantially from 1977 to 1997, rose modestly for college graduates, was constant for high school graduates, but fell for heads with less than a high school degree. One

conclusion the authors draw from these broad divergences in homeownership trends for different demographic groups is that there are many major demographic and economic trends unrelated to public policy that have significant impacts on observed homeownership trends. Thus, it may be dangerous to draw conclusions about the effectiveness of policies aimed at increasing homeownership from trends in raw homeownership rates.

Segal and Sullivan then computed what would have happened to the overall homeownership rate if selected influential variables had not changed over time. Interestingly, they found that even if the distribution of households by marital status, number of children, age, region, household size, racial composition, education, income, and head's gender had not changed over time, the change in the homeownership rate would have been nearly the same as the observed change. That is, all of the demographic changes had offsetting effects. They then estimated homeownership equations, controlling for the above variables, and decompose the black-white gap. The unexplained residual is 12.7 percentage points in 1977 and a trivially different 13.0 percentage points in 1997. They acknowledge that the residuals are the result of the omission of multiple factors including demographic and economic variables as well as policy variables, thus no conclusion about the effectiveness of public policy can be drawn. Among the explanatory variables they find that the 1997 black-white gap is primarily explained by differences in income (9.3 percentage points), marital status (6.2 percentage points), and age (4.1 percentage points).

Bostic and Surette (2001) studied changes in ownership among whites, blacks, and Hispanics between 1989 and 1998, when the U.S. average homeownership rate grew by 2.3 percentage points (8 million households). Using CPS data, they focused on heads age 22 to 60, separated into five income categories. In 1989 the observed black-white gap was 28.8 percentage points, falling 2.0 percentage points by 1998. The gap fell by 1.0 percentage points for Hispanics. Bostic and Surette argued that the change in the ownership rate and the gaps could be due to one of three general factors: changes in household socio-economic characteristics, changes in the regulatory environment (Community Reinvestment Act, Home Mortgage Disclosure Act, HUD setting affordable housing goals for the GSEs), or technological developments, such as credit scoring.

Bostic and Surette began their analysis by pooling the data for 1989 and 1998 and estimating a simple dummy variable model, including a race-ethnicity interaction term. This approach assumes that the behavioral response of blacks, whites, and Hispanics to the explanatory variables is the same and that it did not change over time. Control variables included age, income quintile, female head, central city, suburb, region, MSA house price, marital status, number of children, household size, education, and income. They acknowledged the omission of important explanatory variables such as wealth and credit histories, and our discussion above suggests many other variables were omitted. In 1989, the component of the black-white gap not attributable to the explanatory variables ranged from 9.8 to 16.9 percentage points depending on the income quintile. These gaps fell over the next decade by -0.6 to 6.0 percentage points, the reduction averaging 3.1 percentage points, somewhat larger than the change in the observed total gap. The comparable results for Hispanics were -0.1 to 4.4 percentage point reductions in the gaps, averaging 2.1 percentage points. There was no clear pattern of the size of the reduction in this residual gap with income category. However, there was a pattern that if the gap was estimated to be relatively large for a particular income category in 1989, then the reduction in the gap by 1998 was also estimated to be large, tending to equalize the gaps across income categories.

Bostic and Surette next applied a variant of the Oaxaca-Blinder decomposition method to sort out the impact of changes in household endowments on the ownership rate. They allowed the explanatory variables' coefficients to change over time, but not across racial or ethnic groups. Given the results of prior studies that show the behavioral responses across groups differ, this restriction clouds Bostic and Surette's results. They concluded that changes in endowments explain most of the change in ownership rates for the upper two quintiles of income, but explained little of the change for low-income households. If true, this suggests that the influence of omitted variables was most important for low-income households. Such omitted factors include changes in public policy, but also include changes in the wealth, credit histories, and income stability of households and the introduction of new technologies such as automated underwriting, among other factors.

Collins and Margo (2001) studied changes in the homeownership gap between blacks and whites during the entire 20th century. They presented data that shows the gap decreased slightly from 24.3 percentage points to 21.9 percentage points from 1900 to 1940. It then jumped to 27.3 percentage points in 1960, and subsequently fell to 19.6 percentage points in 1980 where it remained stable through 1990. Importantly, the data were limited to household heads age 20 to 64 and to male heads. They used an OLS model, estimated separately each census year, to explain homeownership including the following explanatory variables in the model: black, occupational status, age, literacy, farm, urban, suburban, region, marital status, family size, whether the household includes more than one family, native-born interregional migrants, and foreign born. Many sensible explanatory variables were omitted because of the limitations created by using census data, especially that from the early 1900s. The coefficient of the black indictor variable declined fairly steadily from 1900 to 1990 implying that unexplained factors causing the gap decreased in importance over time. This insight is relatively powerful because Collins and Margo included the same list of explanatory variables in every census year regression. Their analysis suggests that the cause of the increase in the gap between 1940 and 1960 was mostly due to a change in the levels of the explanatory variables, particularly the level of urbanization of blacks (suggesting the importance of supply side effects). The rest of the change was due to changes in behavioral responses to the explanatory variables, particularly education. After 1960, only 40% of the reduction in the gap was explained by changes in endowments or behavioral responses, thus the majority of the reduction was due to unmeasured factors. They noted this finding is consistent with fair housing policies having an impact, but the evidence is not conclusive.

There are multiple limitations of the Collins-Margo study. First, the elimination of female-headed households from the sample, combined with the increase in the percentage of families that are female headed over time, masks substantial changes in the ownership rate. Clearly the overall ownership rate was pulled down after 1960 by the increase in the percentage of households that are headed by single females. Why the analysis is limited to households under age 65 is not clear. This restriction likely reduces the size of the gap because of the high ownership rate of heads age 65 or older and the longer average life spans of whites. Third, the key policy focus is now on changes in the gap in the 1990s, but the analysis stops with the 1990 census. Finally, as in all studies of ownership gaps, the list of variables omitted from the analysis is large.

Another study adopting the same wide sweep of time is by Masnick (2001a). He included all households in the analysis, not just male heads age 20 to 64, and he found different trends than Collins and Margo during the 20th century, most importantly a much larger gap in 1980 and 1990. Masnick's most important contribution is noting the durability of the black-white gap for an age-

specific cohort as the members age. For example, if the gap was particularly small for a cohort age 20-29 in year *t*, then the gap tends to remain small in years $t + 10$, $t + 20$, etc. At any point in time, the total observed gap for a racial group is the weighted average of current age cohorts' gaps. Thus, given the tendency of gaps for specific cohorts to continue over time, trends in ownership rates and gaps depend on the gaps of the cohorts that are "exiting" the population and those that are entering the population.

Although research on the sustainability of homeownership is in its infancy, it is plausible that cohort specific gaps persist over time because current homeownership tends to increase the likelihood of future ownership. The implication is that if, for example, a public policy is implemented that increases the homeownership rate of young black households compared with whites, then this policy may impact the ownership gap not only during the implementation period, but also throughout these individuals' lifetimes. Further, and more speculatively, if there is intergenerational transmission of tendencies to become a homeowner, there could be transmission of the impact of the public policy from one age cohort to their children.

Recently, a number of studies have focused on explaining the Asian-white homeownership gap (Coulson 1999; Painter, Gabriel, and Myers 2001). Their methodologies have followed those developed to study racial gaps, but there has been greater focus on homeownership rate differences among Asians of different ethnicities. Coulson (1999) used a national sample (1996 CPS) to explain white-Asian ownership differences but the number of Asians was relatively small, thus separation into subgroups was not possible. He found that all of the white-Asian difference in ownership could be explained by differences in age, location in high cost states, and immigrant status. Once all explanatory variables were controlled, Asians' ownership rate became greater than whites.

Coulson and Kang (2001) and Painter, Yang, and Yu (2002) studied ethnic groups with Asian ethnicity. Coulson and Kang used CPS data from 1996 to 1999 and defined five areas of origin for Asians: Japan, People's Republic of China (PRC), Korean/Singapore/Hong Kong/Taiwan, Indian/Pakistan/ Bangladesh, and "other Asian." Observed ownerships rates ranged from 39 percent to 63 percent. Explanatory variables in the homeownership estimation included income, age, education, marital status, gender, the number of children, location (central city, suburban), the ratio of owner to renter prices, immigrant and citizenship status, and years in the U.S. This set of variables explained the ownership gaps quite well. Japanese, PRC, and "other" Asians observed ownership rates were about 4 percentage points higher than predicted. That for the Indian/Pakistan/Bangladesh Asians were about 7 percentage points too low and the other combined group was about 3 percentage points too low. (No standard errors were provided in the study.)

Painter, Yang, and Yu (2002) used the 5 percent sample of the 1990 decennial census microdata and separated Asians into Chinese, Filipino, Japanese, Korean, Asian Indian, and "other Asians". There are three reasons that this separation is of general interest. The first is the inherent interest in determining ownership gaps for all identifiable groups in the U.S. The second is that inclusion of dummy variables for these multiple ethnicities captures omitted variables that are correlated with ethnicity thus yielding better estimates of the coefficients of the other variables in the ownership gap estimation. The third is that the estimated gaps for each of the ethnicities may shed light on the impact of difficult to observe variables. For example, there may be recognized differences in cultures that help to explain the gap such as whether their ethnic tradition includes ownership of property.

Painter, Yang, and Yu noted that Asian ethnic groups tend to concentrate in particular parts of the U.S., these generally characterized as high-ownership-cost areas. This spatial concentration helps to explain Asians' lower observed rate of ownership compared with whites. Their sample was from three consolidated metropolitan areas: Los Angeles, San Francisco, and New York. The inclusion of several different market areas is an improvement compared with Painter, Gabriel, and Myers (2001) who studied only Asians living in Los Angeles. These three areas contained about half of all Asians in the U.S. in 1990.

Painter, Yang, and Yu included as control variables in their explanation of homeownership age, marital status, education, household size, permanent and transitory income, house prices and rental rates, immigrant status and duration of time in the U.S. Homeownership was estimated only for recent movers, creating the possibility of sample selection bias. This problem was addressed by using the standard truncated bivariate model, which yields unbiased estimates. One equation modeled the move-stay decision and the other modeled the ownership decision. They appropriately noted that mobility affects tenure choice, but they addressed this issue only indirectly by limiting the sample to movers. Presumably, their assumption is that recent movers are more likely to move in the future than are non-movers—an assertion that is supported by the migration literature.

Painter, Yang, and Yu first estimated a model that included dummy variables for the six ethnic groups (with whites as the control group). They found that ethnic Chinese had significantly *greater* homeownership rates than whites, and only "other Asians" had lower rates once endowment differences and immigrant status were controlled. As discussed above, this model assumed that all groups respond the same way to explanatory variables, an assumption that was clearly rejected by their data. They next followed the standard decomposition method, and further separated the results by location. They find that ethnic Chinese were 18 to 23 percentage points more likely to be homeowners than whites, ceteris paribus. Asian Indians also were more likely to own than whites in all three locations, but the differences were only 2 to 8 percentage points. Differences in ownership compared with whites of Filipinos and Koreans were small, with that for "other Asians" being 1 to 4 percentage points lower. Only Japanese in New York had a substantially lower ownership rate than comparable whites. Painter et al. argued that this difference was due to many Japanese in New York being students or business employees on temporary assignments.

The conclusion from these studies is that, as a group, the homeownership rate of Asians is comparable to that of whites once differences in characteristics are accounted for. There is some heterogeneity among Asians depending on their ethnicity, the largest variation appearing to be an unexplained tendency for Chinese to own. Which explanatory variables are most important in explaining the gap depends on the particular group, but income is not a key. Immigrant status is important, suggesting that the white-Asian ownership gaps may close in coming decades as the recent large wave of immigrants is assimilated—although continued high rates of Asian immigration would serve to maintain the observed homeownership gaps.

4.3 Estimates of Determinants of Homeownership Gaps

This portion of the discussion examines estimates from a selection of empirical studies that evaluate the influence of various determinants of homeownership gaps. For that reason, the discussion to follow draws closely on the ideas developed in Chapter 2 where the conceptual determinants of

homeownership gaps were outlined in detail. We also highlight areas in which our knowledge of the determinants of homeownership gaps is deficient.

4.3.1 The Influence of Household Formation and Headship Rates

As discussed in Chapter 2, differences in headship rates can affect homeownership rates. Moreover, our review of economic and demographic factors affecting headship suggested that the factors affecting headship are complex. For example, blacks have the lowest marriage rate and highest divorce rates among racial and ethnic groups. Headship is also related to income, and income is lowest for Hispanics and blacks. As shown in Exhibit 2-4 in Chapter 2, on balance these and other influential factors on headship result in nearly equal headship rates for whites and blacks, but much lower headship rates for Hispanics and Asians. But the only studies we are aware of that have made the point that household formation affects homeownership rates are Hendershott (1987), Masnick (2001b), and Haurin and Rosenthal (2003).

As noted in Chapter 2, Hendershott (1987) found that the headship rate changed significantly comparing 1985 with 1960. He calculated that changes in household types changed the ownership rate by 6.8 percentage points during this period, a very large change compared with ownership trends since 1960. Masnick (2001b) focuses on recent demographic changes in the U.S. and comments on expected changes in ownership rates by race. He argues that the movement of baby boomers into prime homeowning years and the small size of the baby bust generation increased the 1990s' ownership rates. He also argues that future ownership gains will be affected by demographic factors (primarily age-cohort effects and immigration), particularly an increased homeownership tendency due to the relatively small group of renters in the current age cohorts where the rent-own transition should occur. Although Masnick comments on the importance of demographic differences by race and ethnicity, neither his nor other studies have identified the effects of differential headship rates on the homeownership rate of different income and racial/ethnic groups. Thus, our knowledge of the extent to which differences in household formation and related headship rates contribute to racial gaps in homeownership is in its infancy.

The recent HUD-sponsored work by Haurin and Rosenthal (2003) begins to fill that gap. Their study makes exhaustive use of household level data from the 1970 to 2000 Censuses. Results suggest that differences in household formation do affect homeownership rates, but only to a modest degree. Moreover, the effects are largest among relatively young families – accounting for up to 5 percentage points of the decline in homeownership rates between 1970 and 2000 for families in their 20s. Differences in head of household status also serve to narrow year-2000 white-black gaps in homeownership, but primarily for families in their 20s and 30s where the effect is between 3 to 5 percentage points. For Hispanics, differences in headship rates serve to widen white-Hispanic gaps in homeownership rates, but once again, this effect is felt primarily among younger families (in their 20s and 30s), and the impact is no more than 2 to 4 percentage points.

Differences in household formation and related headship rates have the potential to affect disparities in homeownership rates. However, the most thorough analysis of this issue to date suggests that, while headship behavior does affect homeownership rates, the effect is modest in size relative to the overall gaps in homeownership rates noted throughout this study.

4.3.2 Demand Effects: Tax Policy and Favorable Treatment of Homeownership

In Chapter 2 we noted that homeownership is tax advantaged, particularly for those households that itemize deductions rather than take the standard deduction. Moreover, the value of favorable tax treatment of homeownership increases with the owner's marginal income tax rate and, therefore, income. As a result, favorable tax treatment of homeownership reinforces the expectation that differences in income account for an important portion of the gap in homeownership rates between white and non-white households. We are not aware of any research that examines the impact of favorable tax treatment of homeownership on racial gaps in homeownership rates. However, Rosen (1979) estimated the effect of taxing net imputed income on the aggregate U.S. homeownership rate for different gross annual income categories using the tax code pertinent to 1970. Rosen (1979) reports that among the lowest income group (0 to $4,000 in 1970 dollars), taxing net imputed rent would lower homeownership rates by 2.6 percentage points. Among the highest income group (greater than $28,000), taxing net imputed rent would lower homeownership rates by 4.8 percentage points. In related research, Rosenthal (1988) estimates the impact of taxing imputed rent while allowing deductions for maintenance. These changes would treat homeowners in an equivalent manner to owners of rental properties, at least as a first approximation. Using data from the Panel Survey of Income Dynamics (PSID) from the late 1960 to early 1980s, Rosenthal found that changing the tax code in this manner would lower homeownership rates in the U.S. by over 10 percentage points.

These estimates suggest that favorable tax treatment has contributed to homeownership in the United States in aggregate. Moreover, as noted above, because this favorable treatment disproportionately benefits higher-income families, and because minorities are of lower income as a group relative to whites, it would seem clear that favorable tax treatment contributes to some of the racial gap in homeownership rates. However, the extent to which that occurs is not currently known.

4.3.3 Demand Effects: Household Mobility

Chapter 2 emphasized that a household's expected mobility is an absolutely critical determinant of whether owning a home makes sense from an investment perspective. Moreover, evidence presented in Chapter 2 indicates that mobility rates are higher for households with low income, for the young, and for singles. Gaps in ownership rates, therefore, should be explained in part by differences in mobility rates. Rosenthal (1988) provides explicit evidence of this using data from the Panel Study of Income Dynamics (PSID). Following households from the late 1960s to the early 1980s, Rosenthal (1988) demonstrates that individuals that stay in their homes for longer periods are much more likely to become owner-occupiers. A limitation of that work, however, is that it takes length of stay in the home as exogenous. Zorn (1989) estimates a different model using Korean data in which he attempts to treat length of stay as endogenous to the housing tenure decision. Zorn also finds evidence of the importance of household mobility. Haurin and Gill (2002) solve the endogeneity problem by using a sample of military members whose length of assignment at a location is dictated by the military. They then show that the likelihood of homeownership is strongly affected by the expected duration of stay.[81]

[81] Interestingly, the literature on mortgage instrument choice has paid much more attention to the role of expected household mobility. Rosenthal and Zorn (1993) and Brueckner (1992) both show that mobile

In contrast, most studies of homeownership and homeownership gaps omit information on household mobility. As a result, estimates of the impact on homeownership of household attributes like income, marital status, and age have likely been overstated in the literature because these variables will reflect both their direct effects on homeownership as well as indirect effects of unobserved household mobility. Given the powerful effect expected mobility has on the investment potential of homeownership, the scant attention mobility has received in the homeownership gaps literature is striking. Future studies of gaps in homeownership rates should certainly attempt to take mobility into account.

4.3.4 Demand Effects: Expected House-Price Appreciation and Capital Gains

The rate of return from investing in homeownership is directly influenced by the expected rate of house-price appreciation. But, as discussed in Chapter 2, the literature on whether house prices increase at different rates in different locations is murky with results differing across studies and time periods. Moreover, there is little work in the literature that systematically considers whether expected house-price appreciation contributes to racial gaps in homeownership. Such effects would presumably require that homes appreciate at different rates in minority and low-income neighborhoods as compared to higher-income white neighborhoods. Although that could occur in the short run, in the long run standard arbitrage arguments would impose some discipline across markets causing appreciation rates and corresponding risk-adjusted returns on investment in real estate to be roughly of similar magnitude. On the other hand, if the nature of discrimination is such that when minorities move into a neighborhood, higher-income white households leave – reducing aggregate demand for such neighborhoods – then the arrival of minorities could endogenously reduce expected capital gains. Under this scenario, it is possible that minority homeowners could experience lower house-price appreciation, even in the long run. But we are not aware of any study that has examined this hypothesis in a defensible manner. Thus, the question of whether expected housing capital gains contribute to racial gaps in homeownership remains unanswered and is in need of further study.

4.3.5 Demand Effects: House Price and Income-Related Risks

As discussed in Chapter 2, housing is a risky investment. Moreover, the scale of that risk in absolute terms increases with house price levels: a 25 percent drop in nominal house prices translates into a $50,000 loss in equity for a $200,000 home, but only a $25,000 loss in equity for a $100,000 home. As a result, a family choosing to buy in a relatively inexpensive market such as Philadelphia, for example, is exposed to much less risk than the same family choosing to buy in an expensive market like Boston, everything else equal. Studies by Davidoff (2002) and Sinai and Souleles (2001) discussed in Chapter 2 highlight these and related issues, as do other studies previously discussed in Chapter 2. On the other hand, there is little hard evidence in the literature of the degree to which differences in house price levels across cities and neighborhoods affect gaps in homeownership rates because of their influence on risk. Almost the only work that makes even a partial attempt to address

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homeowners are more likely to select adjustable rate mortgages over fixed rate mortgages, and that this self-selection has implications for the equilibrium mortgage rates on ARMs and FRMs. Quigley (1987) also examines the relationship between household mobility, the value of assumable FRMs, and mortgage prepayment. More generally, the mortgage finance literature has long been appreciative of the impact of household mobility on mortgage prepayment and the value of mortgage pools, with related implications for mortgage pricing. See Clauretie and Sirmans (1986), for example.

this issue is that of Belsky and Duda (2002) who found that low-priced homes have greater price risk than other homes. That finding could explain why some low-income households rationally forego homeownership, contributing to gaps in homeownership between low-income and high-income households. But more research on this topic is needed.

A related factor is income risk. Haurin (1991) found that households with high expected volatility of future income tend to rent even after controlling for other factors. As noted in Chapter 2, Davidoff (2002) provided similar evidence by demonstrating that individuals with incomes closely tied to the local real estate market were less likely to be owner-occupiers, everything else equal. In addition, Rosenthal (2002) found that families that know what their income will be one year ahead are six percentage points more likely to own, while families in which the household head works full-time are ten percentage points more likely to own.[82] Together, results from these studies suggest that job stability and income security are important predictors of the demand for homeownership. Such behavior on the part of households is rational because a family with an uncertain income stream and/or insecure employment is likely to be more risk averse. Because housing is a potentially risky asset, homeownership is less appealing for such families. Moreover, given that black and Hispanic unemployment rates have been persistently higher than for comparable white households, these factors would clearly contribute to elevated homeownership rates of white families relative to those of minorities. But apart from the studies mentioned above, we are not aware of other research that has explicitly examined the influence of price and income risk on the propensity for homeownership. This too, therefore, is an area in need of further study.

4.3.6 Demand Effects: The Cost of Home Maintenance

Our review in Chapter 2 reported that maintenance costs of older housing are greater than for new housing. Thus, single households, low-income and low-wealth households who cannot bear the risk of a catastrophic maintenance event should tend to rent. These characteristics are correlated with race. Further, black households are spatially concentrated in areas that have a greater amount of old housing. Combining these observations suggests that part of the explanation for black-white gaps in ownership could be due to the impact of high expected maintenance costs. Once again, however, the literature on homeownership gaps is virtually silent on this issue. There is a need, therefore, for further research on the degree to which higher maintenance costs in older central city neighborhoods contribute to racial gaps in homeownership.

4.3.7 Supply Constraints: Housing Market Discrimination and Access to Single-Family Housing

In Chapter 2 we reported data from the 1999 American Housing Survey showing that black households tend to disproportionately reside in multifamily central city housing in comparison to white families of comparable income. In addition, racial gaps in homeownership were dramatically reduced after controlling for central city location and structure type of residence. The key question that follows is whether blacks and other minorities seek out high-density central city housing of their own volition – in a manner free of the influence of discriminatory constraints – or whether

[82] These estimates were obtained using data from the 1998 Survey of Consumer Finances and were derived from a model that also controls for a host of household attributes as well as the influence of credit constraints and the density of development in the neighborhood.

discrimination restricts minority residential opportunities in a manner that restricts minorities to neighborhoods where the unit cost of land is high giving rise to high density housing. The first scenario would imply that minority concentration in high-density central city housing is a matter of choice and in that regard, should not be interpreted as a supply constraint. The second scenario, however, implies that discrimination coupled with economic pressures to erect high density housing when land is expensive restricts minority access to the supply of single-family housing. That restriction, in turn, depresses minority homeownership rates. Clearly, the policy implications of these two scenarios differ.

Kain and Quigley (1972) provided the first careful treatment of these issues, arguing that limited minority access to single-family housing does in fact reflect a supply constraint. They studied inter-metropolitan differences in homeownership gaps among white and black households by relating them to the proportion of central city housing that is single-family dwellings and the proportion of blacks living in the central city. Both variables were significant, suggesting supply restrictions were an important factor in creating homeownership gaps.

McDonald (1974) provided further evidence to support Kain and Quigley's supply restriction hypothesis. McDonald's goal was to decompose the shortfall in black homeownership rates attributable to discrimination into a portion related to a lack of housing available for homeownership and a portion related to blacks' inability to obtain mortgage financing. Using the 1965 Detroit Transportation and Land Use Survey, McDonald estimated a set of simultaneous equations for the choices of ownership and of occupying a single-family structure (including duplexes). McDonald argued that if a lack of single-family houses accounts for the entire shortfall in black homeownership, the coefficient on the race variable would be significantly different from zero only in the equation predicting structure type, and not in the equation predicting tenure given structure type. In fact, the results suggested that of the total unexplained shortfall in black homeownership of 10.0 percentage points, 5.5 points were related to lower occupancy of single-family structures by blacks, while the remaining 4.5 points were related to lower ownership of occupied single-family homes, attributed by McDonald to blacks' inability to obtain mortgage financing. McDonald concluded by noting that black homeownership could be increased without eliminating segregation by making mortgages more readily available for purchases in black neighborhoods.

More recently, Gyourko, Linneman and Wachter (1997) explored the relationship between racial differences in homeownership and central city location by estimating multinomial logit models of the choice of owning combined with the choice of living in central city versus suburban locations using data from 1977 and 1983. Among households that were not wealth constrained, they found that blacks were much less likely to own homes in the suburbs than comparable white families, but much more likely to own homes in the central city than comparable white families.[83] Among wealth constrained households, Gyourko, Linneman and Wachter found that blacks were much less likely than comparable whites to own homes in both the suburbs and in the central city.[84] Moreover,

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[83] Between 60% and 80% of wealthy blacks are predicted to own in the city, compared to 30% to 45% of whites (with the range reflecting the values for the two time periods studied). In addition, black households' lower propensity to buy a house in the suburbs is almost totally offset by a greater likelihood of owning in the city.

[84] Among these less wealthy households there is little tendency for ownership in central cities to offset lower than expected suburban ownership.

between 26% and 34% of *wealth constrained* white households were predicted to own homes in suburban areas, while only 19% to 31% of *wealthy* blacks are predicted to own homes in the suburbs.

These patterns are suggestive of several related phenomena. First, evidence that wealthy blacks are much more likely to choose central city locations provides support for the idea that discrimination restricts black residential opportunities for reasons unrelated to socioeconomic status. Second, constraints on access to the single-family housing stock appear to limit the homeownership opportunities of lower-income blacks to a greater degree than those of wealthy blacks who, by and large, are able to become homeowners in the central cities.

Working in the opposite direction, Flippen (2001a) provides evidence that is not consistent with the presence of a single-family housing supply constraint. He examined the impact of segregation in his analysis of the Health and Retirement Survey for 1991 discussed earlier. Using five different measures of segregation for 64 metropolitan areas, he found mixed evidence that black and Hispanic ownership is lower the greater is segregation. One problem is that the results were not robust across specifications. Flippen included the percentage of old dwellings and the percentage single-family dwellings as explanatory variables, but neither was significant for blacks and only the percent single family was significant for Hispanics. Moreover, he noted that court ordered busing in the 1970s resulted in white flight in many central cities. One outcome of these events was an increase in minority access to the existing central-city stock of single-family dwellings as white families vacated such dwellings for the suburbs. Thus, court ordered busing would serve to relax constraints on the supply of single-family housing for minority households.

Another paper that also casts doubt on the presence of a single-family housing supply constraint is recent work by Deng, Ross, and Wachter (forthcoming). Using 1985 data from the metropolitan version of the American Housing Survey for Philadelphia, the authors estimated nested multinomial logit models of housing tenure choice taking neighborhood location within the Philadelphia metropolitan area into account. The study did not find any evidence to support the idea that racial differences in location within the metro area affect homeownership. On the other hand, research by Herbert (1997) indicates that of the major cities in the U.S., Philadelphia has a much higher than typical concentration of single-family housing in the central city. Moreover, the original Kain and Quigley (1972) work emphasized that it is the combination of segregation in conjunction with a concentration of high-density central city housing that restricts homeownership opportunities for minorities. To the extent that Philadelphia is highly segregated but otherwise offers a plentiful supply of central-city single-family housing, then racial segregation in the Philadelphia housing market would not necessarily be expected to contribute to racial disparities in access to homeownership. Among the 50 metropolitan areas studied by Herbert, Philadelphia was among the areas with the smallest unexplained residual in white-black homeownership rates. More generally, whether or not racial segregation in conjunction with high-density central city development patterns restricts minority homeownership remains an open question. This also is an area in need of additional research.

4.3.8 Supply Constraints: Mortgage Market Discrimination and Access to Credit

As discussed in Chapter 2, an obvious and compelling constraint on minority homeownership opportunities has been the persistent presence of discrimination in both housing and mortgage markets. Although the degree to which discrimination affects minority housing opportunities in a

given city and time period may be controversial, there is little controversy about the idea that minorities as a group have been subject to housing market discrimination. A number of the most important studies in this area were discussed in Chapter 2.

As a general characterization, in the context of housing markets, the discrimination literature has most often focused on efforts to document the existence of discrimination. This is certainly the case with the growing number of fair housing audit studies (see Yinger (1987), for example). But in the context of the literature on racial gaps in homeownership, the focus has instead been more clearly centered on efforts to quantify the *degree* to which discrimination restricts minority access to homeownership. This is challenging for a variety of reasons. Most important is the need to control for a wide range of household attributes that might be correlated with race. But in addition, much of the gaps literature has ignored the possibility that discrimination may restrict minority homeownership through two different markets, the housing market – where discrimination contributes to segregation of minorities in high-density central city neighborhoods – and the mortgage market where discrimination restricts access to mortgage credit, possibly regardless of location.

Of the studies discussed thus far, only McDonald (1974) explicitly attempts to identify the different possible contributions to homeownership gaps from single-family supply constraints versus constraints on access to mortgage credit. However, separating the influence of mortgage market discrimination from broader societal based discrimination that contributes to racial segregation in the housing market is important if one is to effectively address homeownership gaps at the policy level. For example, suppose that discrimination affects homeownership gaps entirely through racial segregation in a manner that limits minority access to single-family housing. Under that scenario policies designed to increase minority access to mortgage credit may be either misguided and/or ineffective at elevating minority homeownership rates relative to those of comparable white families.

How large then is the influence of mortgage market discrimination on racial gaps in homeownership? At one extreme, Fannie Mae (1998) found in a survey of 1,500 black and Hispanics that 40 percent of blacks believe that "people of their racial or ethnic backgrounds suffer from discrimination in mortgage lending," as do 28 percent of Hispanics. The results for the same question in 1993 were quite different; 59 percent of blacks and 40 percent of Hispanics thought discrimination occurred. This evidence, admittedly weak, is consistent with ownership gap studies that suggest the part of the gap due to race is shrinking over time. The survey also reports that in 1998, 16 percent of blacks and 11 percent of Hispanics say that discrimination is a major obstacle to homeowning. Although these survey responses are troubling and warrant close attention, we believe that the homeownership gaps literature definitively shows that mortgage market discrimination accounts for at most only a "small" share of the aggregate racial gaps in homeownership rates.[85] The results from the Fannie Mae surveys and the statistical analyses discussed in this chapter are not necessarily at odds with each other. Instead, it is possible that many families may be subject to discrimination, but continue searching for a home and ultimately become homeowners.

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[85] Of the roughly 25 percentage point gap in homeownership rates between whites and both blacks and Hispanics, roughly 20 percentage points of this difference are attributable to differences in household characteristics. As noted in the introduction to this chapter, the remaining unexplained difference is attributable to both unexplained household characteristics that reduce the demand for homeownership as well as discrimination.

In addition, a recent study by Rosenthal (2002) estimated the demand for homeownership controlling for the influence of credit barriers using data from the 1998 Survey of Consumer Finances. Central to the study are a set of survey questions that enable the researcher to determine, a priori, whether the individual family perceives itself to have been subject to binding credit barriers – of *any* type (mortgage, auto credit, consumer credit, etc.). Then, controlling for sample selection, Rosenthal (2002) estimated the demand for homeownership among families not subject to credit barriers and uses the results to predict the demand for homeownership for the entire sample. Comparing predicted to actual homeownership rates provides an estimate of the influence of credit barriers on homeownership.

For the U.S. population as a whole, Rosenthal estimated that credit barriers depress homeownership rates by just over 4 percentage points. Among white households the estimate was 4.1 percentage points, among Hispanics 6.7 percentage points, and among blacks just 1.3 percentage points. Although sampling variation and the normal degree of imprecision in such estimates must be kept in mind, these estimates suggest that credit barriers account for at most only several percentage points of the overall racial-ethnic gaps in homeownership. Moreover, given that Rosenthal's study provided only modest controls for credit history (specifically, the study controls for history of late loan and credit card payments and evidence of past bankruptcies), the possibility of omitted variables remains. But omitted household attributes almost always work in the direction of inflating estimated race related effects in the homeownership literature. These estimates, therefore, may provide an upper bound on the extent to which credit barriers exacerbate racial gaps in homeownership.

Rosenthal (2002) also summarizes the influence of credit barriers on homeownership rates by income category. Among families in the upper half of the income distribution credit barriers have little or no discernible effect on homeownership rates. However, credit barriers depress homeownership rates by roughly 7 percentage points among individuals in 10th to the 50th income percentile, and 11 percentage points in the bottom income decile. To put these estimates in perspective, Rosenthal (2002) also reports that compared to households in the 3rd income quartile, homeownership rates for households in the bottom decile are 39.4 percentage points lower, those with income between the 10th and 25th percentile are 24.9 percentage points lower, and those in the 2nd quartile are 14.1 percentage points lower. Thus, although credit barriers may account for an important portion of the gap in homeownership rates between families in the 3rd and 2nd income quartiles, in general, something other than credit barriers appears to drive much of the difference in homeownership rates between high- and low-income households.

Why is the influence of credit barriers on homeownership rates so "low", especially with respect to racial gaps in homeownership? One reason is that credit barriers can arise for reasons unrelated to race and discrimination as discussed in Chapter 2. In that regard, it is important to note the dramatic innovations in the mortgage market that have occurred since the late 1980s. Rosner (2001), for example, reports that in 1989 just 7 percent of home mortgages were issued with LTVs in excess of 90 percent, but that frequency increased steadily through the 1990s. The increase in high LTV loans reflects the introduction of an entirely new set of mortgage products in the last decade. Specifically, beginning in the early 1990s a number of private sector lenders began offering low-downpayment or even zero downpayment mortgages.[86] These loan opportunities complemented the continued presence

[86] For example, Zero Down™ is an affordable mortgage product offered by Bank of America; it is available in 23 states and Washington, DC. It is a conventional mortgage that requires zero down payment. In

of longstanding low downpayment mortgages issued through government insured programs such as the Federal Housing Administration (FHA). To the extent that downpayment constraints have historically restricted minority homeownership opportunities more so than for white households – a plausible scenario given the lower level of wealth among most minority families – then the introduction of low downpayment loans in the last ten years could have served to reduce racial gaps in homeownership. But of course, such products are also available to low-income white households and, for that reason, their ultimate impact on race and income related gaps in homeownership rates remains uncertain.[87]

4.4 Conclusions Based on the Existing Empirical Literature on Homeownership Gaps

Despite the gains made by minorities since the Civil Rights movement of the 1960s in both economic terms and in legal protection from housing market discrimination, there had been little improvement in minority homeownership rates before the late 1990s—either in absolute terms or relative to white homeownership rates. Studies of racial-ethnic differences in homeownership have consistently found that minority status is significantly associated with a much lower probably of homeownership after controlling for the demographic and economic factors that determine housing demand. Further, the changes in the endowments (income, education, etc.) of minority and white households over this period have not reduced the size of the gap.

The initial studies of the gap in ownership focused on black-white differences, the analysis later being expanded to include Hispanics and Asians. These early researchers assumed that the factors influencing households to become homeowners were the same for blacks and whites and that both groups' behavioral responses to these factors were the same. The studies separated the gap into two components: that due to differences in endowments and an unexplained residual amount. The magnitude of the residual shortfall in the probability of homeownership attributed to race rather than endowments has ranged over time and across different samples from about 5 to 20 percentage points. Over time there was a downward trend in the residual component and studies of new households and movers found single digit gaps in homeownership once differences in endowment were taken into account.

The decrease in the residual component indicates that the unexplained part of the racial gap is shrinking. This could occur because recent studies have used a more comprehensive set of socio-

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addition, closing costs can come from a gift or the seller, or can be financed (see Bank of America 1998). These loans and other affordable mortgage products are typically issued only to individuals with low or moderate income relative to the areas in which they live.

[87] In addition, if there were an offsetting decline in wealth held by minority households in the 1990s, the impact of new low downpayment loans would be reduced. But this seems unlikely given the strong economy. A more realistic issue is that higher LTV ratios imply higher monthly mortgage payments and, thus, higher house payment to income ratios. Although lender standards on such ratios also were relaxed somewhat in the 1990s, for many families low downpayment loans could imply debt service ratios that would be unappealing. In that regard, although the introduction of high LTV loans almost certainly contributed to some of the increase in minority homeownership in the 1990s, the degree of effect is unknown.

economic explanatory variables as the quality of data sets improved. Or, it could be due to a smaller impact of discrimination in the mortgage and housing market. This would be consistent with the establishment over time of a number of policies that monitor mortgage markets and brokerage services and that enforce fair housing laws. To date, most studies that have noted a decline in the residual component of the homeownership gap have attributed this change to reduced discrimination. However, it is clear to us that researchers are now including more and better explanatory variables in their analyses.

The residual gap appears to now be in the range of five to ten percentage points. That magnitude is consistent with the omission of potentially important explanatory variables such as expected mobility, credit histories, income stability, and willingness to take financial risks. Thus, it is possible that a future study using a complete set of all relevant explanatory variables will "explain" the entire racial gap in homeownership. However, it should be emphasized that such a finding would be neither a cause for celebration nor would it imply that there is no discrimination in housing and mortgage markets. Certainly, such a finding should not be construed as providing evidence that existing anti-discrimination laws are obsolete. Just the opposite—if existing laws were eliminated then it is possible that the residual effect component of the racial gap in housing could rise, causing the homeownership gap to rise.

Existing studies also display a number of serious limitations and shortcomings. First, there is often little linkage between the theory of homeownership (as in Chapter 2) and the set of explanatory variables included in empirical studies of ownership gaps. This likely results in the omission of important concepts (e.g. income stability) and it complicates the interpretation of included variables. For example, age and marital status become proxies for expected mobility, while income becomes a proxy for the tax benefits of homeownership. Further, theory suggests that the effects of variables such as income and its interaction with the tax code should have nonlinear effects. Few studies of gaps in homeownership allow for such nonlinearities. Only a recent study by Rosenthal adopts the approach of allowing credit barriers to differ by income class (a form of nonlinearity) and he finds that low income households are affected to a greater extent. This result suggests that policy changes in this arena will affect low-income households more than middle or high-income households and thus relatively benefit blacks and Hispanic's ownership rates because of their lower average incomes. Another general problem with the literature on homeownership gaps is that it trails advances that have been made in the study of the propensity of a given household to become a homeowner. Most current studies of when and whether individual households become homeowners adopt an inter-temporal approach, using information on changes in household circumstances over time to predict future choices. In contrast, apart from the occasional use of permanent rather than current income, studies of homeownership gaps are typically silent regarding inter-temporal aspects of homeownership and instead rely exclusively on current household attributes to predict tenure choice. In many cases, studies of gaps in homeownership appear to have not advanced very much beyond methods used in the 1970s to estimate the probability of homeownership. In contrast, studies of the likelihood that individual households become homeowners have been using panel data and related econometric methods for two decades. While the homeownership literature recognizes that a household's current tenure status will affect its future housing tenure choices, other than Masnick (2001a), there is little recognition of cohort effects in the homeownership gaps literature. The literature on the propensity for homeownership also recognizes that expectations of future events affect current tenure choice decisions, but again the gaps literature, in general, fails to take this point into account.

Summarizing, two broad but compelling conclusions emerge from our review of the literature in this chapter. First, additional efforts targeting discrimination in housing and mortgage markets and a lack of information about the homebuying process are unlikely to narrow racial gaps in homeownership by more than perhaps five percentage points (plus or minus a couple of percentage points). That in turn implies that future efforts to narrow aggregate white-minority gaps should primarily focus on addressing the differences in household circumstances by race and ethnicity – including wealth, income, education levels, and marital status – that account for a large majority of observed differences. Some of these factors can be addressed by efforts to reduce barriers to homeownership associated with income and wealth (such as below market interest rate mortgages or low downpayment programs). But the fact that so much of the homeownership gap is attributable to the generally lower socioeconomic standing of minorities suggests that policies that address broader societal factors will also be needed to close these gaps over time. The factors that are important to supporting homeownership but may fall outside the range of homeownership policies include enhanced job opportunities, job security, and household stability (i.e. marital status). Creating an environment conducive to financial and family security for minorities is a challenging task, but one that policy makers must grapple with if they are to substantially reduce current racial gaps in homeownership. A second conclusion from this review is that there are considerable opportunities for further research to expand our knowledge of the determinants of race-related and income-related gaps in homeownership.

Chapter Five
Policy Options for Reducing Homeownership Gaps

5.1 Introduction

The purpose of this chapter is to identify the policy options that are likely to be most effective in helping to close homeownership gaps by income and race-ethnicity. The chapter begins by cataloging the barriers and deterrents to homeownership and identifying existing strategies for addressing these barriers and the magnitude of these efforts. The chapter then turns to a review and synthesis of studies that have evaluated the impact of various barriers to homeownership on homeownership rates by income and race-ethnicity. While these studies generally do not assess the effectiveness of specific policies, they do provide valuable information about which barriers are most significant in depressing homeownership rates and contributing to differences in homeownership rates by income and race-ethnicity. The final section of this chapter then reviews studies that have evaluated the effectiveness of specific policies. While there is not a rich literature in this area, there are some interesting studies that can help inform policy choices. The chapter concludes with a review and synthesis of these findings and their implications for current policy decisions.

Before turning to the substantive discussion of policy options, it is helpful to consider the magnitude and nature of the homeownership gap issue facing policy makers. As a starting point, it might be expected that the ultimate goal of public policy would be to make homeownership equally likely regardless of income or race-ethnicity. However, as discussed in Chapter 2, homeownership is not necessarily the best option for many households. For example, high transaction costs make ownership very costly for households with a high likelihood of moving, investment risk makes homeownership inappropriate for those with little wealth to risk, while the level of effort to maintain a home may not be suitable for households who either cannot do these tasks themselves or cannot afford to pay someone to do them. Given important differences in household characteristics across income and racial-ethnic groups that relate to these aspects of the demand for homeownership, some share of the observed differences in homeownership rates across these groups may be inescapable and appropriate at the present time.

While the overall difference in homeownership rates between whites and minorities is in the range of 20 to 30 percentage points, the conclusion from the literature reviewed in Chapter 4 is that, once a host of household characteristics are controlled for, the unexplained difference in homeownership rates is about 5 to 10 percentage points. Some share of this unexplained difference may be attributable to factors not adequately accounted for in the statistical models used to make these estimates, but it seems clear that racial discrimination, racial segregation, and differences in an understanding of what is entailed in purchasing a home are important factors as well. An obvious goal for public policy would be to attempt to eliminate this unexplained difference in homeownership rates. But that does not mean that the “explained” differences cannot be the focus of public policy as well. To the extent that homeownership gaps by race-ethnicity are related to generally lower income and wealth and poorer credit histories among minorities, policies that help overcome these barriers can help reduce homeownership gaps. But, as noted at the end of Chapter 4, it is also true that broader efforts to improve the economic success of minorities, leading to higher incomes and wealth

and greater household and economic stability, could have a significant impact on homeownership gaps.

One challenge for policy makers in attempting to narrow homeownership gaps by race and ethnicity is that policies cannot be targeted to minorities. Policies can, however, be targeted by income and, because minorities (at least blacks and Hispanics) disproportionately have lower incomes, efforts to assist low-income households may help close homeownership gaps by race and ethnicity. But there are many low-income white households who will, rightly, also benefit from these efforts. As a result, efforts to aid low-income households may only have a marginal impact on closing racial homeownership gaps. This suggests that as a policy goal it may be more appropriate to focus on raising minority and low-income homeownership rates rather than specifically on narrowing gaps.

In thinking about policy options for closing homeownership gaps it is also helpful to keep in mind the magnitude of the issue. According to the 2003 CPS, there were 13.3 million black households, 11.3 million Hispanic households, and 4.0 million Asian households. In order to raise the homeownership rate of each of these groups by 1 percentage point, there would have to be an increase of 133,000 black homeowners, 113,000 Hispanic homeowners, and 40,000 Asian homeowners, for a total of 286,000 minority households. In terms of income, there were 37.1 million households with income less than 50 percent of AMI and 21.5 million with income between 50 and 80 percent of AMI. In order to raise homeownership rates of these groups by 1 percent there would have to be an increase of 371,000 and 215,000 homeowners in these income classes. Thus, in order to close homeownership gaps by race and income by a single percentage point, public policy needs to assist several hundred thousand households. The implication is that making substantial progress in closing homeownership gaps by income and race-ethnicity will require moving literally millions of households into homeownership. While there have been periods of rapid increases in homeownership rates in the past, goals of that magnitude are likely to take generations to achieve.[88] In the meantime, it seems appropriate for policy makers to focus on incremental gains. As noted, raising minority homeownership rates by one percent represents a quarter of a million new homeowners. As will be seen, the modest goal of raising homeownership rates by a few percentage points is certainly within the reach of variety of policy options and would help hundreds of thousands of households. While this may not substantially close homeownership gaps, it would still represent a substantial success.

5.2 Supply Barriers and Demand Deterrents to Homeownership

The first step in thinking about policies to encourage homeownership is to identify the barriers that prevent households who would prefer to own from achieving that goal. As demonstrated by the conceptual framework presented in Chapter Two, the constraints on homeownership can be divided into supply side factors that present barriers to accessing homeownership for households that would prefer to own and demand side factors that deter households from preferring to own a home. As shown in Exhibit 5-1, there are two main barriers on the supply side: those that place limits on a

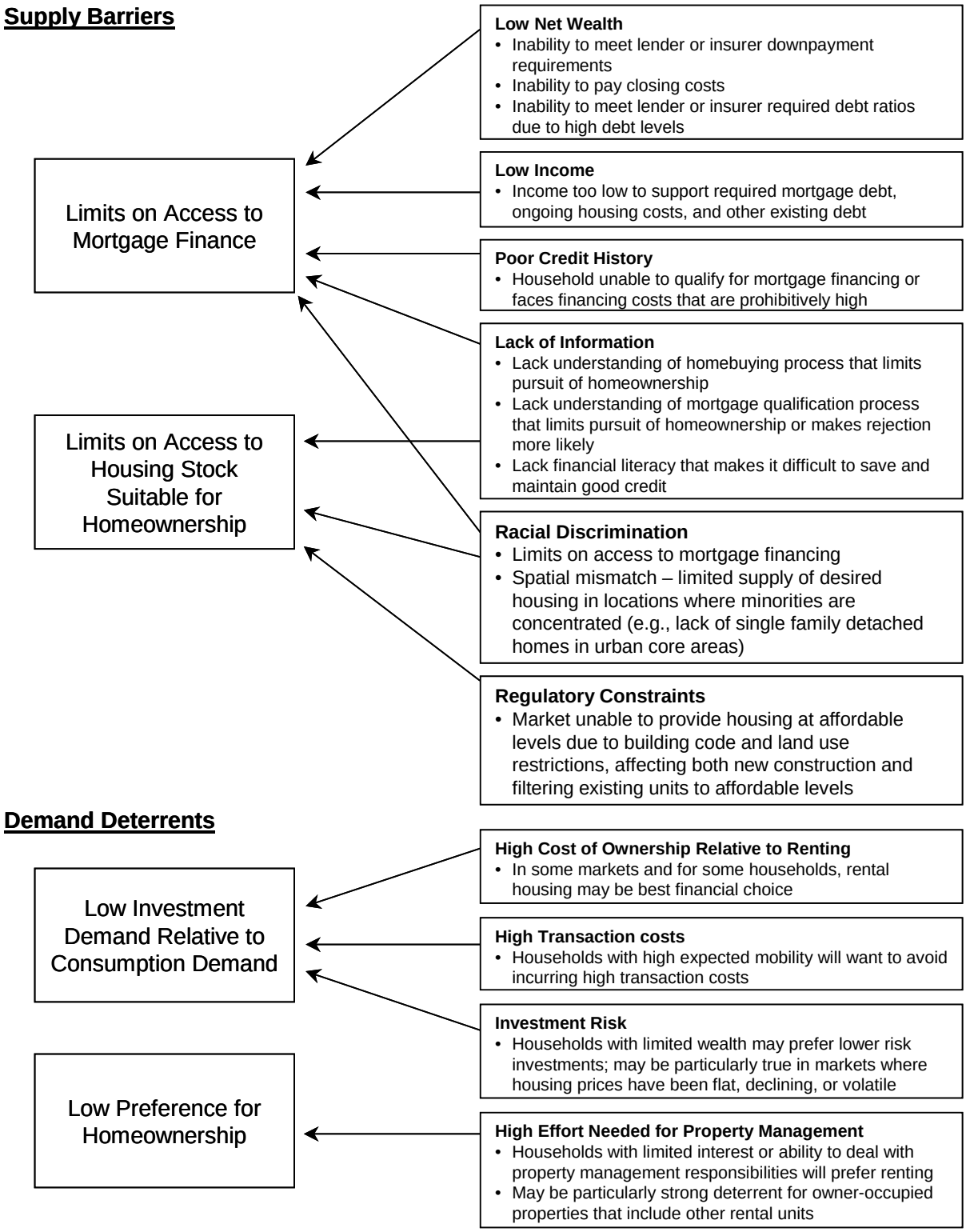
[88] As noted in Section 3.7, projections for homeownership trends by Masnick and Di (2002) suggest that under moderate growth rates in homeownership, there will be substantial growth in the number of minority homeowners, but little change in homeownership gaps. For example, under Masnick and Di's "middle" projection, there would be an increase of 5 million minority homeowners between 2000 and 2010, but white-minority homeownership gaps will only decline by 1.2 percentage points.

household's ability to access mortgage finance and those that limit a household's access to housing suitable for homeownership.[89] On the demand side, households are deterred from preferring owner-occupied housing when their investment demand for housing is less than their consumption demand for housing. Households may also have a lower preference for homeownership aside from considerations of their investment demand. Each of these broad categories of constraints can be linked to more specific factors that produce these barriers or deterrents. The right hand side of Exhibit 5-1 identifies the primary factors associated with each supply barrier and demand deterrent. These specific homeownership constraints are the issues commonly discussed in the literature as the barriers to homeownership (see, for example, Collins, 2002; Collins and Dylla, 2001; and U.S. Department of Housing and Urban Development, 2002). One notable feature of Exhibit 5-1 is that most of the commonly identified barriers to homeownership operate on the supply side by limiting the ability of households to access mortgage financing needed to purchase homes. Each of these specific barriers and deterrents is discussed in detail below.

One of the most prominent and significant barriers to homeownership is ***low wealth***. In order to qualify for a mortgage, households need sufficient assets to meet downpayment, closing costs (including prepaid property taxes and insurance, taxes, and loan fees), and financial reserve requirements. As noted in Chapter 2, the bottom quartile of renters has essentially no savings, and among black and Hispanic renters, half have less then $3,000 in net wealth. Studies of financial constraints on homeownership have consistently found that a lack of wealth is a significant limitation on renters' ability to afford homeownership (Linneman and Wachter, 1989; Savage and Fronczek, 1993; Haurin et al, 1997; and Listokin et al, 2002). For example, Listokin et al. found that 90.8 percent of renters in 1993 could not afford to purchase a modestly priced home, and of these, 95.6 percent were constrained from buying this home by a lack of savings. These same studies also find that many of the households facing a wealth constraint also are limited in their ability to qualify for a mortgage by ***low income***. For example, of all households found by Listokin et al. to be unable to meet underwriting requirements for a modestly priced home, 71.9 percent have incomes that are too low to support monthly mortgage payments and other housing costs. But most of these households also face a wealth constraint, with only 4.4 percent of financially constrained households facing only an income constraint. The analysis by Haurin et al. also confirms the importance of the income constraint as their approach allows households to choose the optimal loan-to-value ratio to minimize

[89] By "suitable" for homeownership we mean that the unit must be available for sale, represent a reasonable financial investment, and provide the attributes commonly associated with homeownership such as privacy and homeowner control over maintenance and improvements to the property. Thus, for example, multifamily housing is often not suitable for homeownership both because individual units may not be available for sale and because common ownership reduces privacy and owner control of the property. Single-family housing that is in poor condition or in declining neighborhoods may also be unsuitable for ownership because of the investment risk associated with these properties.

Exhibit 5-1
Principal Barriers and Deterrents to Homeownership



the impact of both income and wealth constraints, and they find that even modest constraints greatly reduce the probability of owning.[90]

Another common barrier to obtaining mortgage financing is a ***poor credit history***. Mortgage underwriting evaluates a loan applicant's history of repaying debt as an indication of the likelihood of meeting their mortgage obligations. The credit history examines the number of accounts open, payment histories on these and previous accounts, and whether there is a history of bankruptcy or loan default in the past. In addition, the borrower's employment history is considered, with a less stable employment history viewed as a greater credit risk. A poor credit history will lower a household's ability to be approved for a mortgage loan. With the advent of subprime lending, credit impaired borrowers now have greater opportunities to obtain loans, but the higher cost of these loans will still limit homeownership opportunities for these households because the income constraint becomes binding. Avery et al. (1997) examined the distribution of credit scores by neighborhood and individual characteristics and found that lower-income and minority areas have generally lower credit scores, which constrains access by these individuals to mortgage credit. An analysis of data from the Survey of Consumer Finance by Rosenthal (2002) found that the overall homeownership rate is approximately 4 percentage points lower than it would be in the absence of credit constraints.[91]

Another commonly cited barrier to homeownership is a ***lack of information*** on the part of prospective homeowners, which can limit access to both mortgage financing and appropriate housing units for homeownership. A series of ethnographic studies about the homebuying process in minority and immigrant communities summarized in Ratner (1996) provide support for the view that some potential homebuyers have significant gaps in understanding about the process of obtaining mortgage financing. Ratner reports gaps in understanding about how credit agencies and lenders evaluate credit, which led to debt levels and bill paying habits that impaired credit. In some cases a lack of understanding of mortgage underwriting criteria has been found to lead some households to mistakenly conclude that home purchase is out of reach. Collins and Dylla (2001) cite responses to a survey conducted by Freddie Mac that only 49 percent of African-Americans with "good" credit believe their credit is acceptable. A recent Fannie Mae survey further supports these findings (Fannie Mae, 2002). Among other things the survey found that 40 percent of black and Hispanic respondents erroneously believe that a 20 percent downpayment is required to buy a home, while more than half of these groups also believed that you need to have stayed in the same job for at least five years to qualify for a mortgage. Ratner also reports that some renter households who would qualify for homeownership thought that they were likely to be rejected for a mortgage, thus chilling their pursuit of homeownership.

These studies also suggest that a lack of information about the housing search process may limit homeownership. The shortcomings cited by Ratner in this regard include not knowing the role of real estate agents, what the steps in the purchase process are, and how long each step should take. Ratner

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[90] Low-income and low-wealth may also limit the demand for homeownership by lowering the investment demand for housing relative to consumption demand. However, within this framework, the preference for households to avoid the financial costs and risks associated with homeownership are prudent and so not a barrier per se.

[91] In Rosenthal's study, credit constrained households are those who had been turned down for credit in the previous five years or who had been unable to get as much credit as they desired.

hypothesizes that one of the reasons for this shortfall in knowledge is that minority and immigrant households do not have a family history of homeownership, which limits their baseline understanding of the homebuying process. Similarly, the Fannie Mae survey found that 26 percent of blacks reported that if they wanted to buy a home not knowing how to start this process would be a major obstacle and an additional 33 percent identified this as a minor obstacle.

Another potentially important barrier to homeownership is ***racial discrimination*** in housing and mortgage markets. With regard to racial discrimination in mortgage markets, Turner and Skidmore (1999) provide a comprehensive review of the literature on this topic. The strongest evidence of discriminatory treatment is from Munnell et al. (1996) who found that minorities were more likely to have mortgage applications denied even after controlling for most underwriting criteria. This study's conclusions have withstood a vigorous critique by a number of reviewers. Turner and Skidmore also cite studies that have found evidence that minorities are more likely to be offered less favorable loan terms than whites.

Another important strand in the literature related to mortgage discrimination includes analysis of racial differences in default rates as an indication of discriminatory treatment at the application stage. As described by Ross and Yinger (1999a), Becker (1993) popularized the argument that if minorities were discriminated against at the mortgage application stage, then only highly qualified minorities would be approved for mortgages and thus minorities would have lower default rates than whites. Thus, high default rates by minorities provide evidence that there is no discriminatory treatment in mortgage markets. Berkovic et al. (1994) analyzed data on FHA mortgage defaults and found that minorities are more likely to default after controlling for all observable characteristics. Based on the line of reasoning proposed by Becker, the authors conclude that this finding does not support the hypothesis that minorities encounter discrimination in mortgage markets. Ross and Yinger present a variety of arguments for why it is invalid to use default analysis to determine whether discrimination exists at the application stage. One of the criticisms of the analysis by Berkovic et al. is that they did not have measures of borrower credit risk, which might have biased there findings since race and credit scores are correlated. In fact, recent analysis of data on FHA loans by Cotterman (2002), which includes measures of credit scores unavailable to Berkovic et al., found that once these credit risk measures were included in estimated default models the impact of race on default probabilities was generally insignificant and, in at least one case, was actually negative. Even prior to the Cotterman study, based on their review of the literature, Turner and Skidmore concluded that there is no clear consensus regarding the findings from default analysis about discrimination.

A final strand in the mortgage discrimination literature concerns the "redlining" of minority neighborhoods, where lenders avoid lending in minority neighborhoods. The term redlining refers to the historical practice of some lenders of shading maps in red to mark areas where lending was to be avoided. As summarized by Turner and Skidmore and Ross and Yinger (1999b), studies examining the incidence of redlining had been severely hampered by a lack of complete credit information on loan applicants to examine whether mortgage denials are appropriate or are discriminatory. Turner and Skidmore note that there have been three studies that have made use of the data used in the study by Munnell et al. to examine redlining, with two of these concluding there is no evidence of redlining and the third concluding that there is evidence for redlining low-income neighborhoods if not minority areas. In general, both Turner and Skidmore and Ross and Yinger conclude that there is no clear consensus about the prevalence of redlining in recent years.

With regard to limits on access to housing suitable for homeownership, there is a long literature examining the extent to which racial minorities are likely to encounter discriminatory treatment in the housing search process. The most direct evidence of housing discrimination is provided by housing audits, where pairs of households that are similar in all ways except for their race or ethnicity seek information on a specific housing unit. These studies can examine how the housing search experience varies by race or ethnicity. Turner et al. (2002b) provides findings from a national fair housing audit conducted by HUD in 2000, while Yinger (1995) provides a summary of findings from a similar HUD audit in 1989. Both of these studies found that blacks and Hispanics were more likely than similar whites to have units withheld, to be shown fewer housing units, to be offered less assistance in the search process, and to be steered toward minority neighborhoods. However, Turner et al. report that the incidence of discriminatory treatment in the home sales market declined between 1989 and 2000.

Another way in which racial discrimination may impose a housing supply barrier is that minorities' residential location choices may be limited to market areas with limited homeownership potential. These limited choices may be based on racial discrimination or simply strong preferences for certain locations based on neighborhood characteristics. The result is a spatial mismatch between where homeownership opportunities are greatest and where minorities live. To the extent that attractive homeownership opportunities are limited in the areas where minorities are concentrated, households who might otherwise prefer to own a home will instead rent (see the discussion in Chapter 2, and Kain and Quigley, 1972; and Herbert, 1997).

Another factor contributing to limits on the supply of housing suitable for homeownership is ***regulatory constraints*** on housing development. According to this view, land use restrictions and building codes both increase the cost and reduce the supply of new housing and impede the filtering of existing units to affordable levels, with the result that less affordable housing is available. A number of studies have found some evidence for a relationship between declines in affordable housing stock and high levels of regulation (see, for example, Advisory Commission on Regulatory Barriers to Affordable Housing, 1991; Schill and Wachter, 1995; Malpezzi, 1996; Malpezzi and Green, 1996; and Collins, Crowe, and Carliner, 2002).

The bottom section of Exhibit 5-1 lists factors that deter the demand for homeownership. One of the notable aspects of studies examining how many renter households can afford to buy a home is that some share of renter households has the financial ability to purchase a home, but choose to rent. For example, Listokin et al. (2002) find that 5 percent of renter households in 1993 could afford to purchase a home whose value is in keeping with homes purchased by similarly situated households. While homeownership will not be an appropriate housing choice for every household, in some cases these factors that lower homeownership demand may also be appropriate targets of policies to increase homeownership rates.

Several issues stand out as lowering the investment demand for homeownership. For example, some households may prefer not to own because of the ***high cost of owning a home compared to renting***. Goetzmann and Spiegel (2002) present a hypothetical analysis of the cost of owning versus renting based on the tax treatment of rental and owner-occupied properties and differences in the marginal tax rates of low-income renters and rental property owners. Goetzmann and Spiegel show that the greater tax benefits afforded by depreciation schedules and higher marginal tax brackets can result in rental housing costing less than owner-occupied housing for low-income households. In these

circumstances, low-income families may be better off as renters. This suggests that policy interventions that provide greater tax advantages for homeownership by low-income renters would increase demand for homeownership.

Another important homeownership deterrent is the ***high transaction costs*** associated with buying and selling homes. Households with high expected mobility may be better off avoiding these transaction costs by renting. While policy makers could consider options to subsidize transaction costs or to reduce regulatory factors that contribute to these costs, it may be that households with a high likelihood of moving are simply better off renting.

Renters may also be deterred from pursuing homeownership by the ***investment risk*** associated with homeownership. As described in detail in Chapter 2, low-income households will have less investment demand for housing due to their lack of wealth. The issue of investment risk may be most salient in neighborhoods and markets where house prices have stagnated or fallen. Efforts to provide insurance against house price changes could address this constraint.

Finally, aside from concerns about investment demand for homeownership, some households may prefer to rent to avoid having to bear responsibility for the relatively ***high effort needed to maintain and manage the property***. It would be expected that such concerns would be more likely in low-income, single-parent or elderly households with fewer adults able to contribute to maintenance activities and less income available to contract out these efforts. This issue may be more pronounced in markets with a preponderance of multi-unit structures, as owner-occupants must then also act as managers of rental properties. An ethnographic study of minority homeownership in Syracuse noted that some households were deterred from pursuing homeownership by the challenges of owning such multiunit buildings (Hamilton and Cogswell, 1997). In some cases, efforts to provide education and training about homeownership responsibilities may address these concerns and raise demand for homeownership. But in other cases households may simply be better off renting to avoid these responsibilities.

5.3 Existing Policy Options to Address Barriers and Deterrents

There are a wide variety of strategies that have been pursued by public and private organizations to promote homeownership. Exhibit 5-2 categorizes the most common of these efforts, identifies the principal barriers or deterrents they are designed to address, and gives examples of current efforts of this type. In the sections that follow we discuss the nature of these efforts in more detail and, when possible, provide some indication of how many households are assisted annually. By cataloging current efforts to increase homeownership, this information is intended to help identify areas where further efforts might be most warranted.

Exhibit 5-2
Strategies to Promote Homeownership

Strategy	Constraint Addressed	Significant Existing Efforts	
		Description	Estimated Annual Number of Homebuyers Assisted
Downpayment/Closing Cost Assistance in Loans or Grants	Low wealth Low income	HOME	16,000
		CDBG	6,000
		Neighborhood Reinvestment Corp.	7,000
		FHLB's AHP	17,000
		IDAs	Up to 2,500
		State and Local Efforts	Unknown
		Private Efforts	Up to 200,000
Income Subsidy for Mortgage Payments	Low income High relative cost of owning	RHS Section 502	15,000
		Housing Choice Vouchers	250
		Mortgage Credit Certificates	5,000
		Tax deduction for mortgage interest payments	3,331,000 owners with income below U.S. median
Reduce Mortgage Interest Rates	Low income High relative cost of owning	Mortgage Revenue Bonds	125,000
		GSEs favored status	600,000 First-time buyers
Development Cost Subsidy	Supply constraints Wealth constraints Income constraints	HOME	7,000
		CDBG	Unknown
		Habitat for Humanity	6,000
		Various state and local efforts	Unknown
Relaxed Mortgage Underwriting	Low wealth Low income Poor credit	FHA, VA, and RHS mortgage insurance	1,100,000
		GSE Housing Goals	Unknown
		Community Reinvestment Act	Unknown
		Subprime Home Purchase Lending	400,000
Homebuyer Education and Counseling	Lack of information Poor credit Low wealth Property management concerns	HUD Funding	Up to 150,000
		State, local, and private efforts	Unknown
Regulatory Relief	Supply constraints	HUD's Regulatory Barriers Clearinghouse	Unknown
		Trade Association Efforts	Unknown
		National Home Construction and Safety Standards (Manufactured Housing)	300,000
Reduction of Discrimination in Housing and Mortgage Markets	Discrimination	Enforcement of Fair Housing and Fair Lending Laws	Unknown
		Public Reporting requirements	Unknown
		Paired Testing	Unknown
Home Equity Insurance	Investment risk	NRC Syracuse Pilot	About 100

Note: Estimated annual program volumes from most recent year available. See text for sources of estimates of annual program volumes.

As will become evident, one of the most notable features of efforts to encourage homeownership is that they are highly decentralized, with a wide range of activities provided by a wide range of organizations. It is also notable that most homeownership programs that provide subsidies to help low-income households become homeowners are fairly small scale compared to the potential demand for this assistance. There are a number of more widespread efforts to support homeownership, such as federal tax deductions for mortgage interest payments and federal support for the GSEs, but these efforts are only loosely targeted at low-income households or first-time homebuyers, if they are targeted at all, or provide fairly shallow subsidies. The scattershot approach to increasing homeownership presented in this section stands in contrast to efforts to support affordable rental housing, where a few federal programs (Housing Choice Vouchers, public housing, the HOME program, and the Low-Income Housing Tax Credit) account for a large share of national efforts and provide more substantial subsidies for individual households.

5.3.1 Review of Existing Policies

Downpayment and Closing Cost Assistance

One of the most common approaches to promoting homeownership is to provide downpayment or closing assistance in the form of grants or low-cost loans. The primary constraint addressed by this form of assistance is a lack of wealth, but it may also address income constraints by lowering the size of the mortgage needed to finance the purchase.[92] The federal government supports downpayment assistance through the HOME and CDBG programs, both of which are block-grant programs providing funds to state and local governments who determine how best to use this money to meet housing and community development needs. The HOME program regulations require that homeowners aided through the program have income below the area median income. From the HOME program's inception in 1992 through 2002, a total of 178,983 homeowners were provided assistance in acquiring a home, which is an average of 16,000 households a year.[93] Downpayment assistance through the HOME program may increase in coming years as the recently enacted American Dream Downpayment program if fully funded could assist up to 40,000 homebuyers a year. The level of annual funding for direct homebuyer assistance under CDBG is slightly more than a third of that committed through the HOME program, which suggests that this program may assist about 6,000 households annually.[94]

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92 If grants were used to lower outstanding debt levels, this approach could also address income constraints imposed by excessive debt levels. But to our knowledge the use of grants for this purpose is rare.

93 The number of homebuyers assisted is proxied by the number of commitments to acquire homebuyer units using HOME funds as reported in *HOME Program National Production Report*, September 30, 2002 available at http://www.hud.gov/offices/cpd/affordablehousing/reports/production/093002.pdf. While most HOME homebuyer assistance is in the form of downpayment or closing cost aid, support can be provided in other forms (e.g., interest rate write downs). Detailed information on the breakdown of the number of homeowners assisted by type of assistance is not available.

94 The average annual HOME commitment for acquisition of homebuyer units is $118 million, while CDBG expenditures by cities averaged $41 million in fiscal years 2000 and 2001 (see Use of CDBG Funds by Entitlement Communities from http://www.hud.gov/offices/cpd/communitydevelopment/budget/disbursementreports/nationaldisbursements.pdf).

The federal government is also involved in efforts to provide grants or loans to address wealth constraints through the efforts of the Neighborhood Reinvestment Corporation (NRC) and the Federal Home Loan Banks (FHLBs). NRC receives funding from the federal government to support the activities of its local affiliates who in turn partner with local lenders, realtors, foundations and others to promote homeownership among low-income households. Among the support provided by this network are grants or below market interest rate second mortgages that close the gap between the amount of housing affordable to the household and the cost of available housing. The use of loans rather than grants allows organizations to recycle NRC's government funding and also attracts additional funding from banks who may be willing to accept a low rate of return in order to earn credit toward low- and moderate-income lending goals under the Community Reinvestment Act. In 2000, NRC assisted more than 10,000 homebuyers, of whom about 70 percent received either a loan or a grant.[95] The Federal Home Loan Bank's (FHLB) Affordable Housing Program (AHP) is another prominent effort to provide subsidies for low-income homeownership. Each of the 12 member banks contribute 10 percent of their annual net earnings to fund the AHP, which is used to support both rental and owner-occupied housing. The AHP is used to provide both low-cost loans and grants to assist homebuyers with income below 80 percent of area median income. In 2001, the AHP provided assistance to nearly 17,000 homeowners, with an average subsidy of about $5,000 per owner.[96]

Another approach to support the accumulation of wealth to purchase a home is individual development accounts (IDAs). These efforts provide financial management training to low-income households to develop better savings habits. Savings are also encouraged by matching participant savings with public or private funds. The size of the match can range from a contribution equal to the participants' own contribution up to several times the participants' contribution. The federal government initially supported IDAs by allowing states to implement these programs as part of welfare reform efforts. This support was expanded in 1998 with the establishment of the American Dream demonstration program in 13 sites administered by the Health and Human Services Department to investigate the effectiveness and feasibility of a broader effort. There are also a wide range of local efforts funded by coalitions of state and local governments, private firms, and foundations.

Sherraden (2002) estimates that, as of the time he was writing, there were IDA programs available in 40 states with a total number of participants that "does not exceed" 50,000. However, while homeownership is a common use of these funds, it is not the only, or even most common, use. Sherraden reports that among participants in the American Dream demonstration who have tapped their savings, 28 percent used the funds for home purchase, while 23 percent funded small businesses, 21 percent funded education costs, and 18 percent undertook home repairs. There are no estimates that we are aware of about the number of households purchasing homes through IDAs in a year. But if one assumes that the typical IDA participant saves for four years (because most programs have three to five year savings plans), then the upper bound of 50,000 IDA participants would mean there are about 12,500 potential graduates from these programs annually. This share must be reduced by the expected program drop-our rate of about 20 percent (Schreiner and Sherraden, 2002) and then

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[95] NRC program volumes based on special tabulation by NRC staff on data for their Campaign for Homeownership.

[96] Program volumes from "Affordable Housing Program (AHP) Statistics" available at http://www.fhfb.gov/fhlb/fhlbp_housing_stats.htm.

taking the share of participants actually using the funds to purchase a home, estimated to be about 25 percent. Based on these rough assumptions, we estimate there may be as many as 2,500 home purchasers using IDAs each year.

While many state and local governments make use of HOME or CDBG funding for downpayment assistance efforts, there are some other downpayment assistance programs funded by state and local governments, non-profits, and private sector firms that are independent of federal assistance. For example, state housing finance agencies offer downpayment assistance by issuing bonds with slightly above market interest rates. Investors pay a premium for these bonds – that is, more than the face amount of the debt -- which allows the housing agency to use these additional funds to provide downpayment assistance. Because the higher bond rate leads to higher mortgage rates for borrowers, the borrowers pay for the downpayment assistance in the form of higher interest rates. However, in many cases funding from HOME or CDBG is used to leverage other sources of funding. For example, a best practices guide developed by NRC provides other examples of downpayment programs that draw on a wide variety of funding sources (Neighborhood Reinvestment Corporation, 2000). One program cited in this guide is a downpayment assistance program in Buffalo, NY that draws upon funds from NRC, a local bank, and a local church in addition to CDBG. Thus, it is not uncommon for these other downpayment programs to overlap with efforts through HOME and CDBG.

In recent years there has also been growing use of completely privately funded downpayment assistance efforts. As described by Barta and Kim (2002), the model for this program was the Nehemiah Foundation started in Sacramento. Under this model, the home seller, often a new home builder but sometimes sellers of individual existing homes as well, provides a cash contribution to a non-profit organization, which in turn provides a grant in this amount to the homebuyer as downpayment assistance. Beginning in 1998 FHA allowed these grants to count toward the required downpayment on loans it insures, which has led to rapid growth in this approach. In the five years following when HUD began insuring these loans, the Nehemiah program reports having assisted 130,000 homebuyers, or an average of more than 25,000 per year. Other organizations have copied this basic approach and a national organization representing these groups estimates that there may be as many as 200,000 homebuyers assisted per year (Barta and Kim). At these volumes, these privately funded efforts would dwarf those using public funds in terms of the number of homebuyers assisted.[97]

The rapid growth in these private, nonprofit downpayment programs has raised concerns that sellers may simply raise the sales price of homes by the amount of the downpayment contribution. In that case, the true market value of the home is the sales price net of the downpayment grant. To the extent

[97] Industry estimates of the volume of these loans is not inconsistent with an analysis by HUD's Inspector General (Baca, 2002). Based on a review of a sample of FHA loan originations between October 1997 and March 2001, the Inspector General estimates that there were between 80,000 and 136,000 loans insured by FHA using privately provided downpayment assistance over this period. But this analysis also found that the share of these loans was rising rapidly, from about 4 percent of FHA originations in 1999, to about 5.5 percent in mid-2000, and nearly 14 percent by early 2001. With annual origination volumes of 800,000 loans during the period examined by the Inspector General, a 14 percent share would mean that there would have been about 120,000 loans of this type originated annually. Because the share of loans using this type of downpayment assistance was rising rapidly, annual volumes of 200,000 by the end of 2002 are not out of the question.

that this is true, the program essentially allows homebuyers to obtain zero downpayment mortgages under the guise of downpayment assistance. The concern is that in this case buyers would have little or no equity in the property, raising the risk of default. HUD's Inspector General's office issued an analysis of FHA-insured loans through these programs and found that these loans, in fact, have a very high default rate (Baca, 2002). Based on this analysis, the Inspector General has suggested that HUD discontinue allowing downpayment assistance where the seller or homebuilder is either directly or indirectly the source of downpayment assistance.[98]

Income Subsidies

Income subsidies address the constraint on homeownership imposed by low income relative to housing costs. To the extent that the income subsidy is available solely for owner-occupied housing and not rental housing, these subsidies will also lower the cost of owning relative to renting and make ownership more attractive. In contrast to support for rental housing where direct income subsidies are common, support for homeownership rarely takes the form of direct payments to offset housing costs. The largest income subsidy program is the Section 502 Direct Loan Program of the Department of Agriculture's Rural Housing Service. To be eligible for this program, households must have income that is no more than 80 percent of the area median, must be without adequate housing, and must be unable to obtain credit elsewhere despite having a good credit history. The program uses loan limits from FHA's Section 203(b) program. With the payment subsidy, the effective interest rates may be as low as 1 percent. In recent years, this program has averaged about 15,000 loans a year.

Another example of an income subsidy for homeownership is the recent expansion of the housing choice voucher program (formerly known as the Section 8 program) to allow this subsidy to be used to support mortgage payments. In essence, households with housing vouchers are able to apply the subsidy payment toward a mortgage. Several different financing approaches have been developed to work with this subsidy mechanism, with the most common forms either treating the subsidy payment as a form of income to support payment of a single mortgage and another treating the subsidy payment as a dedicated source of funding for a second mortgage. In most cases the income subsidy is not sufficient to make homeownership financially feasible so other grants and loans are combined with this subsidy (Turnham et al, 2002). The volume of households served through these efforts has been fairly small and, given the profile of voucher holders, it is unlikely that there will be a significant number of homebuyers in the future.

Another form of income support for mortgages is the Mortgage Credit Certificate (MCC). This is an option for state housing agencies to convert MRB bond-issuing authority into mortgage credit certificates. Under this program a first time buyer obtains a conventional mortgage from a lender and then obtains an MCC from the state housing agency that provides them with a nonrefundable income tax credit of between 10 and 50 percent of the borrower's annual mortgage interest payments up to $2,000 annually. The tax credit allows the buyer to lower their federal income tax withholding and thus acts as an income supplement. As a rule of thumb, an MCC worth 25 percent of a home's value is equivalent to the interest subsidy provided by an MRB-funded mortgage. The advantage of the MCC is that it does not require the issuance of an MRB and thus the associated administrative and transaction costs from issuing the bond and servicing mortgages. However, the program has not been

[98] There is also pending legislation to enable FHA itself to offer zero downpayment mortgages, which HUD estimates could serve up to 125,000 borrowers a year.

heavily used. Collins (2002) reports that in 1999 only 12 states participated in the program, issuing a total of 5,200 MCCs. He attributes low usage to a lack of familiarity on the part of lenders with this program, the risk that low-income borrowers will not be able to take full advantage of the credit should their income tax liability fall short of the value of the credit, and the housing agencies' loss of revenue associated with managing bond proceeds (since MCCs reduce the agencies bond-issuing authority).

The largest income subsidy for owner-occupied housing is, of course, the deductibility of mortgage interest and property tax payments coupled with the failure to tax the imputed rent on the occupied unit.[99] While the deductibility of mortgage interest payments can be viewed as providing a lower after-tax mortgage rate, we include it as a form of income subsidy in that the lower federal tax liability resulting from the mortgage interest deduction allows homeowners to lower the amount of payroll taxes withheld and so is perceived by the taxpayer as an income supplement. Because these tax savings are only available for owner-occupied housing, this provision clearly makes homeownership more attractive than renting.[100] For households with itemized deductions that exceed the standard deduction, this provision of the tax code provides significant tax savings. Because households with higher-valued homes are both more likely to itemize and face higher marginal tax rates, upper-income households disproportionately claim this benefit. The Congressional Joint Committee on Taxation estimates that the cost to the federal government of the mortgage interest deduction in 2000 was $60.6 billion dollars.[101] A total of 31.8 million tax filers claimed this deduction, averaging $1,900 in tax savings per return. Filers with taxable income above $50,000 accounted for 80 percent of all filers claiming the mortgage interest deduction and for 93 percent of the tax savings. Only about 10 percent of the taxpayers claiming the mortgage interest deduction had income below the national median income and among these households the average tax savings was only $500. Only a small number of very low-income households claim the deduction, including 12,000 with income below $10,000 and 272,000 with income between $10,000 and $20,000.[102] In short, while the deductibility of mortgage interest does increase the appeal of homeownership, given that most of the benefits of this policy flow to higher income households, this incentive does not seem to be important in spurring homeownership for low-income households.

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[99] As Carliner (1998) notes, the special status of mortgage interest deduction came with the 1986 Tax Reform Act, when the deductibility of all other consumer interest payments was rescinded. Property taxes are often included as part of the homeownership tax benefits, but other state and local taxes are also deductible so the property tax provision is not a unique benefit of homeownership.

[100] As discussed in Chapter 2, the tax advantage enjoyed by owner-occupants is not due to the deductibility of mortgage interest payments, since both owner-occupants and rental property owners can claim this benefit. Instead, the tax advantage of owner-occupants is derived from the fact that owners of rental properties are taxed on the value of rental receipts, while owner-occupants are not taxed on the imputed rental income they receive from occupying their own home. Woodward and Weicher (1989) analyze the tax treatment of owner-occupied housing in detail.

[101] See "Estimates of Federal Tax Expenditures for Fiscal Years 2001-2005," prepared for the Committee on Ways and Means and the Committee on Finance by the staff of the Joint Committee on Taxation, April 6, 2001 (http://www.access.gpo.gov/congress/joint/hjoint01cp107.html).

[102] According to the 2000 decennial Census Summary File 3, the national median income in 1999 was $41,994. The Joint Committee on taxation reports the number of low-income filers in income increments of $10,000, so the national median income was approximated as $40,000.

Below Market Interest Rate Mortgages

Another approach to addressing limits on homeownership imposed by a lack of income is to lower borrowing costs. Again, in addition to making homeownership more feasible, these efforts may also make homeownership more attractive by lowering the cost of homeownership relative to renting. The most common source of below market interest rate mortgages are those provided by state housing agencies with funding provided by mortgage revenue bonds (MRBs). Under federal tax law, states are allowed to issue bonds with interest payments that are exempt from federal taxation to support private activities such as home purchases. As of 2004, the total amount of such bonds that each state can issue annually is equal to $80 per resident with a minimum per state of $234 million. Because investors do not have to pay federal tax on the income from these bonds, they require a lower interest rate than on other investments subject to federal tax. This cost savings is passed on to homebuyers in the form of lower mortgage costs. Collins (2002) reports that MRB financing can reduce mortgage rates by as much as 2 percentage points, while the National Council of State Housing Agencies (NCSHA) estimates that the typical homebuyer saves $100 a month from these lower interest rates.[103] Federal law requires that the income of households who use these mortgages must be below the area median income, that the mortgage amount cannot exceed 90 percent of the average area home price, and generally restricts the program to first-time homebuyers. If the borrower's income rises above eligibility levels, they may have to forfeit up to half of the increase in home value on sales that occur during the first nine years of the mortgage. On average, about 125,000 homebuyers are assisted through this program annually.

While not an explicit subsidy, it is also important to note the role of the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, in lowering mortgage costs in the conventional conforming market. Because of both advantages in the form of being exempt from certain fees, taxes, and regulations and an implicit guarantee from by the Federal government, debt issued by the GSEs bears interest rates that are only slightly higher than the rate on Treasury debt. While the precise share of this borrowing advantage that is passed along to mortgagors is subject to debate, most estimates suggest that the GSEs participation in the mortgage market results in mortgage rates that are about 20 to 40 basis points lower in the conventional conforming market (see, for example, Cotterman and Pearce, 1996; and Hendershott and Shilling, 1989), although a recent study by Passmore suggests the subsidy may be as low as 7 basis points (Passmore, 2003). In 2000, the GSEs purchased 2.1 million mortgages used for home purchase (Manchester, 2002). Of these buyers, 27 percent, or 579,000, were first-time buyers. Thus, the lower borrowing costs resulting from the GSEs are one of the most widely used subsidies to support homeownership. Because the advent of housing goals for the GSEs in the mid 1990s, these firms have also made a concerted effort to extend their funding advantage to riskier borrowers by offering loan products that allow higher loan-to-value ratios, higher debt levels, and weaker credit histories. These products have allowed higher-risk borrowers to obtain mortgages at lower interest rates than would be feasible without these products. Of the borrowers whose home purchase mortgages were acquired by the GSEs in 2000, about 12 percent had very low-income and 10 percent were black or Hispanic.

Development Cost Subsidies

The primary goal of a development cost subsidy is to remedy a lack of supply of owner-occupied units at prices affordable to low-income households. In addition to the goal of increasing

[103] See "Housing Bonds Program Fact Sheet" at http://www.ncsha.org/section.cfm/3/34/36.

homeownership opportunities for individual households, these efforts often have important community revitalization goals as well. There are two different market circumstances where development subsidies may be used. In high cost markets, the development subsidy may be used to lower the purchase price below the market value of the unit. In this case the program is also addressing both income and wealth constraints by lowering the financial hurdles to homeownership. On the other hand in depressed housing markets, development costs may exceed the market value of the units. In these areas the development subsidy is used to close the gap between the development cost and the market value. In these cases, the development subsidy is not addressing income and wealth constraints, as the relative low level of housing prices in these areas may make these constraints less important. Rather, the primary goal of these efforts is to support community revitalization by creating better quality owner-occupied housing in depressed neighborhoods.

At present, there are relatively few sources of federal funding to subsidize the development of housing for homeownership. The HOME program is the primary source of funding for this purpose.[104] Between the inception of the HOME program in 1992 and October 2002, HOME program funds had been committed for the construction of 57,740 new units and for the rehabilitation of 22,735 units. On an annual basis, this averages a little more than 5,000 new and 2,000 rehabilitated units each year. As part of its efforts to support increased homeownership opportunities for minorities, the Bush administration has proposed a tax credit that could be used to help write down the cost of developing housing for owner occupants. As initially proposed, this tax credit was intended to support production of 40,000 housing units a year on average over a five-year period at a cost of about $500 million per year (or $12,000 per unit).[105]

In addition to efforts funded through federal programs, there are a variety of efforts by state and local governments using their own funds or other resources to subsidize the development of new housing units for homeownership. Many of these efforts are designed to help revitalize inner city areas. In addition to appropriations by state governments, state housing finance agencies may use unrestricted income from their operations to help fund these efforts. Local governments may also sell tax foreclosed land and structures at minimal cost to spur these efforts. There is little information, however, on how many housing units are produced by these efforts annually.

One of the largest and most prominent private efforts to support the development of new housing units for homeownership is Habitat for Humanity. Habitat uses volunteered labor and charitable contributions of money and materials to build or substantially rehabilitate homes for low-income owners. Homebuyers must contribute significant time to help build their homes as well as a modest downpayment. In return they are able to purchase a home that is priced well below its market value using a no-interest rate mortgage. Habitat operates in all fifty states and produced about 6,000 units in 2001.

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[104] The CDBG program is another source of funding for this purpose, but HUD reports on the use of CDBG funding do not separately identify funds spent for constructing or rehabilitating housing for homebuyers.

[105] For more details, see "A Home of Your Own: Expanding Opportunities for All Americans," George W. Bush, June 2002 and HUD (2003)

Relaxed Mortgage Underwriting

Income, wealth, and credit are barriers to homeownership because households must meet mortgage underwriting requirements in each of these dimensions. Relaxation of mortgage underwriting guidelines is thus an obvious way to reduce these constraints. However, allowing borrowers to obtain loans with lower downpayments, higher debt to income ratios, less cash reserves, and worse histories of debt payment increases the risk of mortgage default. Thus, one of the primary ways to support relaxed mortgage underwriting is to provide insurance for lenders against the costs of default. FHA-insured mortgages have traditionally been the most common financing mechanism used by borrowers who face difficulty obtaining mortgage financing in the private conventional market. FHA has long been recognized as the major source of funding for first-time, low-income and minority homebuyers who are not often able to raise cash for large downpayments.[106] Almost two-thirds of the borrowers with an FHA-insured home purchase loan make a downpayment of less than five percent, and over 80 percent are first-time homebuyers. On average, FHA insured 792,000 mortgages a year between 2000 and 2003, including 633,000 mortgages on average for first-time homebuyers. In addition to FHA's efforts, government mortgage insurance programs through the VA and the Rural Housing Service (RHS) also address this need.[107] In 2001, the VA guaranteed 282,000, and RHS guaranteed 29,000.

The government has also acted indirectly to promote mortgage lending to less than median income borrowers and underserved communities through its regulatory oversight of the mortgage industry. With the passage of the Federal Housing Enterprises Financial Safety and Soundness Act of 1992, the federal government created the authority for HUD to establish housing goals for the GSEs. These goals were an explicit recognition that the benefits provided to the GSEs by the federal government have a public purpose. As discussed above, through the housing goals the federal government could encourage the GSEs to expand the provision of mortgage credit to targeted borrowers and communities. The increased range of mortgage products during the 1990s with relaxed underwriting requirements was in part the result of the GSEs seeking to meet their housing goals. It is difficult to evaluate the impact of the goals on the overall level of mortgage activity. For example, a recent study by Ambrose et al. (2002) examined this question and concluded that there is no direct link between total mortgage lending volume and the number of census tracts that meet HUD's underserved definition (areas that are the focus of one of the GSE housing goals). The authors do conclude, however, that the GSEs' purchases of seasoned loans increases mortgage lending activity, but they do not offer estimates of the magnitude of this impact.

A related effect can be linked to the Community Reinvestment Act (CRA), which requires depository institutions to show that they are meeting the needs of low-income communities in the area from which they take deposits. In order to meet CRA-related lending goals, depository institutions have had to develop mortgage products that enable lower-income households to qualify for mortgage credit. (Studies assessing the impact of these regulatory efforts on homeownership are discussed later in this chapter.) While there have been a variety of studies examining the influence of CRA

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[106] For discussions of the role of FHA in the mortgage market, see Bunce et al. (1995) and HUD (2000).

[107] While private mortgage insurers have traditionally served lower risk households, during the 1990s these firms began to offer more aggressive products that would serve lower income and higher risk borrowers. However, because these mortgages are eligible to be purchased by the GSEs, these loans will fall within estimates of the GSE loan volumes.

regulations on lending to low- and moderate-income borrowers and neighborhoods, most of these studies have focused on the share of lending to these groups rather than on overall volumes of lending (see, for example, Belsky et al, 2001, and Apgar et al, 2002).

Another change in mortgage markets over the last decade that can address the constraints imposed by conventional underwriting is the growth in subprime mortgage lending. Between 1993 and 2001 the number of loans reported in HMDA by lenders primarily engaged in subprime lending increased 10-fold, from 100,000 loans to over a million loans for refinancings and home purchase. Subprime loans provide borrowers an opportunity to obtain mortgage funding even if they have impaired credit, income levels that are low compared to their housing costs or total debt levels, or seek loan amounts that exceed the value of their home. Prior to the advent of subprime lending it was difficult for homebuyers or homeowners to find sources of mortgage financing if they failed to meet conventional underwriting guidelines. But while subprime lending does open up greater borrowing opportunities for some households, borrowers do face higher interest rates and fees to compensate lenders for the higher risks of these loans. Most subprime loans have actually been used to refinance existing mortgages, and so have not been used to spur increases in homeownership. But there has been fairly rapid growth in subprime loans for home purchase—particularly minority homebuyers—which means these loans could potentially contribute to increases in homeownership rates. While a majority of subprime loans are refinancings, Acorn (2002) shows that 297,000 homebuyers in 2001 used subprime loans to purchase their home, including 70,000 black or Hispanic homebuyers. By 2001, subprime lenders have come to account for a fairly significant proportion of home purchase loans for minorities. Among black homebuyers, 26 percent used subprime lenders, compared to 15 percent among Hispanics, and 7 percent among whites.

However, it is not clear whether the high share of subprime lending among minorities represents an increase in the availability of mortgage financing or whether minorities are paying more than necessary for their loans. There is a wealth of anecdotal evidence that along with the growth in subprime loans has come an increase in predatory practices that take advantage of borrowers' lack of familiarity with the mortgage market to charge fees and interest rates far in excess of that needed to offset risk (see, for example the joint report on predatory lending by HUD and Treasury, 2000). In some cases, these loans may also be underwritten without regard to a borrower's ability to repay the loan, thus making default and foreclosure inevitable. These predatory loans also include loan terms and conditions that limit borrowers' ability to get out of these problem loans. A number of studies have found that subprime lending appears to be disproportionately concentrated in black and Hispanic neighborhoods as subprime lenders have higher market shares among high-income minority areas than in low-income white areas (see, for example, Scheessele, 2002; ACORN, 2002; and Bradford, 2002). While these studies suffer from a lack of information about credit risk that is needed to demonstrate that subprime lending is inappropriately concentrated in these areas, a recent study by Calem et al. (2002) of lending in Chicago and Philadelphia has incorporated better measures of neighborhood credit risk and found that at least for blacks subprime lending shares are not fully explained by measures of risk at the neighborhood level.

Studies of the use of subprime lending have been hampered by a lack of solid information on these loans. Most studies have relied on HMDA data, with subprime loans identified indirectly based on information about the general nature of lending by the entity originating the loan. These data, however, lack information on borrowers' risk profiles and the costs of the loan to fully evaluate the nature of subprime lending. In short, based on the limited available evidence, it is not clear whether

the advent of subprime lending has on net been a favorable development for fostering homeownership given the tendency for these loans to bear excessive interest rates and fees and increase foreclosure risk.

Homebuyer Education and Counseling

The purpose of homebuyer education and counseling is both to address the information gaps about the homebuying and mortgage approval process that may limit a move to homeownership and to better prepare these households for homeownership to reduce the risk of default and the loss of their home. In addition to addressing information gaps about the homebuying process, education may also address wealth and credit barriers by educating potential buyers about the amounts of savings needed to qualify for a mortgage and the steps needed to enhance their credit history. The more recent emphasis on financial literacy and management training as part of the homebuyer education process is intended to further enhance the ability of these services to address credit and wealth barriers.

As described by McCarthy and Quercia (2000), homeowner counseling had its genesis in the Housing and Urban Development Act of 1968 that included provisions for a housing counseling program. McCarthy and Quercia note that during the 1970s and 1980s, homeownership counseling focused primarily on assisting financially troubled homeowners rather than on preparing households to become homeowners. These authors contend that changes to the Community Reinvestment Act in 1989 led to an increased emphasis on pre-purchase counseling as a means of identifying and screening potential homebuyers in the low-income and minority market segments where lenders had previously had little lending experience. During the 1990s the use of pre-purchase homebuyer education and counseling grew rapidly with support from both government and private organizations.

One of the challenges for lenders and insurers who were seeking to use education and counseling to prepare borrowers for homeownership is that there is a tremendous range in the nature of services provided. At the one extreme a potential borrower might meet individually with a counselor to review the household's specific circumstances to help guide them toward homeownership. At the other extreme, homeownership education may entail giving a household a pamphlet that describes the homebuying process. In between these extremes, services range from group classroom sessions to individual counseling by phone. As a result, it can be difficult to know how well education and counseling has prepared a household for homeownership. In addition to variety in the type of services provided, there is also great variety in the organizations delivering the services, including non-profit organizations, state and local governments, and private sector firms such as lenders, mortgage insurers, and real estate agents (Hirad and Zorn, 2002).

Given the wide variety of organizations involved in providing homebuyer education and counseling, it is difficult to estimate how many households receive assistance in a year. One estimate for a large segment of the homebuyer education market is based on the number of clients served by organizations that receive funding through HUD. Each year HUD provides financial support for housing counseling agencies under Section 106. Most recently, HUD provided almost $25 million in funding. Roughly one-third of this funding was provided directly to 350 HUD-approved counseling agencies, one-third was provided to national intermediary organizations who in turn pass funding on to their affiliates (including the Neighborhood Reinvestment Corporation, ACORN, National Foundation for Consumer Credit, and Catholic Charities USA), and one-third to state housing finance agencies. Altogether, this funding reached more than 1,200 agencies. While it is difficult to track exactly how many households were assisted by these organizations, the best estimates suggest that

between 120,000 and 150,000 households are served each year (Collins, 2002). As noted above, in addition to these HUD-funded efforts, there are significant homebuyer education and counseling efforts by private sector firms as well. In addition, some non-profits do not participate in HUD funding because they feel that too little funding is available for any one agency to make it worthwhile to take on the administrative requirements and other restrictions that accompany HUD funding (Collins, 2002). As a result, the actual number of households receiving some form of counseling may be several times the number funded by HUD.

Reduction of Regulatory Barriers

A commonly cited cause of high home prices is excessive regulation in the form of both building codes and land use zoning. Because local and, to a lesser extent, state governments have control of these regulations, there is generally little that the federal government can do directly to reduce regulatory barriers to affordable housing development. However, since the early 1990s HUD has worked to try to disseminate information about the impact of regulatory barriers on housing costs and ways in which these barriers could be reduced. HUD's Regulatory Barriers Clearinghouse, established by the American Homeownership and Economic Opportunity Act of 2000, serves this function of gathering and disseminating information to identify and address regulatory barriers to affordable housing development. Most recently, in June 2003 HUD launched its "America's Affordable Communities Initiative" with the goals of promoting education on the impact of regulatory barriers on affordable housing, conducting research on the way regulation impedes the creation of affordable housing, creating partnerships with outside organizations to further these goals, and providing incentives to state and local governments to find ways to remove regulatory barriers to affordable housing development.

In addition to HUD's efforts, trade associations, most notably the National Association of Homebuilders, have also worked to identify regulatory barriers and ways in which these barriers could be reduced. However, it is impossible to estimate how many households a year benefit from these efforts in terms of lower housing costs.

A more quantifiable effort to reduce regulatory barriers is provided by the number of homes built under the Federal Manufactured Home Construction and Safety Standards issued by HUD (the HUD code), which govern the construction of manufactured homes (formerly referred to as mobile homes). The HUD code resulted from 1976 legislation that sought to bring quality standards to the growing number of mobile homes that had escaped local regulation. However, while these homes must have a permanent chassis in order to qualify for regulation by HUD's code, these units have come to resemble standard housing units more and more over time, with the size and quality improving and a greater share being placed on lots that are owned rather than on leased land. Because these units are factory built and because the HUD code is less onerous than local building codes, the development costs of these units is estimated to be lower than for comparable site-built homes (NAHB Research Center, 1998). However, part of this development cost advantage can be eliminated by the higher interest rates and shorter terms of loans typically used to purchase these units. Manufactured homes have come to account for a large share of the first-time homebuyer market. Collins (2002) reports that manufactured homes were purchased by 14 percent of all first-time buyers between 1997 and 1999, while among households with income below 80 percent of area median income this share was 21 percent. During the 1990s, the annual number of manufactured home placements was in the low 300,000 range, although placement volumes fell to 281,000 in 2000 and then to 135,000 by 2003.

Reduction of Discriminatory Treatment

There are several ways in which government and community advocacy groups work to reduce discriminatory treatment in housing and mortgage markets and thus increase the range of housing options available to minorities. First, by enforcing laws and regulations prohibiting discriminatory treatment, government agencies can both stop specific instances of discrimination and can inhibit discriminatory treatment generally by demonstrating the violators will be identified and punished. Among the laws that prohibit discriminatory treatment are the Fair Housing Act, the Equal Credit Opportunity Act, and the Federal Housing Enterprises Financial Safety and Soundness Act. As of 1988, amendments to the Fair Housing Act greatly enhanced the enforcement mechanisms available to HUD and the Department of Justice (DOJ), with a resulting increase in enforcement actions by these agencies (see Lee, 1999; and Schill and Friedman, 1999). While the number of cases that have reached a settlement or judgment for the plaintiff has been relatively small (a few thousand cases over the period from 1989 through 1997 according to Schill and Friedman), these efforts have the potential for fairly broad impact by the message they send to others in the market. However, as both Schill and Friedman and Yinger (1999) have noted, enforcement efforts have generally focused on discrimination in rental markets rather than the housing sales market.

Another approach used to combat discriminatory treatment in housing finance is the requirement that lenders report information on their lending activity (LaCour-Little, 1999). Both the Home Mortgage Disclosure Act (HMDA) and the Community Reinvestment Act (CRA) require that lenders report on their lending activities. This public reporting provides an opportunity for both regulators and the general public to scrutinize lenders actions and put pressure on them to improve their performance. The CRA allows regulators to deny mergers on the basis of poor performance on CRA-defined measures, which has provided community groups with a powerful tool to encourage bank efforts to lend to low-income and minority borrowers. While HMDA does not provide any enforcement mechanism, the availability of information on the characteristics of mortgage applications has also been a powerful tool for monitoring lender activities.

A final method used to combat discriminatory treatment is the use of paired-testing to identify cases of discriminatory treatment (see Fix and Turner, 1999, for a thorough discussion of the use of paired testing to identify discriminatory treatment). Paired testing entails sending two clients to the same organization –generally a real estate agent or lender – to seek information on housing available for rent or sale or to apply for a mortgage. The clients are given comparable characteristics in all dimensions except for their race or ethnicity. Thus, any differential treatment of the clients is an indication of discrimination. Because discriminatory treatment may be subtle, involving the withholding of information or steering toward specific homes or mortgage products, individuals may not perceive that they are being discriminated against. By comparing the experience of the two clients, paired-testing can reveal these subtle forms of discrimination. Paired testing can be used to examine the practices of a specific institution or can be used to examine the prevalence of discriminatory treatment generally in a market area. HUD has undertaken three national-scale paired-testing examinations of racial discrimination in the sales and rental markets (see Turner et al, 2002b for a description of these efforts). There has not been a similar effort to examine discriminatory treatment in mortgage markets, although HUD did undertake a study of two market areas that was intended to lay the groundwork for more extensive testing (Turner et al, 2002a).

Home Equity Insurance

One issue that may deter households from pursuing homeownership is a fear of declining home prices that would wipe out their investment in the home and leave them paying more than the market value of the house over time. Concern about falling home prices can also be a self-reinforcing phenomenon. As prices decline, potential homebuyers may avoid purchasing a home, lowering demand in the area and contributing to falling prices. An innovative pilot program was begun in Syracuse, NY in 2002 to address this problem. A team comprised of the Neighborhood Reinvestment Corporation, faculty from the Yale School of Management, and Freddie Mac developed Home Equity Protection (HEP) insurance for the city of Syracuse. Under this program, homebuyers pay a one-time fee equal to 1.5 percent of the insured value of their home (usually the purchase price, but potentially less) to obtain insurance against declines in home prices. The insurance goes into effect three years after purchase. After that time, when the buyer sells the home they will receive an insurance payment to compensate for any declines in average home values in their zip code. The amount of the insurance payment is equal to the percentage decline in house prices in their zip code since the time they bought the home multiplied by the amount they insured. Because the insurance payment is not based on changes in the value of the insured home value, but rather home values generally in the zip code, buyers are not penalized for maintaining, or even improving, their homes. While this is a small-scale pilot, if successful it may have potential as a community revitalization tool. During the first five months the insurance was available, 40 homebuyers purchased insurance (an annual rate of about 100 homebuyers).

5.3.2 Summary of Existing Efforts to Support Homeownership

While the list of programs designed to support homeownership is long, the number of households served annually by programs that provide financial subsidies with the purpose of helping low-income households purchase homes is not large. The broadest efforts to support homeownership are the deductibility of mortgage interest payments from federal taxes and reduced mortgage costs through the favorable treatment of the GSEs, which are targeted at low-income households by the GSE housing goals set by HUD. However, the benefits of the mortgage interest deduction mostly accrue to higher income households and the reductions in homeowner costs from the GSEs lower interest rates are fairly small. As will be discussed more in Section 5.5, it is also not clear how many of the households assisted by any of these efforts would not have been able to purchase homes without this assistance. Thus, the count of households served by these efforts is an upper bound estimate of the number of homeowners fostered by public policy.

The principal programs providing downpayment and closing cost assistance are those funded by HOME and CDBG or run by NRC and the FHLB. In total, we estimate that these efforts serve about 50,000 households a year. Private efforts by non-profit organizations to provide downpayment assistance have grown rapidly in recent years, but it is not clear given the nature of these programs whether the buyers are truly receiving downpayment assistance or whether these organizations have simply developed a clever way of turning a zero percent downpayment loan into what looks like downpayment assistance. In contrast to rental housing assistance efforts, direct payments to homebuyers to subsidize income is rarely used. The primary efforts of this type include the Rural Housing Service Section 502 direct subsidy program, the Mortgage Credit Certificates that can be issued using state allocations of bonding authority, and Housing Choice Vouchers which can now be used to support home purchase as well as rental housing. In total, we estimate that these efforts serve about 20,000 households a year.

By far the largest income subsidy for homeownership is the ability to deduct mortgage interest payments from taxable income. But relatively few low-income homeowners claim this deduction, with only 3.3 million taxpayers with income below the national median income taking advantage of this tax benefit in 2000. The tax subsidy for these households is relatively shallow, averaging about $500 per taxpayer. And, of these, only a small share of these households would have been new homebuyers in 2000.

Aside from the tax deduction for mortgage interest payments, the single largest effort to directly subsidize homeownership costs for low-income first-time homebuyers is through Mortgage Revenue Bonds (MRBs) issued by state housing agencies. By excluding the interest payments on these bonds from federal taxation, state housing agencies are able to offer mortgage loans that are up to two percentage points below market rates, resulting in mortgage payments that are about $100 lower per month. This program assists an average of 125,000 homebuyers a year. The government also indirectly subsidizes mortgage costs through the special status granted to the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac. The general consensus of most research is that the GSEs favored status results in a reduction in mortgage interest rates of 20 to 40 basis points, although a recent analysis suggests that the reduction may be as low as 7 basis points (Passmore, 2003). While this is a relatively shallow subsidy, it is one of the most widely available forms of assistance with the GSEs purchasing about 600,000 mortgages for first-time buyers in recent years.

Perhaps the least used form of assistance for homeownership is development cost subsidies. The primary source of government support for these efforts come through the HOME and CDBG programs. The number of homes produced annually by these efforts is fairly small, with HOME producing about 7,000 units. Habitat for Humanity is one other notable effort to supply affordable housing units for home ownership. But again, the annual number of units produced by through these organizations is fairly small – about 6,000 units per year.

There are also a variety of efforts to address homeownership barriers that do not provide financial subsidies. Principle among these are efforts to relax mortgage underwriting constraints. Federal mortgage insurance programs are a significant effort in this regard, with FHA, VA, and RHS mortgage insurance and guarantees help about 1.1 million homebuyers annually. In addition, the housing goals established by HUD for the GSEs and the Community Reinvestment Act spur private lenders to extend mortgage credit to borrowers who might otherwise not qualify for standard mortgage products, but it is difficult to quantify the magnitude of the impact of these regulations on overall mortgage volumes. Subprime lending is another example of the way in which mortgage markets have evolved to make mortgage credit more widely available, although the potential for charging borrowers higher rates and fees than necessary given their credit risk offsets to some extent the benefits of this innovation in the market.

Other efforts to increase homeownership that include efforts to provide homebuyer education and counseling, reduce regulatory barriers to affordable housing production, reduce discriminatory treatment in housing and mortgage markets. While all of these efforts may help improve opportunities for low-income and minority households to purchase homes, it is difficult to estimate how many households are able to become homeowners each year as a result of these efforts.

5.4 Estimates of the Potential for Policies to Increase Homeownership

There are number of studies that have examined the potential for increasing homeownership by reducing the constraints faced by minority and low-income households who would potentially be interested in becoming owners. These studies provide insights both about the magnitude of potential increases in homeownership rates from different policy approaches and about which groups of renters are most likely to make the transition to home ownership. The literature in this area can be divided into three categories based on the methodology used to estimate the potential for increasing homeownership rates. We refer to these three types of studies as ***benchmarking***, ***synthetic underwriting***, and ***constrained tenure choice models***.

The ***benchmarking*** approach consists of comparing the ownership rate of specific population subgroups defined in terms of characteristics such as race and ethnicity, income, age and family type, to a control group that is assumed not to face barriers to homeownership—generally white households. In this way, the actual homeownership attainment of the control group serves as a benchmark against which to compare the ownership attainment of comparison groups that are identical with respect to these key features that affect households' likelihood of owning their homes. For example, these studies might compare the homeownership rate of white and black married couple households without children between the ages of 25 and 29 with no children and income between 80 and 100 percent of the area median income. The comparison thus isolates differences in homeownership associated with race while controlling for age, income, and household type. This type of analysis is most useful for evaluating the number and likely characteristics of households who would become owners if policy were successful in narrowing existing homeownership gaps by race and income. The most comprehensive study employing this methodology is Eggers and Burke (1996). HUD used their analysis in the mid-1990s as a tool for examining the potential impact of homeownership policies on the gaps between different racial/ethnic groups and among households at different income levels.

However, as Eggers and Burke note, this model does not help understand the cause of the remaining homeownership gaps once race, age, income, and household type are taken into account. Without any measures for the causes of these gaps, the model is also unable to test the potential efficacy of any specific policies to increase homeownership. Instead, the model is used to evaluate the impact on overall differences in homeownership by race and income of closing gaps by a specified amount. Eggers and Burke suggest that a reasonable target for housing policies emanating from government, industry, and the non-profit sector would be a 20 percent reduction in both income- and race-based homeownership gaps. Their technique allows them to calculate the impact that such a change would have on overall ownership attainment, and its distributional effects across various population subgroups. These results can be viewed both as targets for policy outcomes and as standards for policy assessments.

For purposes of this study, the synthetic underwriting and constrained tenure choice models offer greater insights into the potential for different policy approaches to increase homeownership rates. The ***synthetic underwriting*** approach estimates the potential for increasing homeownership among renter households by comparing a target house value (sometimes referred to as a reference or criterion house value), that is meant to represent an appropriate housing alternative for that household, to the

house value that a household could afford given its income, savings, and debt levels assuming various mortgage underwriting guidelines, subsidy programs, or efforts to lower housing or transaction costs. If the household is able to meet the assumed mortgage underwriting guidelines for the target house value under assumed market conditions they are deemed to able to afford homeownership, otherwise homeownership is deemed to be out of reach. In comparison to benchmark analysis, this approach allows researchers to evaluate the potential impact of specific policies aimed at reducing financial constraints on the number of renter households who could afford to purchase a home of the target value or lower.

But while a synthetic underwriting approach is able to test the impact of very specific changes in underwriting or housing costs, there are a number of significant limitations of this approach for estimating impacts on homeownership rates. To begin with, by taking renters' current financial circumstances as a given rather than something that renters can choose to improve, this approach underestimates the potential for increasing homeownership. That is, households who are planning on transitioning to homeownership in the near future can alter their hours of work and their savings habits to increase income and wealth. Renters may also receive gifts from others to improve their circumstances. Haurin, Hendershott and Wachter (1996), for example, provide evidence that renter households' wealth accumulates rapidly beginning a year before a move to homeownership. Policy changes may have an impact on homeownership rates both directly, by enabling more current households to qualify for homeownership, and indirectly, by changing people's expectations about the feasibility of attaining homeownership and thus inducing greater efforts to save and to increase income to achieve homeownership. The static nature of the synthetic underwriting approach cannot capture these dynamic changes in household circumstances. In fact, as will be discussed more below, Listokin et al. (2002) found that many of the households identified in their analysis as financially constrained had, nonetheless, purchased homes over the two-year period they examined.

Another limitation of the synthetic underwriting approach is that it only considers the ability of a household to purchase a home, but cannot gauge the household's willingness to purchase. As discussed in Chapter 2, there are a number of reasons why ownership may not be optimal for a household, even if purchasing a home is financially feasible. In this regard, the synthetic underwriting approach may overestimate potential increases in homeownership because not all of the renter households freed from financial constraints by a change in policy would actually choose to become homeowners.

Given these limitations of the synthetic underwriting approach, estimates of the magnitude of potential changes in homeownership rates based on this type of analysis may not be as accurate as those derived from constrained tenure choice models. But these models do provide insights into the relative importance of different financial constraints on homeownership rates. The comparison of findings across different mortgage products and different changes in underwriting assumptions are informative about which aspects of the mortgage qualification process are most binding for low-income households.

In comparison to synthetic underwriting, the ***constrained tenure choice models*** examine how the *probability* of homeownership for different types of households might be affected by changes in specific household attributes or in the environment in which the tenure choice decision is made. So even households with a low probability of moving to homeownership can contribute to potential changes in homeownership rates. These models also incorporate household characteristics that are

known to be associated with demand for homeownership such as marital status, age, and the presence of children in the family. Thus, they include measures of the preference for homeownership and not just the financial ability to qualify for a home. In addition, these models are likely to include measures of permanent income rather than just current income and therefore are better able to capture the dynamic ability of households to modify their income to achieve homeownership. However, for the most part, these models take wealth as given rather than making wealth endogenous, and so do not allow for the fact that households can alter their savings in anticipation of homeownership.[108]

There are two general types of constrained tenure choice models. One approach includes measures of financial constraints in the tenure choice model and then simulates changes in the probability of ownership associated with reductions in these financial constraints. The other general approach estimates a tenure choice model over a group of households that are identified as unconstrained by the barrier of interest (such as borrowing constraints or discrimination) and then this unconstrained tenure choice model is applied to all households to estimate the impact on homeownership rates for specific household types. A limitation of these models for policy makers is that they generally cannot isolate the potential of specific policies to influence homeownership rates. For example, while they may indicate that a reduction in barriers to obtaining mortgage financing could increase homeownership rates by up to several percentage points, the models do not indicate which approach to reducing borrowing constraints is likely to be most effective.

In general, models of constrained tenure choice provide estimates of homeownership potential that are larger than that found by synthetic underwriting models. This difference appears to be related to the fact that synthetic underwriting models take household financial circumstances as given, while tenure choice models inherently allow for the ability of households to change their financial circumstances. Given the advantages and limitations of these two modeling approaches, it is probably most helpful for policy makers to combine the findings from these two types of analysis to consider the potential impact of homeownership rates of different policy approaches. The tenure choice models may provide a more realistic estimate of the potential for increasing homeownership rates than synthetic underwriting models, while synthetic underwriting models provide greater insight into the relative impacts of specific policies or underwriting innovations.[109] These two types of studies are reviewed in detail in the next two subsections. This section concludes with a synthesis of the findings from this literature.

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[108] A notable exception is Haurin, Hendershott, and Wachter (1997), which includes an endogenous measure of wealth. However, this study does not present estimates of the change in the number of renters that would be expected to own with a change in financial constraints and so is not reviewed extensively.

[109] One limitation of tenure choice models, which applies to synthetic underwriting as well, is that they focus on the potential for increasing homeownership solely by converting existing renter households into homeowners. However, a not insignificant share of new homebuyers comes from newly-formed independent households. Preliminary research for a forthcoming study by Haurin and Rosenthal suggests that approximately a quarter of new homebuyers did not previously head an independent household. Most of these buyers either lived with parents or lived in institutional settings (such as school dormitories or military housing).

5.4.1 Synthetic Underwriting Studies

A critical issue for synthetic underwriting analysis is how to specify the home price used to evaluate whether renter households can afford to purchase a home, referred to by various authors as either the criterion or target home price. Savage and Fronczek (1993), one of the earliest and most careful examples of the synthetic underwriting approach, employ a range of home values as targets, including the median values of all homes, new homes, and condominiums, and the values of homes at the 10th and 25th percentiles of the house value distribution.[110] A criticism of this approach is that it does not take into account how these house values correspond to the preferred home for each household. It may be that many households can afford a home at the 10th or 25th percentile of the home value distribution, yet for many households these homes may not be accepted as suitable places to live or to invest in. Using data from the 1988 National Survey of Families and Households, Calhoun and Stark (1997) improve on the synthetic underwriting approach by developing an econometric model to predict the house value that would be chosen by renters. This model relates the value of owner-occupied housing to household and market characteristics. The estimated coefficients of this model are then applied to the characteristics of renter households to estimate the house value that would be chosen by each renter household.[111] This approach builds on methods used in studies that estimate models of constrained tenure choice, notably Linneman and Wachter (1989), to estimate the target house value.

Another issue for synthetic underwriting studies is the range of underwriting criteria used to evaluate which households can afford to purchase a home. Savage and Fronczek (1993) employ standard underwriting criteria used for FHA and conventional mortgages, while updates of this analysis by Savage (1997, 1999) extend this work to include estimates of the number of households who could afford to purchase a home under a wide range of scenarios, including lower downpayment requirements, lower interest rates, and cash grants. Calhoun and Stark also examine the number of renters who would be able to purchase a home under a range of mortgage underwriting guidelines with variations in the loan to value ratio, front- and back-end ratios, and interest rates.[112]

Listokin et al. (2002) build on the recent work of Savage and Frocznek and Calhoun and Starks to provide the most thorough, analysis of the potential for different mortgage products to lower homeownership constraints.[113] Like Savage and Frocznek, they use SIPP data (in this case from 1993-95) to provide precise estimates of renters' income, assets, and debts to evaluate their financial circumstances and incorporate estimates of taxes, insurance, closing costs and fees to closely mimic the actual underwriting process. Like Calhoun and Starks they estimate a regression model of house values to provide an estimate of the most appropriate target house price for renter households if they

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[110] These house values are estimated for central cities, suburbs, and non-metropolitan areas of the nine census geographic divisions.

[111] Of note, they focus exclusively on the value of single-family properties as the target house value.

[112] The front-end ratio is the ratio of housing costs (principal, interest, taxes, and insurance) to income, while the back-end ratio is the ratio of housing costs plus the cost of total recurring debt (e.g., auto and student loans, credit card debt, etc.) to total income.

[113] More abbreviated findings from Listokin et al (2002) are published in Listokin et al (2001). Our review focuses on the more detailed study.

were to pursue homeownership.[114] An advantage of this study over the previous work is that the authors examine the impact of a broad range of both mortgage product innovation and general policy approaches on the number of renter households who can afford a home. Listokin et al. employ underwriting criteria for 15 specific mortgage products, including a number of the more flexible options developed during the 1990s to expand the range of households served (see Exhibit 5-3 for a list of these products). In addition, they also examine the impact of a wide range of potential policy options that would lower interest rates, lower downpayment requirements, lower mortgage insurance costs, reduce transaction costs, lower housing prices, supplement borrower income or supplement borrower wealth. Of importance for this study, they also disaggregate their analysis by household race and ethnicity and income. Because there is broad similarity in the findings of all of these studies regarding the number and types of renter households who could afford to purchase a home under various scenarios, we will focus our review on the findings from Listokin et al. given the breadth of their analysis of relevance for this study.

Before turning to a review of specific findings from this study, there are certain aspects of their analysis that should be noted. First, Listokin et al. limit their analysis to families and single-person households, excluding renter households of unrelated individuals. While this excluded group accounted for about 9 percent of renter households in 1993, and thus will depress estimates of the number of potential owners, this bias is offset by the fact that unrelated individuals are among the households least likely to own a home. A second limitation imposed by this study is that they focus on renter households from 1993 who were still renters in 1995. Thus, they exclude renter households that moved to ownership or dissolved over this two-year period. However, this limitation may be not be problematic for the purpose of identifying how many households might be able to move to homeownership on the basis of mortgage product innovation or housing policies since the households removed are those who were able to buy a home or who split up and so were unlikely to have become owners. Another issue for this study is that the authors present their results in terms of the number of renter households who can afford a home and not in terms of the impact on homeownership rates of different groups. Because the focus of our review is on the potential to reduce homeownership gaps by race and ethnicity, we have supplemented the authors' analysis by estimating the change in homeownership rates that would result if all renters who could afford to purchase under the various scenarios actually did purchase a home.[115] A final note is that Listokin et al. also estimate the impact of different lending products on the purchasing power of renter households. This reflects the fact that the benefits of mortgage market innovation include not only allowing more households to purchase homes, but also to increase the value of homes that can be purchased. Thus, even if mortgage product innovation had limited impact in terms of homeownership rates, these innovations may still be quite important in terms of their impact on the amount of housing consumed by home purchasers. We do not review these findings because they do not relate to the question of changes in homeownership rates.

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[114] In contrast to Calhoun and Starks, Listokin et al estimate the target home price based on the value of homes acquired by renters who made the transition to homeownership between 1993 and 1995 rather than using all homeowner households. Also, unlike Calhoun and Starks, it appears that Listokin et al include all owner-occupied units and not just single-family detached units.

[115] Because Listokin et al use renters identified in the 1993 SIPP, we have estimated the total number of households by race and ethnicity for 1993 using the CPS; we did not have estimates of the total number of households by these racial and ethnic categories from the SIPP.

Exhibit 5-3 summarizes the mortgage products reviewed by Listokin et al. The products evaluated include many of the products introduced during the 1990s to serve more low- and moderate-income households. The products include a range of affordable products introduced by the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, as well as products offered by lenders to be held in their own portfolios. This latter group is represented by two products offered by Bank of America and a hypothetical product with characteristics that are typical of other portfolio lenders (Portfolio Lender Composite). In order to provide a baseline point of comparison with these new products, the analysis also includes the underwriting standards of the GSE standard underwriting as of the late 1990s (Current GSE). Both current and prior FHA 203(b) underwriting standards provides another point of comparison. The principal variations in underwriting guidelines are summarized in the exhibit including the downpayment required, the minimum borrower contribution, the number of months of financial reserves needed, the front- and back-end ratio limits, and the cost of annual and up-front mortgage insurance premiums.

The first aspect of Exhibit 5-4 to note is that given the standard underwriting guidelines used by the GSEs at present, the homeownership rate would increase by 1.3 percentage points if all renters who could qualify to purchase their target house value did so.[116] This result simply indicates that some renter households do not appear to face financial limits on their ability to purchase a home, but still prefer not to own.[117] Thus, the potential impact on homeownership rates of more affordable mortgage products should be evaluated against this baseline potential increase from standard mortgage underwriting. This finding also indicates that, for the most part, financial constraints can play a significant role in limiting homeownership opportunities. While not shown in this exhibit, Listokin et al. find that only 5.0 percent of renter households can afford their target home value. About two-thirds of renters are limited by a lack of both income and wealth from being able to purchase their target home, while another quarter are limited solely by a lack of wealth. Less than 5 percent face only an income constraint.

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[116] Listokin et al assume the standard GSE mortgage product calls for a 5 percent downpayment, a 28 percent front-end ratio, a 36 percent back-end ratio, and 2 months reserves.

[117] The impacts reported here are smaller than in the original work as we express the number of renters who could afford to purchase a home as a share of all households rather than just as a share of renters in order to show the potential impact on homeownership rates. As a point of reference, the 1.3 percentage point increase in the overall homeownership rate corresponds to 5.0 percent of renters being able to afford to purchase a home under the current standard GSE underwriting. The share of renters is much larger than the homeownership impact because renters make up less than 30 percent of all households so a fairly large share of renters must switch tenure to change the homeownership rate by a single percentage point.

Exhibit 5-3
Key Underwriting Terms for Mortgage Products Examined by Listokin et al. (2002)

Mortgage Product	Loan-to-Value Ratio	Minimum Borrower Contribution	Front-End Ratio	Back-End Ratio	Reserve Funds	Monthly Mortgage Premium	Upfront Mortgage Premium
Historical GSE Standard	90	10	27	35	2	0.52	0
Current GSE Standard Mortgage	95	5	28	36	2	0.54	0
Fannie Mae Community Home Buyer	95	5	33	38	0	0.67	0
Fannie Mae Community Home Buyer 3/2 Option	95	3	33	38	0	0.67	0
Fannie 97	97	3	28	36	1	0.77	0
Fannie Mae Flex 97	95	0	None	39	0	0.67	0
Freddie Mac Affordable Gold	95	5	None	39	0	0.67	0
Freddie Mac Affordable Gold 3/2 Option	97	3	None	39	1	0.77	0
Freddie Mac Affordable Gold 97	97	3	33	41	2	0.59	1.50
Freddie Mac Community Gold	97	2	None	42	1	0.90	0
Bank of America Zero Down	100	0	33	41	2	1.10	0
Bank of America Credit Flex	97	1	None	43	1	0.92	0
Portfolio Lender Composite	97	1	35	42	0	0.00	0
FHA 203(b) (prior rules)	95	<5	32	42	0	0.50	2.25
FHA 203(b) (current rules)	98	<3	32	42	0	0.50	2.25

Source: Listokin et al. (2002), Appendix D.

Exhibit 5-4
Potential Increase in Homeownership Rates by Race-Ethnicity and Income from Mortgage Product Innovation Estimated by Listokin et al. (2002)

		Race/Ethnicity				Income Level			
Mortgage Product	**All Households**	Non-Hispanic white	Non-Hispanic black	Hispanic	Other Minority	<50% AMI	50-79% AMI	80-119% AMI	>=120% AMI
Current GSE Standard Mortgage	1.3%	1.5%	0.6%	0.5%	1.4%	0.1%	0.2%	0.5%	3.2%
Incremental Potential Increases Above Current GSE Standard:									
Fannie Mae Community Home Buyer	0.4%	0.4%	0.3%	0.3%	0.4%	0.0%	0.0%	0.1%	1.0%
Fannie Mae Community Home Buyer 3/2 Option	0.6%	0.6%	0.5%	0.4%	0.4%	0.0%	0.0%	0.1%	1.5%
Fannie 97	0.2%	0.2%	0.2%	0.3%	0.2%	0.0%	0.0%	0.0%	0.6%
Fannie Mae Flex 97	0.4%	0.5%	0.3%	0.3%	0.6%	0.0%	0.0%	0.1%	1.2%
Freddie Mac Affordable Gold	0.5%	0.6%	0.3%	0.5%	0.7%	0.0%	0.0%	0.1%	1.4%
Freddie Mac Affordable Gold 3/2 Option	0.8%	0.9%	0.5%	0.6%	0.7%	0.0%	0.1%	0.2%	2.0%
Freddie Mac Affordable Gold 97	0.5%	0.6%	0.3%	0.4%	0.6%	0.0%	0.0%	0.1%	1.3%
Freddie Mac Community Gold	0.7%	0.7%	0.4%	0.4%	1.0%	0.0%	0.0%	0.3%	1.6%
Bank of America Zero Down	0.6%	0.6%	0.4%	0.3%	0.4%	0.0%	0.0%	0.1%	1.5%
Bank of America Credit Flex	0.7%	0.8%	0.4%	0.4%	1.0%	0.0%	0.0%	0.4%	1.7%
Portfolio Lender Composite	0.8%	0.9%	0.5%	0.5%	1.0%	0.0%	0.0%	0.2%	2.0%
FHA 203(b) (prior rules)	0.8%	0.8%	0.6%	0.5%	1.3%	0.0%	0.0%	0.1%	2.0%
FHA 203(b) (current rules)	0.7%	0.8%	0.5%	0.4%	1.2%	0.0%	0.0%	0.1%	1.9%

Source: Authors' estimates based on Listokin et al. (2002), Tables 15 and E.1-E.4.

Notes: See Listokin et al. (2002), Appendix D for a complete description of the underwriting guidelines of these mortgage products.

The potential impact on homeownership rates by race-ethnicity, across the range of affordable products evaluated by Listokin et al. is not large. Compared to the GSEs' current standard underwriting, the additional potential gain in homeownership rates from these products is generally only between 0.5 to 0.9 percentage points for whites, 0.3 to 0.5 percentage points for blacks, 0.3 to 0.6 percentage points for Hispanics, and 0.4 to 1.0 for Other minorities. In addition, because the potential gain for whites are larger in absolute terms than for blacks and Hispanics, these products would not be expected to lead to a reduction in racial homeownership gaps.

In terms of differences by income, Exhibit 5-4 also shows that most of the potential gains in homeownership are concentrated among upper-income households. The estimated potential impact on the homeownership rates of households with income below 50 percent of area median income or between 80 and 120 percent of area median income is negligible. The potential impact among households with income between 80 and 120 percent of area median income are larger, but still quite modest, generally ranging from 0.1 to 0.2 percentage points. Only for households with income above 120 percent of area median is the potential impact fairly substantial, with most mortgage products having the potential to increase homeownership rates by between 1 and 2 percentage points.

In examining differences in the homeownership impact across mortgage products, in general the products with the largest potential impact are those that require the least amount of savings—either for the downpayment or required savings reserves—and those that allow borrowers to have higher levels of debt. Interestingly, the GSE products that allow only 3 percent down (the "97" products) and the Bank of America Zero Down product are estimated to have less of an impact than other products requiring larger downpayments. Further review of the underwriting requirements for these products finds that they require more reserves than other loans, which offsets the advantage of having a lower downpayment requirement. Also of note, several of the mortgage products evaluated have a relatively larger potential impact on the homeownership rate of "Other" minorities. These products are all distinguished by allowing very high back-end ratios. The importance of this allowance for this group suggests that these households are more likely to be constrained by high levels of non-housing debt than other groups.

It is also interesting to note that FHA mortgage products generally have the greatest potential for increasing homeownership rates. Again, this appears to be attributable to the fact that FHA allows high LTVs, high debt levels, and does not require any reserves. In fact, FHA underwriting guidelines that prevailed prior to 1997 allowing borrowers to finance closing costs without counting these costs against the loan to value ratio limit, have the largest potential homeownership impact of any mortgage product evaluated. While the growth in affordable mortgage products during the 1990s has increased the range of products that can serve financially constrained households, none of the new products does any better at serving these households than long-available FHA mortgage products.[118]

[118] Listokin et al also evaluate the potential for increasing homeownership using different assumptions about the desired house price. Of course, lower house prices are associated with greater shares of households being able to afford to purchase a home. But even when they employ much more generous criterion home values, the marginal impact of affordable loan products is not large. When the potential impact of loan products is compared to the potential impact of the current standard GSE loan products, the affordable products generally have the potential for increasing homeownership rates by less than 1 percentage point.

In summary, there is not a simple correlation between underwriting terms and the potential impact on homeownership rates. Instead, the patterns in Exhibit 5-5 indicate that there are complex tradeoffs between different underwriting criteria. It is also important to note that because some products will be less constraining for specific households than others, the collective impact of having this range of products available is greater than the impact of any one product. A more precise estimate of the impact of the innovations in mortgage markets represented by this range of products would be to estimate the share of renter households who could afford to purchase a home with at least one of these products.

Listokin et al. also examine the potential impact of various policy approaches for increasing homeownership. The authors examined the potential impact on the number of renters who could qualify for a mortgage as a result of changes in mortgage terms (including lowering interest rates, reducing downpayment requirements, or eliminating mortgage insurance premiums), lowering transaction or property carrying costs, lowering housing costs, or providing financial assistance to borrowers either in the form of annual income supplements or one-time cash grants. Exhibit 5-5 summarizes the results of their analysis in terms of the potential impact on homeownership rates of alternative policy approaches. (The authors only conduct this analysis by race-ethnicity and not by income.) As with the previous exhibit, we focus on the potential incremental impact on homeownership rates that might occur if the hypothetical policy change were introduced allowing more households to qualify to purchase their target home value.

Most of the potential policies examined by Listokin et al. would have little potential impact on homeownership rates, particularly among minorities. Somewhat surprisingly, even reducing mortgage interest rates to 0 percent would not increase homeownership rates by very much. This reflects the fact that renters who are financially constrained are much more likely to lack sufficient wealth to purchase a home rather than to not have sufficient income. It is important to note that this analysis does not allow for changes in behavior; for example, a household rationally reducing their consumption to increase their wealth, allowing the household to benefit from the 0 percent interest rate.

Listokin et al. report that among renter families who cannot afford to purchase a modestly priced home, only 4.4 percent faced only an income constraint, while 28.2 percent faced only a wealth constraint and 67.5 percent faced both types of constraints. Because an interest-rate reduction only addresses an income constraint, this type of policy is not likely to help many households overcome financial barriers. For similar reasons, the reductions in mortgage insurance premiums, property taxes, and property insurance rates also have little potential impact on homeownership rates. Providing annual income supplements to borrowers is also similar to a reduction in interest rates, although in their analysis this approach is shown to have a somewhat larger potential impact. However, the larger impact is largely because the hypothetical income supplements are more generous than the interest rate reductions given the value of the target homes.[119]

[119] The nature of the simulation is such that income grants are only allowed to reduce the constraint on front-end and back-end ratios and cannot be added to savings. This explains why a $10,000 *annual* income supplement has less impact than a one-time $10,000 cash grant. For this reason, the income supplement is probably best interpreted as a relaxation of the front- and back-end ratios.

Exhibit 5-5
Potential Impact on Homeownership Rates by Race and Ethnicity of Alternative Policy Interventions Found by Listokin et al. (2002)
(Percentage point change in homeownership rate)

Policy Intervention	Non-Hispanic white	Non-Hispanic black	Hispanic	Other
Potential Increase Assuming Current Standard GSE Underwriting and Moderately Priced Home	1.3%	1.5%	0.6%	0.6%
Potential Incremental Increases From:				
Modifying Mortgage Terms				
Interest Rate Reduced to:				
5.0 Percent	0.3%	0.0%	0.1%	0.2%
2.5 Percent	0.6%	0.1%	0.2%	0.8%
0.0 Percent	0.8%	0.1%	0.2%	1.0%
Downpayment Reduced to:				
3%	0.2%	0.1%	0.2%	0.0%
0%	0.3%	0.4%	0.4%	0.6%
Eliminate Mortgage Insurance Premiums	0.1%	0.0%	0.0%	0.2%
Reducing Transaction or Carrying Costs				
Lower Closing Costs	0.1%	0.0%	0.2%	0.2%
Lower Property Taxes	0.1%	0.0%	0.0%	0.0%
Lower Property Insurance	0.0%	0.0%	0.0%	0.2%
Lowering Housing Costs				
Reduce House Price 10 percent	0.2%	0.0%	0.0%	0.2%
Providing Borrowers with Financial Assistance				
Annual Income Supplements of:				
$1,000	0.2%	0.0%	0.0%	0.2%
$5,000	1.0%	0.1%	0.4%	1.3%
$10,000	1.5%	0.3%	0.6%	1.5%
One-Time Cash Grants				
$1,000	0.1%	0.1%	0.1%	0.0%
$5,000	0.9%	0.9%	1.0%	1.6%
$10,000	3.3%	5.2%	7.0%	5.3%

Source: Authors' estimates based on Listokin et al. (2002).

Policies that reduce the amount of wealth required by lowering downpayment requirements have somewhat larger impacts than policies addressing income constraints. For example, 0 percent downpayment loans have the potential for increasing homeownership rates by between 0.3 and 0.6 percentage points. Still, these impacts are fairly small. In part, this reflects the fact that many renter households have little or no wealth. As shown in Exhibit 2-25, half of all black and Hispanic renters have net wealth that is less than $3,000 and at least a quarter have no wealth whatsoever. So even with little to no downpayment requirement, households still do not have sufficient wealth to pay closing costs and other transaction fees.

By far the most effective policy option is to provide borrowers with one-time cash grants, which is perhaps why this is the approach adopted in the recently enacted American Dream Down Payment program. Grants of $5,000 have the potential to increase homeownership rates among whites and blacks by 0.9 percent, 1.0 percent for Hispanics and 1.6 percent for Other Minorities. This impact is much larger than any of the other types of policy options considered. If the grants are increased to $10,000, the potential impact on homeownership rates is quite large – 5.2 percent for blacks, 7.0 percent for Hispanics, 5.3 percent for other minorities, and 3.3 percent for whites. Importantly, this policy would also have a larger potential impact on homeownership rates among minorities than among whites, and thus would help to close racial gaps in homeownership.

The reason cash grants are so much more effective than other policy options is that it helps to remedy all financial constraints. Given that the national median price of target homes used in this analysis is $85,210, a $10,000 grant will cover most downpayment and closing cost requirements. Cash that exceeds downpayment and closing cost requirements can also be applied to outstanding debts, and therefore remove any constraints on total debt to income ratios. Thus, cash grants also address income constraints. Finally, a larger downpayment will also lower the amount of the mortgage and so contribute, albeit only marginally, to addressing income constraints.[120]

Of course, while a policy of cash grants would be effective, it would also be very expensive. Listokin et al's analysis suggests that about 5 million renter households would be able to purchase a target priced home with a $10,000 grant. If there were no income limits on qualification for these grants, the total cost of such a grant program would thus be about $50 billion. These estimates may also be low because it excludes a count of households who transitioned to homeownership without any financial assistance. Income limits on eligibility would obviously help to limit the cost of such a program, but because neither Listokin et al. nor Savage report findings by income level we cannot evaluate the impact of different income limits on the cost of a grant program. Given the relatively low estimates of the potential for increasing homeownership among lower-income groups shown in Exhibit 5-4, it is likely that income limits could greatly limit eligibility for this subsidy—but that may also mean that the potential for increasing homeownership rates will also be limited.[121]

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[120] One of the limitations of the synthetic underwriting approach is shown by comparing the impact of an annual income supplement of $10,000 with that of a cash grant of $10,000. The effect of the income supplement must be larger because it consists of an annual flow of income of $10,000, not just a one-time payment. However, Listokin's results are just the opposite. The reason is that their model does not recognize that income can be saved to increase wealth.

[121] While the range of costs cited above is staggering, it is instructive to compare these estimates to the annual cost of the home mortgage interest deduction from federal income taxation. According to the

One of the shortcomings of the synthetic underwriting approach to estimating the potential for increasing homeownership rates is that it cannot take into account a household's overall demand for homeownership to predict which households will attempt to become owners. As a check on their simulation, Listokin et al. also examined the characteristics of renter households who successfully transitioned to homeownership between 1993 and 1995. When the circumstances of these households in 1993 were examined it was found that 93 percent of these households purchased homes that were more expensive than the mortgage simulation suggested they could afford, including 88 percent that purchased homes that were more than 50 percent more expensive than the estimated affordable price. As this finding makes clear, a static assessment of a household's ability to purchase a home may miss a great deal about what is essentially a dynamic process of adjusting income and savings to achieve the goal of purchasing a home. One implication of this observation for public policy is that there may be great potential for policies to boost homeownership by assisting households in generating savings, such as tax advantages for homeownership savings accounts, matched savings plans such as individual development accounts, and financial management training to help improve savings habits.

5.4.2 Constrained Tenure Choice Studies

Another common approach to estimating the potential for increasing homeownership rates are econometric models of tenure choice that incorporate measures of financial constraints. The advantage of this approach over synthetic underwriting models is that the models incorporate all measurable determinants of the demand for homeownership and so examine not just the ability to purchase a home, but also the willingness. Because these models estimate a probability of homeownership they also allow for the possibility that a small share of renters who appear to be unlikely to move to homeownership will actually become homeowners. The primary drawback of these models relative to the synthetic underwriting approach is it is more difficult to isolate the impact of specific policies on the probability of homeownership. However, as discussed above, given the dynamic nature of household circumstances, the estimates of policy impacts from synthetic underwriting models are not nearly as precise as they appear.

Among the earliest studies of this type are Linneman and Wachter (1989) and Zorn (1989). Using the 1977 Survey of Consumer Credit and the 1983 Survey of Consumer Finance, Linneman and Wachter first calculate the home value that each household could afford to purchase by applying traditional underwriting criteria to the households' income and wealth. Specifically, they assume that housing payments cannot exceed 28 percent of income and that sufficient wealth should be available to support a downpayment of 20 percent of the house value. They then identify financially unconstrained homeowners as those households who occupy homes that are valued at no more than 85 percent of either of these two house price limits. Using this sample of unconstrained households, they then estimate a model of the preferred house value of unconstrained households. This estimated valuation is then compared to the house values that are feasible given first the individual's income level and then their wealth level. If the ideal house value is close to or above the value supported by income, the household is deemed to be income constrained. If the ideal house value is close to or above the value supported by household wealth, the household is considered wealth constrained. Dummy variables are created to correspond to varying degrees of income and wealth constraint, and

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Congressional Joint Committee on Taxation, the annual cost to the federal government of the mortgage interest deduction in 2001 was $60.6 billion dollars.

these dummy variables are then incorporated into a logit model of tenure choice for recent movers (those who moved within three years of the survey date). The study then examines the impact of these financial constraint measures on the probability of homeownership. The findings indicate that income and wealth constraints are important determinants of homeownership, with binding constraints greatly lowering the overall probability of homeownership. Zorn's approach is similar, although rather than estimate separate income and wealth constraints, he uses a single measure of the difference between the desired house value and the value derived from the more binding of the two constraints. Like Linneman and Wachter, Zorn finds that moving to homeownership is less likely when financial constraints are binding.

While these studies made an important contribution to the literature by examining the role of financial constraints on tenure choice, neither study examines to what extent these constraints contribute to lower overall homeownership rates than would be expected absent such constraints. However, several recent studies have adapted this general approach to examine how a reduction in financial and other constraints might contribute to homeownership levels. The study that follows Linneman and Wachter most closely is Quercia et al. (2002). Using the 1995 American Housing Survey (AHS), they employ Linneman and Wachter's approach to identify households who are wealth or income constrained and then incorporate these measures into a general tenure choice model. As in Linneman and Wachter, dummy variables are used to identify households facing income or wealth constraints assuming a loan requiring a 20 percent downpayment and a 28 percent front-end ratio at then-current market interest rates of 8 percent. These variables are then included in a logit model that predicts the probability of homeownership based on household characteristics (age, race-ethnicity, gender, and marital status) and the relative cost of owning and renting in each household's market area. One of the principal goals of this analysis is to examine the impact of loosening these constraints on the probability of homeownership for key subgroups of the population. The impact of loosened underwriting criteria is simulated by applying the estimated coefficients of the logit model to household characteristics and by varying the value of the dummy variables for the income and wealth constraints to reflect different underwriting assumptions.

Exhibit 5-6 presents a summary of their findings regarding the potential increases in homeownership rates that might be expected from changes in mortgage underwriting. As shown, Quercia et al. present results for all households, as well as blacks, low- and moderate-income households, central city residents, and young households (age 24 to 29). In general, the estimated increases in homeownership from reduced mortgage constraints are much larger than Listokin et al. found using synthetic underwriting. In part, the difference in findings may reflect differences in the base case assumption. While Listokin et al. apply existing standard GSE underwriting requiring a 5 percent downpayment, Quercia et al. require a 20 percent downpayment. As a result, reducing downpayment requirements to 3 or 5 percent represents a much larger relaxation in this constraint for Quercia et al. Another important difference in these studies is that Listokin et al. have detailed information on household debt, which is not available to Quercia et al. from the AHS. As a result, Quercia et al. are not able to identify households who are constrained by excessive debt and so may be more liberal in assessing the share of households who would be free of financial constraints with lower downpayment requirements. However, as will be discussed more below, Quercia et al's estimated impact on homeownership rates are not dissimilar from the impact estimated by Rosenthal (2002) who also employs a constrained-tenure choice modeling approach but with more detailed information on household financial circumstances. Based on the similarity of findings regarding the potential for

increasing homeownership rates across studies employing a tenure choice model, it appears that the larger impact on homeownership rates found by these studies reflects the greater flexibility of tenure choice models to account for changes in household financial circumstances in anticipation of a move to homeownership.

Quercia et al. examine the potential impact of hypothetical mortgage products that vary the loan-to-value ratio, front-end ratio, and the mortgage interest rate. The first policy option examined by Quercia et al. is for a lowering of interest rates by 2 percentage points. As with other studies, they find that this has relatively small impact on homeownership rates, reflecting the fact that wealth constraints are more significant than income constraints. The largest impact is for low- and moderate-income households, who are estimated to have a 1.2 percentage point rise in homeownership rates. Other groups are estimated to only have increases of 0.1 to 0.4 percentage points. Many of the other hypothetical mortgage products call for lowering the downpayment level to 3 to 5 percent. In most cases, this relaxation is associated with a rise in homeownership rates of between 3 and 6 percentage points. The largest impact is associated with a loan product allowing for 0 percent down—essentially eliminating the downpayment constraint. Under this scenario homeownership rates are estimated to rise by between 7 and 9 percentage points. Quercia et al. also estimate that the increase in homeownership rates of loosening underwriting requirements would generally be larger for blacks, low- and moderate-income households, and young households compared to all households. Thus, many of these policies would be expected to help close homeownership gaps by race and income. However, it may be that some of these gains have already been realized. Quercia et al. use a very conservative downpayment assumption of 20 percent in their model. Given the trend during the 1990s of allowing much lower downpayment levels, many households may have already benefited from relaxation of downpayment constraints.

Exhibit 5-6
Potential Impact of Loosening Financial Constraints on Homeownership Rates of Selected Groups Found by Quercia, McCarthy and Wachter (2002)
(Percentage Point Change in Homeownership Rate)

Hypothetical Mortgage Characteristics			Household Type				
Interest Rate	Down-payment	Front-end Ratio	All	blacks	Low- and Moderate Income	Central City	Young (24-29)
6	20	28	0.4	0.1	1.2	0.2	0.1
8	5	33	3.2	4.4	4.1	3.5	4.0
8	5	38	3.4	4.6	5.4	4.1	4.1
8	3	33	4.2	5.2	4.6	4.0	4.6
6	3	38	4.1	5.4	6.5	4.2	4.7
8	0	33	7.7	9.3	8.5	7.2	8.6

Source: Authors' estimates based on Quercia, McCarthy and Wachter (2002).

Another recent study that estimates a model of constrained tenure choice is Rosenthal (2002), although the modeling approach used is unique in this strand of the literature. Using data from the 1998 Survey of Consumer Finances, Rosenthal estimates a three-cell bivariate probit model where the

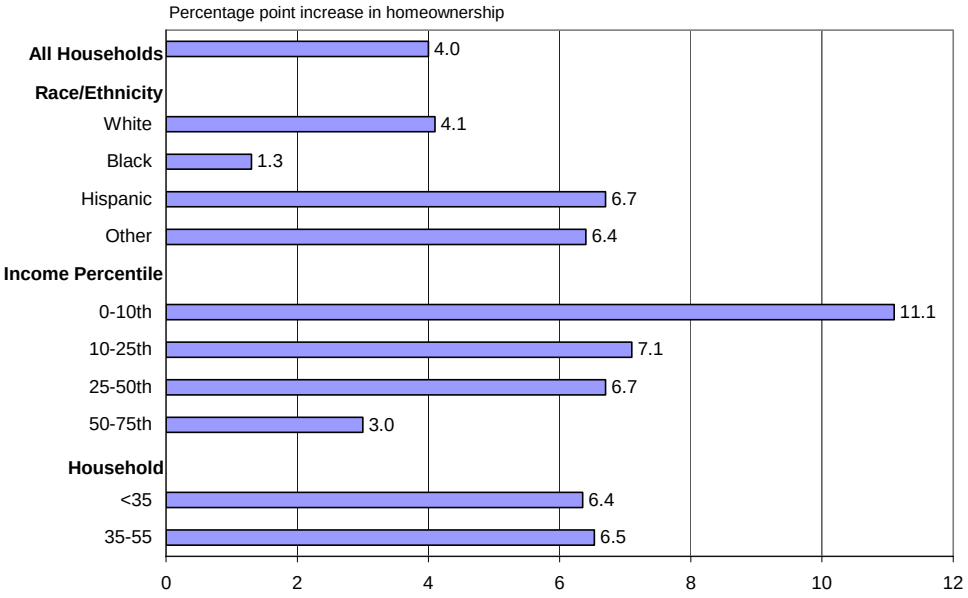
observed outcomes are credit constrained, non-credit constrained owner and non-credit constrained renter. Credit constrained households are identified using survey questions that identify whether at any time in the past five years the household had a loan request denied, had a loan request only partially granted, or considered applying for credit but then chose not to because of an expectation of being rejected. By identifying credit-constrained households, Rosenthal can then estimate a tenure choice equation that is based solely on non-credit constrained households. The explanatory variables include household demographic characteristics (including age, marital status, race-ethnicity, gender, and size of the household), measures of income potential (including education level, current, past, and expected income, measures of income stability, and health status), access to inheritances and gifts, and credit history (bankruptcies and recent missed loan payments). Notably, he does not include any direct measures of wealth as this is expected to be an aspect of the presence of borrowing constraints. Rosenthal then applies the estimated tenure choice model to all households—including both constrained and unconstrained households—to estimate the impact on homeownership rates of removing credit barriers.

It is important to note that unlike the previous studies discussed in this section, Rosenthal is not investigating the impact of specific mortgage underwriting on the probability of homeownership. Rather, he is examining the impact of borrowing constraints more generally defined, including not only those who might fail to meet current underwriting criteria for wealth, income, and debt levels, but also those who are deemed a credit risk for other reasons. The factors that might contribute to being denied credit that are included directly in the model include a history of not making timely payments on debt (including a history of bankruptcy), unstable income levels, and poor health (which contributes to both income and debt problems). Thus, Rosenthal is estimating the combined impact of underwriting constraints including both factors related to income and wealth as well as credit and employment history

Overall, Rosenthal estimates that the U.S. homeownership rate would be 4.0 percentage points higher in the absence of credit constraints. Again, compared to Listokin et al's analysis of mortgage product innovation, this increase in homeownership rates is fairly large. One reason for this difference may be that Rosenthal's analysis includes a broader class of credit constraints. But, as noted above, this order of magnitude is in keeping with Quercia et al. and so may be associated with the fact that tenure choice models are more flexible in allowing for the possibility that households will adjust their income and wealth profile to achieve homeownership.

Exhibit 5-7 illustrates Rosenthal's overall results as well as his findings for several race, income, and age groups. Across racial groups, the biggest potential gains are estimated for Hispanic and Other race households with increases in their homeownership rates of 6.7 and 6.4 percentage points, respectively. White homeownership rates would also rise by 4.1 percentage points while the black rate would only rise 1.3 percentage points. Thus, given the relative changes in homeownership for different racial and ethnic groups, Rosenthal finds that a removal of credit barriers would narrow homeownership gaps for Hispanics and Other races, but widen gaps for blacks. The relatively small impact for blacks is somewhat surprising given that other studies have generally found that blacks and Hispanics face similar constraints. Rosenthal attributes his finding to the fact that black households in his sample have a much lower share of married couple households than Hispanics (28.3 percent of blacks were married compared to 58.8 percent of Hispanics). Thus, the result is consistent with the tendency for much higher homeownership propensities among married couples.

Exhibit 5-7
Potential Increase in Homeownership Rates by Race-Ethnicity, Income, and Age Found by Rosenthal (2002)



Source: Rosenthal (2002)

The analysis finds the largest influence of borrowing constraints on those with lower incomes. The lowest income decile exhibits the largest impact of any subgroup, with ownership rates estimated to increase by 11.1 percentage points. Fairly significant impacts are also evident for households with income between the 10th and 25th percentiles (7.1 percentage points) and the 25th and 50th percentiles (6.7 percentage points). Households with income above the median (50th to 75th percentile) are also projected to experience homeownership gains from removal of credit barriers, but the gain is smaller (3.0 percentage points).

The final characteristic Rosenthal examines is age, with the slightly surprising result that borrowing constraints have a similar and substantial effect among both those under age 35 and those between age 35 and 55. The fact that the impact of these constraints is roughly equivalent for households in the 'under 35' and '35-54' age groups is unusual given the tendency for younger households to more often face financial constraints.

Galster et al. (1999) is a third recent study that employs a variant of a tenure choice model to estimate the potential for increasing homeownership. There are several distinguishing features of this study. First, they analyze the probability of a renter household transitioning to homeownership over an 18-month period rather than the probability that a household will be a homeowner at a given point in time, as do most studies of this type.[122] The more dynamic nature of this approach is intended to

[122] This approach to modeling the transition from renter to owner status is similar to the approach used by Jones (1995). Jones' analysis is restricted to households under age 35 that did not move or change marital status over a three-year period and so provides limited insights into the potential for expanding homeownership generally.

capture the fact that household circumstances can change in response to a desire to achieve homeownership. Second, their method for identifying households that are unconstrained in their tenure choice is to model the tenure transition made by white, suburban renters and to then apply the estimates coefficients for this model to all households. This approach is based on the assumption that this group of renters does not experience racial discrimination in housing or mortgage markets, faces fewer constraints in terms of the supply of suitable housing for homeownership, and is knowledgeable about the homebuying and mortgage finance processes. By applying a behavioral model for white suburban renters to all renters, the model is intended to test how much homeownership could be increased if the barriers of racial discrimination, limited housing supply, and a lack of information were eliminated. Thus, in comparison to the other articles reviewed above, Galster et al. are not primarily concerned with examining the potential of mortgage market innovation to increase homeownership rates, but rather mostly focus on testing the potential for public policy to increase homeownership rates by addressing these other barriers.[123] Another unique aspect of Galster et al. is that they use the estimated probabilities of a transition to homeownership to identify the households who are most likely to move to homeownership as a means of identifying the groups for which policy efforts are the most likely to reach. As part of this analysis, they also estimate a probability of mortgage default in order to balance a household's preference for homeownership against the potential credit risk associated with that household.

The first step in the analysis by Galster et al. is to estimate a logit model of tenure transition for white, suburban renters during an 18- month period in 1991-1992 based on data from the Survey of Income and Program Participation (SIPP). The explanatory variables include marital status, number of children, age, education, occupational category, continuity of employment over last year, income, median house value in the area, and dummy variables measuring the ratio of liquid assets to the median house value.[124] This model is then applied to all renters and the average propensity to transition to ownership is calculated. This average propensity is then compared to the actual share that transitioned to determine how many more renters would have become owners if all renters behaved like white suburban renters. The authors refer to this as the baseline estimate of homeownership potential.

To evaluate the potential impact if homeownership probabilities were expanded even further, an earlier, related study by Galster et al. (1996) used the same model to identify renter households with the highest predicted probability of homeownership. This information was combined with an estimate of the probability of mortgage default for all renters by applying a model estimated by Berkovic et al. (1994) based on the performance of FHA mortgages in order to identify renters with the highest potential of success as owners. Specifically, they identified renters with a probability of becoming homeowner that is greater than the median predicted probability among those renters who actually became homeowners between 1991 and 1992 *and* with a lower predicted probability of

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[123] Galster et al do compare modeling results using measures of housing costs and wealth using a median priced home versus the 10th percentile house price (a "low-cost" home) as a means of examining the potential of improving homeownership by making more affordable homes available. However, because this aspect of the study is less well developed than other studies, we do not focus our review on this aspect of their findings.

[124] The geographic area used to measure area income and house prices is the Census Division including central city, suburb and non-metropolitan area status.

default than these actual homebuyers. These households are presumed to have both a desire and an ability to become successful homeowners that is equivalent to those renters who actually transitioned to homeownership. The authors refer to this as the extended estimate of the potential for expanding homeownership opportunities.

Exhibit 5-8 presents a summary of Galster et al's estimates of the potential for expanding homeownership opportunities through the removal of discriminatory, information, and supply-related barriers. As shown, the baseline estimate is that there would have been 522,000 additional homeowners in 1992 if all renters moved to homeownership at the same rate as white, suburban renters. This increase corresponds to a 0.6 percentage point increase in the overall homeownership rate. The gains are higher for lower-income households as they estimate a potential for increasing homeownership by 0.7 percentage points among households with income at or below 60 percent of area median income by and by 0.8 percentage points for those with incomes between 60 and 100 percent of area median income, compared to 0.2 percentage points for those with incomes above the area median. Thus, the authors estimate that overcoming these barriers would lower homeownership gaps by income, but only by about a half a percentage point.

Exhibit 5-8
Potential Impact of Reducing Racial Discrimination, Information, and Housing Supply Barriers on the Homeownership Rates of Selected Income Groups Found by Galster et al. (1999)

		Baseline Scenario		Extended Scenario	
Household Income Level	Total Households*	Potential New Homeowners	Increase in Homeownership Rate	Potential New Homeowners	Increase in Homeownership Rate
<60% AMI	37,318	270	0.7%	485	1.3%
60-99.9% AMI	22,371	176	0.8%	1,669	7.5%
>100% AMI	33,458	76	0.2%	1,967	5.9%
Total	93,147	522	0.6%	4,121	4.4%

Source: Authors' estimates based on Galster et al. (1999) and Galster et al. (1996).
* Total Households by income based on authors' tabulations of the 1991 AHS.

The potential homeownership impacts estimated by Galster et al. are much smaller than those estimated by Quercia et al. and Rosenthal. In part, this may reflect the fact that Galster et al. do not include as part of their estimate the potential impact of loosening financial constraints, which have been shown by the other studies reviewed to play an important role in restricting homeownership rates. Rather, Galster et al. essentially take current income and wealth levels as given. Secondly, Galster et al. estimate the probability of renters moving to homeownership over an 18-month period, while other studies examine whether all households would be more likely to be owners absent constraints. This may also dampen their overall estimate of the impact on homeownership rates.

Galster et al's extended scenario presents a much greater potential impact on homeownership rates compared to their baseline scenario. Under the extended scenario, if public policy were somehow to encourage all households with a relatively high probability of moving into homeownership to achieve this goal, the overall homeownership rate would increase 4.4 percentage points. The greatest impact

under this scenario is among households with income between 60 and 100 percent of area median income, which would experience a 7.5 percentage point rise in homeownership rates, while those with income above the area median would experience a 5.9 percentage point rise. Lower-income households (income at or below 60 percent of the area median) would have only a 1.3 percentage point rise. While the authors generally do not present findings for racial and ethnic groups, they do present some summary information on the characteristics of these households with the greatest potential for moving into homeownership. In general, these households are young, college educated, renting in the central city, and white. Thus, for the most part, under the extended scenario homeownership gaps by race would not narrow.

A final study of note employing a constrained tenure choice model is Green and Vandell (1999). This study examines the potential for increasing homeownership through changes to the tax code. Green and Vandell develop a two-equation model using micro data from the 1990 decennial census that estimates tenure choice and the level of housing expenditures for owners as a function of household characteristics and the tax benefits of homeownership. The authors use these models to estimate the size of a tax credit that could be granted to owners that would have the same cost to the government as current tax treatment of mortgage interest and property taxes. After adjusting for changes in homeownership rates, increases in equity investments in housing (and thus loss of taxes on other investments), and the share of households who may be precluded from owning due to wealth constraints, Green and Vandell estimate that a tax credit of $810 annually would have the same cost as current tax policy. With this credit, they estimate that the overall homeownership rate would increase by 3.0 percentage points overall, with above average increases for blacks (6.1 percent) and households with income between $20,000 and $40,000 (3.6 percent). Thus, they conclude that the replacement of current tax policy with a tax credit for homeownership would have a fairly sizable impact on overall ownership rates and would contribute to narrowing homeownership gaps.

There are, however, some aspects of their approach, which suggest their estimates may overstate the potential impact of tax changes on homeownership rates. First, their estimation appears to include the same measure of tax benefits in both the tenure choice and housing expenditure equation. It would be expected that the tenure choice decision would be based on a comparison of the total tax liability as an owner versus that as a renter, while the housing expenditure decision would consider only the marginal tax rate. Given this difference in how tax considerations affect these decisions, we would expect that different measures of the tax incentive should have been used in these two equations. If instead the tenure decision incorporates a marginal tax rate, it may overstate the tax incentive for low-income tax payers to own. The marginal benefits of ownership for low-income households is lower because the standard deduction represents a greater share of their housing costs. An additional concern with their model is that the preferred tenure choice equation includes only a limited number of variables, including current income, household age, number of family members, and race and gender of the household head. Without adequate controls for tenure choice, it may be that the impact of the tax variable is again overstated.

5.4.3 Summary of Findings Regarding the Potential for Increasing Homeownership

Exhibit 5-9 summarizes the findings from the studies reviewed in this section. Taken as a whole, these studies examine impacts of reducing a range of constraints to homeownership, including reducing or eliminating downpayment requirements, reducing mortgage interest rates, relaxing underwriting standards, removing credit barriers, eliminating discrimination, information and housing

supply limitations, and stimulating ownership through a tax credit. Two different approaches are used in the literature. One type of study employs synthetic underwriting, where household characteristics are taken as given and specific underwriting criteria are applied to see if the household would be able to purchase an appropriately-priced home. The other type of study, constrained tenure choice model, incorporates measures of homeownership constraints into models estimating a probability of homeownership. In general, synthetic underwriting studies find less potential for increasing homeownership rates by reducing constraints than constrained tenure choice models. This difference likely reflects the fact that household circumstances are fluid so that the synthetic underwriting approach of taking income and wealth as a given underestimates the ability of households to change their circumstances to achieve homeownership. However, while these models may not provide reliable estimates of the potential for increasing homeownership rates, they can identify which approaches are likely to have the largest potential impacts. Given the fundamental differences in the magnitude of homeownership impacts from these two types of studies, the top portion of Exhibit 5-9 summarizes findings from the synthetic underwriting approach used by Listokin et al. from the constrained tenure models used by other authors.

While synthetic underwriting and constrained tenure choice models yield very different estimates of the potential for increasing homeownership rates, there are fairly consistent results in terms of which approaches are estimated to have the largest potential impact. Both types of studies generally find that downpayment assistance generally has the greatest potential for increasing homeownership rates. Quercia et al. (2002), using constrained tenure choice approach, find that homeownership rates could increase 8 to 9 percentage points if downpayment requirements were eliminated. While Listokin et al. (2002) find a smaller relative impact from removing the downpayment requirement, they do find a much larger impact from $10,000 grants. Importantly, both types of studies find that the impact of removing downpayment constraints is larger for minorities than for whites and so would help reduce homeownership gaps.

Among the two studies that examine the impacts of reducing a range of constraints, relaxing mortgage underwriting constraints is found to have the next largest potential impact in both constrained tenure choice models and synthetic underwriting. Quercia et al. find that relaxing mortgage underwriting limits (in terms of income ratios and loan-to-value ratios) could increase homeownership rates by about 3 percentage points. In contrast, Listokin et al. find fairly small impacts from a broad range of specific mortgage products compared to cash grants. Interestingly, FHA products are among the most effective at increasing homeownership rates, so mortgage product innovation during the 1990s may not represent a significant improvement over FHA products – at least in terms of enabling homeownership as they may be lower cost. While it is not surprising that synthetic underwriting finds a smaller impact, it is notable that these two approaches differ in the relative impact by race and income. Quercia et al. estimate that relaxing underwriting rules would have a greater relative impact on blacks and low- and moderate-income households, and so would contribute to lowering homeownership gaps by race and income. But Listokin et al. find smaller impacts for minorities and lower income households, so their findings suggest that these efforts would not help lower homeownership gaps.

Exhibit 5-9
Summary of Findings from Studies Examining the Potential for Increasing Homeownership Rates

Constraints	Study	Magnitude of Potential Increase In Ownership Rate (Percentage Points)	Comment
Synthetic Underwriting			
Downpayment Assistance	Listokin et al. (2002)	0.8 to 3.3 for whites 0.1 to 5.2 for blacks 0.1 to 7.0 for Hispanics	• Range reflects assumption of 0% down up to $10,000 grant • Good measures of household wealth and debt, but not credit or employment
Reduced Mortgage Interest Rate	Listokin et al. (2002)	0.3 to 0.8 for whites 0.0 to 0.1 for blacks 0.1 to 0.2 for Hispanics	• Range reflects changes to 0% and 5.0% mortgage rate from 7-8% market rate • Good measures of household wealth and debt, but not credit or employment
Relaxed Mortgage Underwriting	Listokin et al. (2002)	0.2 to 0.9 for whites 0.2 to 0.6 for blacks 0.3 to 0.6 for Hispanics 0.0 for <80% AMI 0.1 to 0.4 for 80-120% AMI 0.6 to 2.0 for >120% AMI	• Range reflects detailed underwriting criteria from wide range of actual mortgage products • Good measures of household wealth and debt, but not credit or employment
Constrained Tenure Choice Model			
Downpayment Assistance	Quercia et al. (2002)	7.7 for All Households 9.3 for black Households 8.5 for Low- and Mod-Incomes	• Based on model without dummy variable for downpayment constraint • Limited wealth and debt measures; no measures of credit or employment
Reduced Mortgage Interest Rate	Quercia et al. (2002)	0.4 for All Households 0.1 for blacks 1.2 for Low- and Mod-Incomes	• Mortgage rate declines from 6% to 8% while assuming a 20% downpayment and 28% front-end ratio • Limited wealth and debt measures; no measures of credit or employment
Relaxed Mortgage Underwriting	Quercia et al. (2002)	3.2 to 3.4 for All Households 4.4 to 4.6 for black Households 4.1 to 5.4 for Low- and Mod-Incomes	• Range reflects different combinations of relaxing mortgage constraints • Mortgage innovation impact estimated by relaxing dummy variables for income and downpayment constraints to reflect drop in LTV from 20% to 5% and increase in front-end ratio from 28% to 38% • Limited wealth and debt measures; no measures of credit or employment

Exhibit 5-9 *(Continued)*
Summary of Findings from Studies Examining the Potential for Increasing Homeownership Rates

Constraints	Study	Magnitude of Potential Increase In Ownership Rate (Percentage Points)	Comment
Constrained Tenure Choice Model *(Continued)*			
Credit Barriers Generally, Including Combined Impact of Income, Wealth, and Credit History	Rosenthal (2002)	4.1 for white Households 1.3 for black Households 6.7 for Hispanic Households 6.4 for Other Minorities 11.1 for Bottom Income Decile 7.1 for 10^{th}-25^{th} Income Percentile 6.7 for 25^{th}-50^{th} Income Percentile 3.0 for 50^{th}-75^{th} Income Percentile	• Credit barrier impact measured by applying tenure choice model for households without credit constraint to all households • Detailed information on household employment, income, and credit experience
Discrimination, Information, and Housing Supply	Galster et al. (1999)	0.7 to 1.3 Below 60% AMI 0.8 to 7.5 60-100% AMI 0.2 to 5.9 Above 100% AMI	• Impact of barriers estimated by applying tenure choice model for white suburban households to all households • Lower estimates from base model, while higher estimates assume that households with relatively low probability of owning are encouraged to own • Estimates probability of becoming homeowner over an 18-month period • Detailed information on household employment, income, and credit experience
Income Tax Credit	Green and Vandell (1999)	3.0 Overall 3.6 for Income between $20-40K 6.1 for blacks 5.8 for “Other” Minorities	• Assumes replacement of current tax policy with tax neutral credit of $810 per owner • Impacts may be overstated due to nature of tax variable used and lack of complete explanatory variables in tenure choice equation

Rosenthal (2002) finds a slightly greater potential for improving homeownership rates by removing credit barriers generally. This somewhat greater impact is consistent with the fact that Rosenthal's approach looks at a broader set of constraints. By estimating homeownership probabilities based on households who have had no difficulty obtaining credit, Rosenthal essentially incorporates limits imposed by credit history and debt levels as well as underwriting related to income and wealth. Rosenthal finds that absent credit constraints, overall homeownership rates could increase by 4 percent. With greater increases evident among Hispanics, "other" minorities, and low-income households, these efforts would contribute to reducing gaps by income and race for some groups. Rosenthal found that the impact of credit barriers on blacks, however, was fairly small. The finding for blacks stands in contrast to other studies that focus just on underwriting constraints due to income and wealth, so it may be that impaired credit history is a particularly important constraint for blacks.

Reducing mortgage interest rates is consistently found to have the smallest impact on homeownership rates by both synthetic underwriting and constrained tenure choice models. Quercia et al. find less than a 1 percent impact on homeownership rates, with a particularly small impact on black rates. Listokin et al. find a similarly small impact overall and a relatively smaller impact on minority homeownership. Given the consistency of these results, there appears to be little impact on homeownership rates from reduced interest rates and, because the impact is smaller for minorities than whites, little potential for contributing to reducing gaps by income and race through such efforts.

The study by Galster et al. (1999) is important because rather than focus on financial and underwriting constraints, it attempts to estimate the combined impact of discriminatory treatment, lack of information about the homebuying and mortgage finance process, and access to an adequate supply of suitable housing units. The approach used to estimate these factors is to examine the impact on homeownership if all households moved to homeownership at the same rate as white, suburban households. Galster et al. find that the impacts of these constraints on homeownership are less than 1 percent, and therefore are much smaller than the impacts found by Quercia et al. and Rosenthal due to credit and financial constraints. However, this smaller impact may in part result from the fact that Galster et al. focus on whether households would move to homeownership over an 18-month period. These authors do, however, find larger homeownership impacts when they consider how many households have a higher probability of owning than the households who actually purchased a home over the period studied. Under this assumption, they find that the potential increase in homeownership is similar in magnitude to that found by other studies – about 6 to 8 percentage points. While Galster et al. do not examine impacts by race due to sample size limitations, they do find generally larger impacts on the homeownership rates of those with income between 60 and 100 % of area median income. This finding suggests that lowering barriers related to discrimination, information, and housing supply would help reduce homeownership gaps by income.

Finally, Green and Vandell (1999) suggest that replacement of current tax treatment of homeownership with a tax credit has the potential for increasing overall rates and reducing ownership gaps by race and income. However, given methodological concerns with their approach their estimates may be overstated. Nonetheless, their findings do suggest that changes in tax policy may have the potential for fairly sizeable swings in homeownership rates.

The papers reviewed in this section provide some valuable insights for policy makers about what policies may be most effective in increasing homeownership and in reducing homeownership differences by income and race. In general, research has found that efforts to reduce wealth

constraints are likely to be most effective at increasing homeownership opportunities. However, as will be discussed in the next section, while these studies identify the general constraints that policy should take to boost homeownership, there is less research about the efficacy of specific approaches to address these constraints.

5.5 Studies Evaluating the Effectiveness of Specific Homeowner Policies

In this section we review studies that have examined the effectiveness of specific efforts to increase homeownership. These studies are in contrast to the work presented in the previous section that use statistical or financial models to simulate the potential for increasing homeownership. Unfortunately, this aspect of the literature is quite thin. The lack of literature in this area largely reflects the challenges of isolating program impacts in the absence of controlled experiments. However, it also reflects the lack of commitment by public and private organizations in pursuing this type of research. Evaluations of policy interventions generally require significant funding in order to design and conduct controlled experiments on a scale needed to identify impacts. While more common in the 1970s, such controlled experiments have become fairly rare in recent decades. Nonetheless, there are opportunities for creative approaches to examining program impacts that take advantage of "natural" experiments where the availability of services varies across markets or over time. This section reviews a number of studies that use such natural experiments to examine policy impacts.

There are three areas where some research exists on the effectiveness of different policy interventions, all of which relate to the supply of mortgage financing: the impact of mortgage liberalization, subsidies for housing costs, and the provision of homeownership education and counseling. The literature in each of these areas is discussed in turn below.

5.5.1 Effectiveness of Mortgage Liberalization

Perhaps the most common area of study regarding the impact of mortgage liberalization on homeownership rates has been regarding the impact of FHA lending programs. The first of recent studies was Goodman and Nichols (1997). These authors make use of panel data from the Panel Study of Income Dynamics (PSID) and the National Longitudinal Study of Youth (NLSY) to examine how a household's ability to qualify for a mortgage changed over time during the 1980s. This study is in response to other work that had highlighted FHA's large market share in serving low-income, first-time homebuyers as an indication of the importance of these mortgage products in making homeownership feasible (see, for example, Bunce et al. (1995) and Canner and Passmore (1994)).

Goodman and Nichols investigate the role of FHA in supporting homeownership by examining how many households are only eligible for FHA mortgage products and not for conventional mortgage products. They find that only a small share of renter households is only eligible for FHA products, with most either ineligible for either FHA or conventional mortgages or eligible for less costly conventional mortgages. They also find that slightly more than half of those who were only eligible for an FHA loan subsequently became eligible for a conventional loan. Goodman and Nichols also examine how many households actually took advantage of their status as being only eligible for FHA

loans to actually purchase a home. They find that only a small share of these households actually buy a home in this period.

Goodman and Nichols also simulate what the impact on homeownership rates would be in their sample under two scenarios: first, if all FHA-eligible households actually became homeowners; and second, if no households who were FHA-eligible at some point but were never eligible for conventional financing never became homeowners. This simulation finds that the assumption of no movement to homeownership by those who are never eligible for conventional financing matches the actual homeownership trends exactly, while the assumption of a strong impact of FHA eligibility on a move to homeownership greatly overstates homeownership trends. Based on this analysis, the authors conclude that FHA may at best accelerate a move to homeownership, but is unlikely to account for many households who would not become homeowners without access to FHA mortgage products. However, a key limitation of this study is that they do not have access to measures of credit risk. As a result, they may underestimate the share of borrowers who would not be eligible for conventional credit due to unobserved aspects of their risk profile.

A more recent study by Onder (2002) takes a different approach to examine the impact of FHA products on homeownership rates. Onder makes use of the geographic variation in FHA market share to examine the association between FHA activity and homeownership rates. He examines variations in homeownership rates both across census tracts within a metropolitan statistical area (MSA) as well as variation in homeownership at the MSA level based on data from the 1990 decennial census. The model uses geographic areas (either tracts or MSAs) as the unit of observation with the dependent variable being either the homeownership rate for the entire area, whites, or blacks. The explanatory variables include measures of FHA market share derived from 1990 HMDA data and measures of the income and demographic characteristics of the population in each area.

Overall, Onder finds that the level of FHA activity is positively and significantly associated with homeownership rates. However, the impact is small. His basic model finds that a 1 percent increase in FHA market share is associated with 0.02 percent higher homeownership rates at the tract level and 0.03 percent at the MSA level. In general, he also finds that FHA's impact is larger for whites than for blacks, and is larger in higher income tracts and MSAs. He concludes that FHA's impact on homeownership may not be as great on groups of most concern for policy makers – low-income and minority households and neighborhoods—questioning the effectiveness of these policies in achieving their goals.

One of the concerns with Onder's approach is that there may be selection bias in the areas with high FHA market share. Onder himself notes that his explanatory variables do not include wealth, which will be associated both with higher homeownership and lower FHA market shares. Thus, the omission of this variable may depress the estimates of FHA's impact. Nor does his model include estimates of the cost of owning. Because FHA has limits on the mortgage amount it can insure, its market share will be lower in high cost areas where homeownership rates are likely to be lower. Thus, this omission may inflate the impact of FHA on homeownership rates. This study also suffers from the fact that it is explaining overall homeownership levels in 1990, which includes the cumulative tenure choices of households over the course of decades, based on FHA's market share in the current year.

Monroe (2001) addresses these concerns by taking greater care to control for the biases in market specific measures of FHA's impact and by examining homeownership choices over time at a micro level. Monroe's approach is to take advantage of the variation both geographically and over time in the share of housing units made affordable as a result of FHA's more liberal underwriting rules. He uses micro data from the 1970, 1980, and 1990 decennial censuses to create household level measures. By using this micro data, he is also able to control for many of the factors associated with tenure choice. His principal measure of FHA's potential impact is the difference in the share of homes that could be purchased by a household using FHA's products compared to conventional mortgage products. To control for the potential bias associated with correlations between FHA's mortgage limits and housing costs in an area, Monroe creates estimates of the FHA impact on the share of housing that is affordable using national income and house price distributions, rather than MSA-specific measures.

Monroe finds that FHA's mortgage products do have a statistically significant association with higher homeownership rates, although the magnitude of this impact is fairly small. He finds that a 1 percent increase in the share of homes that are affordable because of FHA raises homeownership by 0.2 percent. At the sample mean of the FHA variable, he finds that FHA's impact on homeownership rates is 0.6 percentage points. For those households with a large impact on affordability from FHA's products (the 90^{th} percentile of this variable), the estimated impact on homeownership rates is 1.6 percentage points. Importantly, Monroe also finds that FHA's impact is larger for blacks and for those with lower educational levels (and therefore lower permanent income). For blacks, the impact on homeownership rates at the sample mean is 1.4 percentage points, with similar impacts on those with a high school education or less. Monroe's finding are significant as they represent the first study to conclude that there is evidence that FHA's lending efforts do increase homeownership rates. He also notes that to some extent his results may underestimate FHA's impact as his reliance on decennial census data only allows him to control for constraints imposed by the ratio of housing costs to income. He speculates that if he were also able to control for constraints imposed by non-housing debt and wealth levels (not to mention household credit quality), FHA's estimated impact on homeownership would be larger.

While there has been a wealth of research on the impact of mortgage market regulations on the volume of mortgage credit (see Apgar (2002) for a review of this literature), there has been almost no research on the impact of these regulations on homeownership rates. A recent paper by Ambrose et al. (2002) represents the first attempt that we are aware of to estimate the impact of the GSE housing goals established in the early 1990s on homeownership rates. Similar to the approach used by Onder and Monroe, this study compares the variation in GSE market shares across metropolitan areas to differences in homeownership rates and changes in homeownership rates. Given the timing of this study, the authors could not use decennial census data and so instead rely on the American Housing Survey (AHS) for 1991 and 1997 for their analysis. The AHS is used to derive homeownership rates for all households and for low- and moderate-income households in 80 MSAs in both 1991 and 1997. These homeownership rates are then related to GSE market shares for all loans, loans to low- and moderate-income households, and loans to high-income households for the period from 1995 to 1999 as derived from HMDA data. The results of this analysis are essentially inconclusive. The only statistically significant result is that a higher GSE share of low- and moderate-income lending is associated with a larger decline in the difference in homeownership rates between low- and moderate-income households and the overall homeownership rate. However, because the GSE shares are *not*

associated with changes in the homeownership rates themselves, this result seems implausible – how can a higher GSE share reduce homeownership gaps without increasing the homeownership rate? The inconclusive findings are perhaps not surprising given the short period of time studied and the relative crude measures of homeownership rates available at the MSA level. As the authors note, this analysis is perhaps most valuable as a suggestion of the type of analysis that might be informative using more detailed data from the 2000 decennial census.

A final study worth noting is Painter and Redfearn (2002) who develop a time series regression model to examine the relationship between changes in interest rates and changes in homeownership rates at the regional level over time. Their analysis is of interest for policy makers to the extent that the role of the GSEs in the mortgage market is to promote homeownership by lowering the cost of mortgage financing. Their results fail to find any statistically significant relationship between trends in homeownership rates and trends in interest rates in any of the four regions studied. Despite the lack of statistical significance of their coefficients, they use the estimated model to simulate the impact of a 2.65 percentage point rise in interest rates. They find that while homeownership rates may react in the short-run to this change, the long-run change in homeownership rates from this shock is small. They conclude that interest rate movements have little impact on overall homeownership rates but may affect the timing of the homeownership choice. This result is consistent with the finding of synthetic underwriting studies that changes in interest rates have little impact on the share of renters who could qualify for a mortgage as well as the constrained tenure choice models that find less potential for increasing homeownership by reducing income constraints.

5.5.2 Effectiveness of Subsidies in Promoting Homeownership

Despite the wide spread use of downpayment assistance programs, there have been almost no evaluations of the impact of specific subsidy programs on the probability of homeownership. One exception is a study by Engelhardt (1997) on the impact of tax incentives used to support savings for downpayments in Canada. While not a direct subsidy, the study's findings on these tax incentives are suggestive of the potential impact of efforts that address the general issue of a lack of wealth. The focus of Engelhardt's study is the Registered Home Ownership Savings Plan (RHOSP) that was a provision of Canadian tax law from 1974 through 1985. RHOSP allowed an annual tax deduction of up to $1,000 per individual on savings committed to the purchase of a first home. There was a cap of $10,000 on total contributions per individual (thus, $20,000 for married couples). There were no income limits in eligibility, although previous owners, owners of other real estate, and spouses of owners were ineligible. The investments had to be withdrawn in a single lump sum within 20 years to purchase a home.

The tax savings included not only sheltering the contributed savings from taxes, but also sheltering the earnings on the investment. Engelhardt estimates that the financial benefits of these tax savings were substantial given the fairly high marginal tax rates prevailing at the time (estimated to be 44.4 percent including both federal and provincial taxes). An annual investment of $2,000 per year by a married couple would reach $7,300 after three years (assuming a 10 percent return on investment), compared to $3,600 for similar savings effort that was not shielded from taxes. Given the range of median home prices across Canadian provinces in the early 1980s, this increased return was equivalent to a grant of between 3 and 5 percent of home prices.

Engelhardt makes use of the fact that the tax incentive was terminated in 1985 to examine the impact of this incentive on the probability of moving to homeownership. His data source is the Canadian Family Expenditure Survey, which provides relatively rich information on household income, expenditures, and savings. He pools data from 1982, 1984, and 1986 to include observations on households both before and after the termination of this incentive. His approach is to estimate a probit model of tenure choice including a variety of factors known to determine demand for homeownership as well as dummy variables for the availability of the program, both alone and interacted with the household's estimated marginal tax rate. Because the value of the savings incentive increases with higher marginal tax rates, the program would be assumed to have a higher impact on the tenure choice of higher income households. His results indicate that there was a statistically significant association between higher marginal tax rates and transition to homeownership prior to termination of the program. Specifically, the movement to homeownership was estimated to be 20 percent higher for households facing a high marginal tax rate prior to discontinuation of the program. Based on this finding, the author concludes that tax incentives to boost savings for homeownership rate can have a significant impact on the rate of transition to homeownership.

However, the author does not address the question of whether the savings program merely accelerated the move to homeownership rather than made homeownership more likely for households who might otherwise never own. Given the greater value and use of the incentive by higher income households, it does seem likely that the impact was mostly on the timing of the tenure switch and not the share of households ever making this transition. While suggestive of the potential for savings incentives to spur homeownership, there would be an important distinction between this Canadian program and efforts to specifically target low-income households with tax incentives.

5.5.3 Effectiveness of Homeownership Education and Counseling

One of the most common efforts to promote low-income homeownership over the last decade has been the provision of homeownership education and counseling (HEC).[125] As described in section 5.3, HEC is intended to address a lack of information by low-income and minority households about the homebuying process, which is thought to be an impediment to homeownership. In this regard, the goal of HEC is to increase the number of homebuyers. A related goal of HEC is to better prepare these households for homeownership. As described by McCarthy and Quercia (2000), the growth of HEC over the last decade has been driven in part by lenders seeking to extend mortgage credit to a riskier class of borrowers in order to comply with government regulations such as the Community Reinvestment Act and the affordable housing goals of the GSEs. HEC has been embraced by lenders as a means of mitigating the default risk of these loans. Thus, there are two different goals of HEC:

[125] While education and counseling are generally lumped together, there is an important distinction in the nature of services provided. As explained by McCarthy and Quercia (2000), education refers to the provision of information that is general in nature and is not specific to the counselee. Education generally is provided in group settings and covers the process of searching for a home, negotiating a home purchase, the financial and other obligations of homeownership, and determining eligibility for mortgage finance. Counseling, on the other hand, encompasses more intensive one-on-one meetings with clients to go over the specific needs and circumstances of the client to determine what steps are needed to prepare for homeownership. Given its more intensive nature, counseling is much more expensive to provide than education.

to increase the number of households who become homeowners and to lower the probability of default among these households.

But while there has been a fair amount of emphasis on the use of HEC as a means of promoting homeownership, there has been very little research that has evaluated the effectiveness of counseling in achieving its goals. McCarthy and Quercia (2000) describe how relatively large-scale HEC efforts were developed in the early 1970s in response to high default rates in FHA's Section 235 program that provided subsidized interest rates to low-income homeowners. During the 1970s there were several efforts to evaluate the effectiveness of these counseling efforts, but these studies yielded few, if any, conclusive findings. Then over the next two decades there was essentially no research on counseling effectiveness. As a result, as recently as 2000, McCarthy and Quercia concluded that "there is little tangible evidence that HEC works to expand or stabilize homeownership." However, in the last few years, several studies have examined the effectiveness of HEC in lowering default probabilities. Still, no new research has examined the question of whether counseling is effective in increasing the likelihood that low-income households will become homeowners. In the sections that follow we review the existing literature on the effectiveness of HEC in lowering defaults and in promoting homeownership.

Effectiveness of HEC in Lowering Default

One of the first studies in recent years to examine the relationship between HEC and mortgage default was Hirad and Zorn (2002). This study examined the performance of mortgages acquired by Freddie Mac through its Affordable Gold program, which requires that at least one of the borrowers on each loan have had some type of HEC. The study makes use of the fact that about 3 percent of borrowers through this program are exempted from the counseling requirements to examine the impact of HEC on the probability that a loan will experience a 90-day delinquency. Freddie Mac also tracks the organization that provides the counseling (lender, non-profit, government agency, or other) and type of services received by borrowers (classroom, home study, individual counseling, or "other" – which is either telephone counseling or a combination of classroom and individual sessions). In addition to information on HEC, Freddie Mac also has a wealth of information on the borrower and the loan to assess credit risk. Thus, the study is able to examine how 90-day delinquency rates vary with whether HEC is provided, the type of HEC, and the type of organization providing the services, controlling for other risk factors. In addition to the rich data available on risk factors, this study also benefits from having a sample of slightly more than 39,000 loans.

The study finds statistically significant lower 90-day delinquency rates among borrowers who receive HEC. Individual counseling is found to have the largest impact, lowering the probability of serious delinquency by 34 percent. Classroom and home study counseling are also found to lower the probability of delinquency by 26 and 21 percent, respectively. Telephone counseling is found to have no statistically significant impact. There were no statistically significant differences in delinquency based on the type of organization delivering services. The study also examined whether the observed differences might be due to selection bias in terms of which borrowers receive the different types of services. The results of the two-stage model to control for selection bias are hampered by difficulty in predicting which type of services borrowers receive. However, the results that are statistically significant are consistent with the basic finding of counseling's effectiveness in lowering defaults.

Another recent study that examines the effectiveness of pre-purchase counseling in lowering defaults is Hartarska et al. (2002). This study examines a program begun in 1992 in Columbus, Ohio

involving counseling by a non-profit agency to support mortgage lending by a local bank. The counseling services provided included both one-on-one and classroom sessions. The process included a careful review of the total household budget and the household's ability to support housing debt. Data for the study includes a random sample of 394 loans originated between 1992 and 2000 across six states. Of the sampled loans, 294 received counseling. The study estimates a hazard model to examine the relationship between the receipt of counseling services and the probability of foreclosure. The results indicate that the program is associated with lower default risk as counseled borrowers had one-half the hazard rate of non-counseled borrowers. This result is only statistically significant at the 10-percent significance level, but given the relatively small sample size this is not unreasonable. The authors hypothesize that the success of the program stems from the rigorous screening that occurred during the counseling process to determine which households were most able to meet the demands of homeownership. While the estimation results do not separate the impact of counseling from the screening, this conclusion does seem plausible given the nature of the counseling process.

One of the issues raised by both Hirad and Zorn and Hartarska et al. is whether the effectiveness of HEC is due to selection bias rather than benefits from the services provided. That is, it is possible that HEC is effective not because the services provided are addressing information gaps among potential borrowers, but rather because the counseling process is a better way of identifying low-risk borrowers than standard underwriting criteria alone. Hirad and Zorn's attempted to control for this selection bias, but had limited success. Hartarska et al. make no attempt to control for this selection bias and, in fact, conclude that the positive impact of the program may be precisely because of this bias. The question of whether counseling's effectiveness is due to this selection process is not just an academic question, because if there were an expansion of counseling programs in order to reap the rewards of lower default rates, the greater availability of counseling may weaken the screening aspect of the counseling process.

The study by Staten et al. (2002) is notable in this regard by including somewhat more rigorous controls for selection bias in examining the impact of credit counseling on borrower behavior. While this study examines consumer credit generally rather than mortgage lending, its findings may nonetheless be of some importance for homeownership counseling as well. This study examines the impact of one-on-one credit counseling delivered by five agencies to approximately 14,000 clients during a five-month period in 1997. A pseudo-control group is created from credit bureau data by identifying households with similar credit profiles but located in areas not served by the counseling agencies. Similar to Hirad and Zorn, they estimate a two-stage model where the first stage predicts which households will receive counseling and the second stage uses this predicted probability of receiving counseling as an instrument for the use of counseling in estimating the impacts of counseling on subsequent credit profile. Staten et al. are able to predict the use of counseling with greater accuracy than Hirad and Zorn and so their controls for selection bias are more successful. They find that counseling did improve clients' credit profile over a three-year period relative to the control group, with greater impacts on those who started with the weakest credit measures. Improvements were evident in such measures as fewer accounts open, lower debt levels, fewer delinquencies, and greater improvements in credit scores. The authors conclude that the results provide strong evidence for the effectiveness of credit counseling.

Effectiveness of HEC in Promoting Homeownership

Collectively, the above studies provide evidence that pre-purchase counseling helps lower mortgage default. However, perhaps more important for this study is the question of whether HEC is effective

at increasing the number of households who become homeowners.[126] Unfortunately, there has been very little research on this question and what has been done is both very old—completed more than 20 years ago—and generally inconclusive. Several recent articles have examined this question, including Quercia and Wachter (1996), Strauss and Phillips (1997), and Mallach (2000). Of these, Strauss and Phillips provide the most in depth review of these older studies.

There were three studies done during the 1970s that evaluated the effectiveness of pre-purchase counseling associated with FHA's Section 235 program, which offered subsidized mortgage interest rates and low downpayment loan to low-income households. The most extensive of these studies was conducted by Abt Associates for HUD (Feins et al. (1980)). While the findings were generally inconclusive, it is instructive to review this study in some detail as it highlights the challenges of conducting this type of evaluation.

This study attempted to create treatment and control groups and to then track these groups over time to evaluate the effectiveness of the counseling in promoting homeownership. An immediate challenge for the study was recruiting households for participation. They conducted six months of outreach and recruitment, but had limited success in attracting participants. The study found that of every 10,000 households eligible for the program, 1,960 would learn about the availability of counseling, 1,390 would inquire about it, 640 would enroll in it, and 477 would actually show up for counseling. Thus, there were serious concerns about the selection bias in terms of which households ultimately chose to participate.

The study used the 477 households who showed up for counseling to create the treatment and control groups. The "control" group received only printed information about the homeownership process and did not receive any classroom or individual instruction. All participants in the program received these written materials and rated them as being helpful. So another problem for the study was that the control group actually received helpful services. The remaining participants were divided into two treatment groups: those receiving group counseling only and those receiving one-on-one counseling along with advocacy activities such as home inspections and attendance at closing. However, in practice the difference in services between these last two groups was small. Given the low participation rate in the study, the "group" sessions consisted of an average of 3 households and so were not much less personal than the one-on-one sessions. And very few individual counselees (13 percent) took advantage of the advocacy services.

The study then followed households for 9 months to see which households purchased homes and to gather information about the search process and the housing choices made. The only statistically significant difference found between the three experimental groups was that those in group counseling sessions were less likely to purchase a home than either the control group or those with one-on-one counseling. The authors hypothesize that the group setting may have intimidated participants by its somewhat more formal presentation of the issues of affordability and the process of deciding whether to buy. More of the households in group sessions reported formally discussing the decision to buy (93 percent) than those in one-on-one counseling (62 percent). This outcome actually is in keeping with the goal of counseling of having households make more informed choices about

[126] Of course, reducing mortgage default also contributes to increasing homeownership rates by reducing the loss of homeowner households. Still, one of the attractions of HEC for policy makers is its potential for helping households make the transition into homeownership.

buying a home. However, the study could not determine whether those who chose not to purchase were actually making a better decision than those who chose to purchase. In addition, the relatively short tracking period of the study after counseling left open the question of whether these differences would narrow with more time.

The Abt study highlights several of the challenges associated with evaluating HEC's effectiveness. First, it can be difficult to recruit participants to obtain these services. Given the challenge of recruiting participants, there can be significant selection bias among the group that chooses to participate that makes it difficult to draw conclusions about HEC's effectiveness. Second, in order to create an appropriate control group services must be withheld from some participants. There are always ethical concerns about withholding services thought to be valuable and in the Abt study this was handled by providing limited services to the "control" group. But because these limited services were found to be valuable, this group was not truly a control group.[127] Another challenge for this type of study is that the decision to buy a home may unfold over the period of several years. The Abt study only tracked households for 9 months following the recruitment and counseling period, leaving open the question of whether the one group with lower homebuying rates may have closed this gap within a few additional months. Finally, it is also possible that the impact of counseling will be to reduce homebuying probabilities. In fact, this result might be expected because the goal of these efforts is to allow households to make a more informed choice about homeownership. Because all of the households who attend this training are motivated enough to pursue homeownership to invest time in these classes, it might be expected that its largest impact would be in deterring some households from buying a home in the near future.

Two other studies from the 1970s summarized by Strauss and Phillips (1997) are also worth a brief discussion as they highlight other challenges of these types of evaluation. The earliest study of the effectiveness of counseling was of a program by the San Francisco Development Fund in the late 1960s. The evaluation of these efforts found that pre-purchase counseling was associated with a higher probability of purchasing a home. However, an important limitation of this finding was that the program also offered financial support for homebuyers, so the impact of counseling could not be separated from the impact of the financial assistance. This issue would also be of importance today as many counseling programs are used as a screen for offering special mortgage products or financial assistance. The University of California also conducted an evaluation of counseling in the Section 237 program in 1972. This study relied on a post-hoc review of files on program participants to evaluate the effectiveness of counseling. It attempted to create a control group from a group of counseling applicants who were rejected for participation. The study found that participants were more likely to purchase homes, but it seems likely that the program's impact was due to the screening process and not the counseling services. This highlights the need to control for pre-screening processes in evaluating counseling programs because most programs employ some type of initial assessment. Finally, both of these studies consisted of very small samples of participants – less than a hundred in both cases. Studies that are designed around local programs will also have to confront this issue of small sample sizes.

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[127] While not evident in the Abt study, a likely challenge in this regard is that those who are rejected for services to form a control group are free to pursue other opportunities for counseling and homeownership support. With the growth of these programs in recent years, it may be difficult to maintain a true control group over time.

5.6 Chapter Summary

The first step in thinking about policy options for closing homeownership gaps is to identify the constraints on greater homeownership by low-income and minority households. For policy purposes, the most important constraints are on the supply side, as these barriers limit the ability of households who might otherwise choose to be owners from purchasing a home. Homeownership deterrents on the demand side largely relate to factors that make the investment risk of owning too great for some households. While some efforts to address these risks may be helpful and appropriate, such as home equity insurance, in many cases it will simply be the case that the risk of homeownership is inappropriate for low-income and low-wealth households. The high transaction costs of buying and selling homes also deters households with high-expected mobility from pursuing homeownership. But, again, these households are probably simply best off renting.

There are two broad categories of supply-side limits on homeownership: limitations on access to mortgage financing needed to purchase homes, and in some markets, a lack of supply of housing units that are affordable and attractive options for low-income households. An important feature that restricts low-income household access to mortgage finance is the set of underwriting guidelines used by lenders to limit the risk of mortgage default. Lenders require, for instance, that borrowers not exceed limits on debt to income ratios and loan to value ratios, and that they have a history of having met their credit obligations. The tendency of low-income families to have limited income and wealth, and also poor credit histories, all serve to limit low-income household access to mortgage finance. In addition, lack of understanding about the mortgage process and racial discrimination further limit the ability of low-income and minority households to obtain mortgage financing.

Another supply side barrier is a lack of access to housing that is affordable and attractive for homeownership. One way in which the supply of housing suitable for low-income homeownership may be constrained is by excessive regulation of land use and building codes. Minorities and low-income households may also have difficulty accessing suitable housing due to racial discrimination in housing markets or a lack of understanding about the process of searching for and negotiating the purchase of a home.

Much of the research on the importance of these barriers in limiting homeownership has focused on limits on access to mortgage finance. The most informative studies about the likely impact of changes in the mortgage market on homeownership rates are those that estimate the impact on the probability of homeownership of removing these constraints. In general, these studies have found that a lack of wealth to meet downpayment requirements is a much more important limitation on homeownership than is a lack of income to meet limits on monthly payments. In terms of the magnitude of the potential for increasing homeownership, a study by Quercia et al. (2002) using the most recent data finds that reducing the downpayment requirement from 20 percent to none could increase homeownership rates by about 8 percentage points, while more moderate reductions in downpayment requirements and relaxation of payment ratios would increase homeownership by about 3 percentage points. In both cases, gains are found to be slightly larger for blacks and low-income households, thus contributing to a narrowing of homeownership gaps. This same study finds that a reduction in interest rates of 2 percentage points would increase homeownership rates by less than 1 percent overall, and have nearly no impact on homeownership among blacks. This finding is

consistent with other studies that find little impact from lower interest rates on the ability of households to qualify for a mortgage.

In keeping with these findings, Rosenthal (2002) also finds that the removal of credit barriers generally, including wealth and income limitations as well as problematic credit histories, would raise overall homeownership rates by about 4 percentage points. Homeownership gaps by race and income are projected to decrease as gains among Hispanics and "Other" minorities would be about 2 percentage points higher, while lower income households would have gains from 7 to 11 percentage points. blacks, however, are projected to have smaller gains than average. Overall, the studies by Quercia et al. (2002) and Rosenthal (2002) suggest that removing credit barriers could boost homeownership rates by 4 to 8 percentage points.

Few studies have attempted to estimate the impact of other supply side barriers that limit access to homeownership, such as racial discrimination, lack of information about housing and mortgage markets, or access to suitable housing for ownership. One study that addresses this issue is Galster et al. (1999). These authors assume that homeownership propensities of white, suburban households most closely approximate homeownership choices unfettered by discrimination, information, or supply restrictions. By applying a tenure choice model of white suburban households to all households, Galster et al. estimate the number of low-income renter households that would be predicted to become owners over an 18-month period. The number of additional owners predicted by this model suggests that that homeownership rates could be increased by about 1 percentage point for lower-income households. Thus, at least based on this approach, the impact of these barriers on overall homeownership rates may not be large. However, this may reflect the relatively short period of time over which households were tracked in the data used in this study.

Another strand of the literature that examines the potential for increasing homeownership uses a synthetic underwriting approach. These studies rely on very detailed information on current household financial circumstances and apply varying assumptions about underwriting requirements, home prices, and transaction costs to estimate how changes in these parameters affect the number of households who could qualify for a mortgage. Estimates from these studies of the influence of various underwriting requirements on homeownership rates are fairly small, possibly because these studies do not allow for households to change their financial circumstances in order to qualify for homeownership. Nonetheless, the findings from these studies are instructive about the relative importance of different options for increasing access to homeownership.

The most recent of the synthetic underwriting studies, and in many respects the most thorough, is Listokin et al. (2002). One part of this study compares the impact of specific mortgage products, including a range of new products with relaxed underwriting requirements, on the number of households that would qualify for a mortgage. Perhaps one of the most interesting aspects of this analysis is that FHA guidelines are as effective at reaching low-income and minority households as most of the new products. Listokin et al. also examine the potential of a range of interventions to increase homeownership, such as lowering interest rates, reducing downpayment levels, lowering transaction costs, reducing home prices, and providing income supplements or cash grants. They find that by far the most effective policy is to provide cash grants of $10,000 that directly address a range of financial constraints arising from lack of household savings. (Grants of $5,000 have a fairly large impact, but $10,000 grants have a several-fold larger impact.) Such grants alleviate the need to pay downpayment and closing costs, provide a fund for reserve requirements, and help to pay down

existing debts. These findings are in keeping with conclusions from other studies that lack of wealth is the most important barrier to homeownership for low-income households.

All of the studies referred to thus far examine the potential impact of various supply-side barriers on homeownership rates. This chapter has also reviewed studies that have examined the impact of existing policies on homeownership rates. For the most part, this area of the literature is quite thin. One area of study has been the impact of FHA mortgage products on homeownership rates. The most careful of these studies concludes that FHA has had a positive impact on homeownership rates, with larger impacts among minorities. While the magnitude of the impact is not large, the study may underestimate FHA's impact as it does not include constraints related to total household debt, wealth, or credit quality. There have been almost no studies of the effectiveness of direct subsidies in increasing homeownership rates. One study that touches upon this issue examines the impact of a Canadian tax incentive to encourage savings for homeownership. This study finds this program was effective in increasing the transition to homeownership, but because the program was of most benefit to higher income households it is not clear whether this finding would hold true for tax policies aimed at low-income households. Finally, while there has been a dearth of studies on the impact of homeowner education and counseling, there have recently been several studies on this topic. These studies consistently find that counseling is associated with lower default rates. While in some cases this impact may be associated with the rigorous screening of applicants by counseling agencies, some of these studies find that a positive impact remains even after controlling for selection effects. However, none of these studies have addressed the question of whether counseling increases the probability of buying a home, only whether default risk is lowered. The importance of counseling for increasing homeownership transition is an area where further research is needed.

As we have previously noted, one of the most effective ways to increase homeownership among low-income and minority households would be to improve the financial well being of these households. Thus, public policies that help to provide better and more stable economic opportunities would likely be the most effective homeownership policy. Nonetheless, taken as a whole the literature does suggest some housing-specific policies that have promise for increasing homeownership among low-income and minority households. One consistent finding from studies examining financial constraints on homeownership is that a lack of savings is the single most important barrier to homeownership. The importance of savings is due in part to the fact that it is related to a range of financing requirements, including the downpayment, closings costs, reserve requirements, and the level of outstanding debts. The influence of savings on the willingness of families to take on financial risk is also important. Thus, policies that address a lack of savings by low-income and minority families are likely to have an important impact on homeownership rates.

Downpayment assistance in the form of loans or grants would seem like an obvious policy response to the challenge that families with limited savings face. But it is important to note that for many households it is not just the downpayment requirement that is binding. In fact, given the introduction of low or zero downpayment loans in the last decade, the downpayment itself may be less of a constraint now than it was in years past.[128] Allowing loans or grants to be used for closing costs and

[128] However, while low downpayment loan products are common, this does not mean that loan volumes through these programs are high. For example, in 2002 the GSEs purchased about 175,000 loans with down payments of less than 5 percent. While this is not a trivial number, it is still small relative to the number of households constrained from purchasing a home by a lack of wealth.

outstanding debts in addition to meeting downpayment requirements would address the broader challenge of limited wealth. There would be significant concerns, however, about whether households given such assistance would have a sufficiently strong financial stake in their homes, and whether such families would pose undue default risks. There would also be concern about whether households who have been unable to save in the past would have the financial capability to meet the ongoing and uncertain financial demands of homeownership. For this reason, low down payment mortgage products often require pre-purchase counseling to prepare these households for homeownership. For similar reasons, efforts to help households develop the ability to accrue savings could be an important part of a broader homeownership policy. Current examples of such policies in other contexts include the government's willingness to match contributions in various settings – for example by allowing charitable donations to be tax deductible – or to shield savings from taxation as in IRA type accounts. Such initiatives directed towards savings earmarked for homeownership would encourage households to save. Also, efforts to educate households about financial management may help to develop the skills and habits needed for savings accumulation.

It should also be emphasized that our endorsement of efforts to address a lack of savings does not mean that the wide range of efforts currently underway as identified in Section 5.3 are without merit. Policies to reduce mortgage costs, regulatory barriers, and racial discrimination will all have incremental impacts on homeownership rates. In addition, many of these policies address important social and ethical goals that go well beyond that of homeownership. It is also true that we do not have as good information about the impact of some of these barriers on homeownership rates as we do for financial constraints. To some extent the emphasis on overcoming financial barriers reflects our greater ability to identify and quantify the impact of these barriers.

As a concluding note, there are clear needs for additional research to help identify policies that are likely to be most effective in closing homeownership gaps. In particular, there is a significant gap in research designed to evaluate the effectiveness of specific policies. Policy makers should consider including evaluation efforts as part of homeownership programs. Given the emphasis on downpayment assistance and education and counseling, these are two areas where evaluative research would be most beneficial. In addition, while the influence of financial constraints on access to homeownership has been extensively studied, efforts to examine the influence of potentially important constraints have been thin. Such constraints include limits on access to housing conducive to homeownership, and the degree and manner in which limited access to information about financing and housing opportunities deter potential for homeownership.

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Appendix A
Testing the Investment-Consumption Demand Model

The ordinal ranking of housing subtenure in Exhibit 2-6, which is based on the difference between the investment (H_I) and consumption (H_C) demands for housing (denoted by J) suggests that an ordered discrete choice model could be used to evaluate choice of housing subtenure.[129] Accordingly, define the investment demand for housing,

$$H_{Ii} = X_i b_I + e_{Ii}\ , \tag{1}$$

the consumption demand for housing,

$$H_{Ci} = X_i b_C + e_{Ci}\ , \tag{2}$$

And their difference

$$J_i \equiv X_i(b_I - b_C) + e_{Ii} - e_{Ci} = X_i g + w_i, \tag{3}$$

where $g \equiv b_I - b_C$, and $w_i \equiv e_{Ii} - e_{Ci}$. Housing subtenure is then determined by,

$$-\infty < J_i < \alpha_1 \quad \rightarrow \quad -\infty < w_i < \alpha_1 - X_i g \quad \rightarrow \quad \text{Rent1} \tag{4.1}$$
$$\alpha_1 < J_i < \alpha_2 \quad \rightarrow \quad \alpha_1 - X_i g < w_i < \alpha_2 - X_i g \quad \rightarrow \quad \text{Rent2} \tag{4.2}$$
$$\alpha_2 < J_i < \alpha_3 \quad \rightarrow \quad \alpha_2 - X_i g < w_i < \alpha_3 - X_i g \quad \rightarrow \quad \text{Own1} \tag{4.3}$$
$$\alpha_3 < J_i < \infty \quad \rightarrow \quad \alpha_3 - X_i g < w_i < \infty \quad \rightarrow \quad \text{Own2} \tag{4.4}$$

where (4.1) through (4.4) reflect the ordinal ranking of subtenures as in Exhibit 2-6.

Under the assumption that e_{Ii} and e_{Ci} obey a bivariate normal distribution, w_i also is distributed normal with variance $\sigma^2_w = \sigma^2_I + \sigma^2_C - 2\sigma_{IC}$. Consistent estimates of g/σ_w, α_1/σ_w, α_2/σ_w, and α_3/σ_w can be obtained based on an ordered probit procedure. The log likelihood function for the ordered probit model is given by,

$$\begin{aligned} L = \sum_i \{ & \text{rent1}_i \cdot \log\{F(\alpha_1/\sigma_w - X_i g/\sigma_w)\} \\ & + \text{rent2}_i \cdot \log\{F(\alpha_2/\sigma_w - X_i g/\sigma_w) - F(\alpha_1/\sigma_w - X_i g/\sigma_w)\} \\ & + \text{own1}_i \cdot \log\{F(\alpha_3/\sigma_w - X_i g/\sigma_w) - F(\alpha_2/\sigma_w - X_i g/\sigma_w)\} \\ & + \text{own2}_i \cdot \log\{1 - F(\alpha_3/\sigma_w - X_i g/\sigma_w)\}\}, \end{aligned} \tag{5}$$

where the constant in X is normalized to zero, F is the standard normal distribution function, and the dependent variables indicating the household's subtenure, Rent1, Rent2, Own1, and Own2, are 1-0 variables which sum to 1 for each family.

Under the null hypothesis that equations (4.1-4) correctly characterize the choice of housing subtenure, and that *w* is distributed normal, a "coarser" version of the subtenure choice model is also estimable. Specifically, note that the probability of observing an Own2 household is,

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[129] In addition, because J itself is the difference between H_I and H_C, and H_I and H_C are directly observed for the subsample consisting of Own2 households, in principle, a maximum likelihood model could be estimated which identifies the investment and consumption functions while simultaneously determining housing subtenure.

$$\Pr[J_i > \alpha_3] = \Pr[w/\sigma_w < -\alpha_3/\sigma_w + X_i g_1/\sigma_w], \quad (6.1)$$

the probability of observing an owner-occupier (Own2 or Own1) is,

$$\Pr[J_i > \alpha_2] = \Pr[w/\sigma_w < -\alpha_2/\sigma_w + X_i g_2/\sigma_w], \quad (6.2)$$

and the probability of observing someone other than a Rent1 family (Rent2, Own2, or Own1) is,

$$\Pr[J_i > \alpha_1] = \Pr[w/\sigma_w < -\alpha_1/\sigma_w + X_i g_3/\sigma_w]. \quad (6.3)$$

Equations (6.1-3) are each estimable by maximum likelihood probit and yield consistent, but inefficient, estimates of all of the parameters of the ordered probit model under the null hypothesis. Note, however, that the slope parameters in (6.1-3) are not constrained to be equal across the three probit equations. Hence, under the alternative hypothesis that (4.1-4) do not correctly characterize choice of housing subtenure, the parameters in (6.1-3) still are consistent but would likely differ from estimates obtained from the ordered probit method.

Under these conditions a Hausman test can be used to evaluate the model structure implied by (4.1-4). The test statistic is given by,

$$T = \sum_k (q_{ok} - q_{sk})'[V_{ok} - V_{sk}]^{-1}(q_{ok} - q_{sk}),$$

where k={1,2,3}, for each of the three probit models in (6), q are parameters from the ordered (o) probit and single (s) probit models (where the appropriate α is included in q_{ok}), and V_{ok} and V_{sk} are the corresponding covariance matrices. If the model structure is correct, T is asymptotically distributed Chi-square (with degrees of freedom equal to the total number of restrictions). In addition, given the structure in Exhibit 2.2-1, under plausible conditions one would expect α_1 and α_2 to be negative while α_3 should be positive.

Estimates from Rosenthal and Ioannides (1994) indicate that α_1 and α_2 are negative while α_3 is positive as anticipated using Survey of Consumer Finances data from 1983. Howe (2002) obtains a similar result using American Housing Survey (AHS) data from 1989 and 1995.[130] This suggests that in the United States households become owner-occupiers somewhat before their investment demand rises up above their consumption demand, but that owning real estate in addition to the primary residence typically occurs only after H_I exceeds $H_{C.}$[131]

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[130] Howe also separately examines individuals that live in manufactured housing. Such families either rent both land and structure, rent land but own structure, own both land and structure, or own both land and structure in addition to other real estate. Howe's results for these families are as above except that α_3 is essentially equal to zero.

[131] In contrast, using French data, Arrondel and Lefebvre (2001) obtain negative and significant estimates for all of the constant terms, α_1 and α_2 and α_3. This would imply that consumption demand drives the housing investment decisions, even among those homeowners that own additional real estate. If correct, this suggests that the processes that determine investment in homeownership and other real estate differ for France and the United States.

Rosenthal and Ioannides (1994) and Arrondel and Lefebvre (2001) also estimate the Hausman test of the model described above for U.S. and French data, respectively. In both cases the data reject the strict version of the model structure. However, it is important to emphasize that this does not imply that the model in Exhibit 2.2-1 does not help to explain homeownership gaps. Instead, especially in light of other test results that support the model structure, these findings imply that factors outside of the model also affect access to homeownership and homeownership rates. Such factors may include supply-side effects, such as the spatial distribution of new and old homes in different parts of the city, mortgage financing constraints, or other features of the housing market not captured by the model.

Appendix B
Mortgage Credit Barriers and the Influence of Fair Lending Legislation

As in the Stiglitz-Weiss redlining model (Part IV, 1981), suppose that borrowers and lenders are risk neutral, loans are standard debt contracts, borrowers have more information about and control over their default risk than do lenders, and the expected rate of return per dollar of loan (E) for a group of observationally equivalent borrowers is concave in loan rates (R) owing to adverse selection and moral hazard effects. In addition, all loans are of equal size (L), sufficient information exists to divide prospective borrowers into observationally distinguishable groups on the basis of default risk, and there is no government intervention in the loan market.[132] Initially, suppose also that there is no market for private mortgage insurance.

Given these assumptions Stiglitz and Weiss show that lenders would price their loans separately for each observationally distinguishable group of loan applicants and considerable rate sorting would occur. Such a scenario is shown in Exhibit B-1, where the loan quality of different groups is indexed in declining alphabetical order for groups *a* through *d*. At a real funding cost of r* per dollar of loan, groups *a* through *d* are offered loans at rates ranging from R(*a*, L) to R(*d*, L). Hence, substantial rate sorting occurs. At a higher real rate r**, groups *a* and *b* face higher loan rates. In addition, observe that type *d* and *c* borrowers cannot receive credit even if they offer to pay higher interest rates. Under these conditions, Stiglitz and Weiss (1981) emphasize that some loan applicants may be credit constrained even though rate sorting still occurs among individuals that receive credit.[133]

As noted in the text, however, Duca and Rosenthal (1994b) argue that for the mortgage market, Fair Lending Laws – which are applied in a similar fashion to all types of mortgage lenders – and the threat of costly litigation create strong incentives for a given lender to offer similar loan rates to observationally distinguishable borrowers. This would be especially true in cases where lenders felt that credit risk was correlated with politically sensitive characteristics such as race and ethnicity, sex, and age.

To clarify how lenders might respond to these conditions, Duca and Rosenthal (1994b) assume that credit risk increases with loan size, *ceteris paribus.* In addition, suppose that it is relatively difficult for regulators to examine the manner in which lenders vary loan qualification standards across borrowers, particularly in comparison to the manner in which lenders vary loan rates across borrowers. Then lenders are likely to increase the extent to which non-rate terms are used to impose binding debt ceilings on high risk borrowers.

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[132] This last assumption is implicitly imposed by Stiglitz and Weiss (1981), while the other assumptions are explicitly stated in the Stiglitz and Weiss (1981) paper.

[133] Note that the existence of the secondary mortgage market does not necessarily rule out rate sorting in the primary mortgage market. The main reason is that secondary lenders could, in principle, price mortgages in a manner consistent with the analysis of Figure 1, thereby providing incentives for primary lenders to engage in rate sorting. In addition, we should note that primary lenders issue many nonconforming mortgages that are held in portfolio instead of being sold to the secondary market.

Exhibit B-1 illustrates this point. For borrowers belonging to a particular risk classification (*b*), observe that an increase in loan size shifts down the lender's expected rate of return function (per dollar of loan) because of increasing default risk, where loan size is indexed in increasing numerical order (e.g., $L_2 > L_1$, $L_3 > L_2$, $L_4 > L_3$). As before, lenders adjust for default risk by setting loan rates subject to the equilibrium condition that the expected rate of return per dollar of loan equals the cost of funds. Hence, type *b* borrowers face higher loan rates for larger loans. Moreover, for a cost of funds r*, L3 is the largest possible loan type *b* applicants can qualify for. Whether or not L3 is binding depends on the demand schedule for type *b* borrowers.[134] Initially, however, assume that type *b* borrowers prefer L2 at rate R(*b*, L2). In that case, type *b* households would not be credit constrained.

Suppose now that legal restrictions preclude rate sorting, lenders charge a common rate R* to all approved borrowers, and R* < R(*b*, L2). Then lenders would limit type *b* borrowers to L1, and type *b* borrowers would be credit constrained since they prefer to pay a higher interest rate, R(*b*, L2), to receive a larger loan, L2. Of course, this result is sensitive to our assumption regarding type *b*'s preferred loan. But the point of the argument is that in the absence of rate sorting, there likely exist some borrowers (exemplified here by type *b* households) who would face lower interest rates and tighter debt limits than would otherwise occur. Hence, legal restrictions that limit rate sorting may increase the degree to which non-rate terms are used to impose binding debt ceilings on high risk loan applicants.[135] Such restrictions, of course, can serve to reduce homeownership rates.

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[134] See Stiglitz and Weiss (1981, Figure IV) for a careful discussion of this point.

[135] This result is likely to hold even when one allows for private mortgage insurance (PMI). To clarify, consider first the extreme case when regulators place no restrictions on the amount of PMI lenders can require. Then type *b* households could borrow up to L3 at the common loan rate R* by obtaining sufficient PMI to raise the lender's expected rate of return per dollar of loan to r*. In that case type *b* borrowers would pay PMI premiums based on the difference between R(*b*,L3) and R*. Under these conditions, PMI might vary across borrowers but lenders still would not vary mortgage rates on the basis of borrower risk attributes. Of course, under this scenario borrowers would no longer be credit rationed since they could obtain their preferred level of credit. More generally, however, if regulators place restrictions on the extent to which lenders are allowed to vary PMI requirements across mortgage applicants, then limited rate sorting would still give rise to credit rationing.

Exhibit B-1

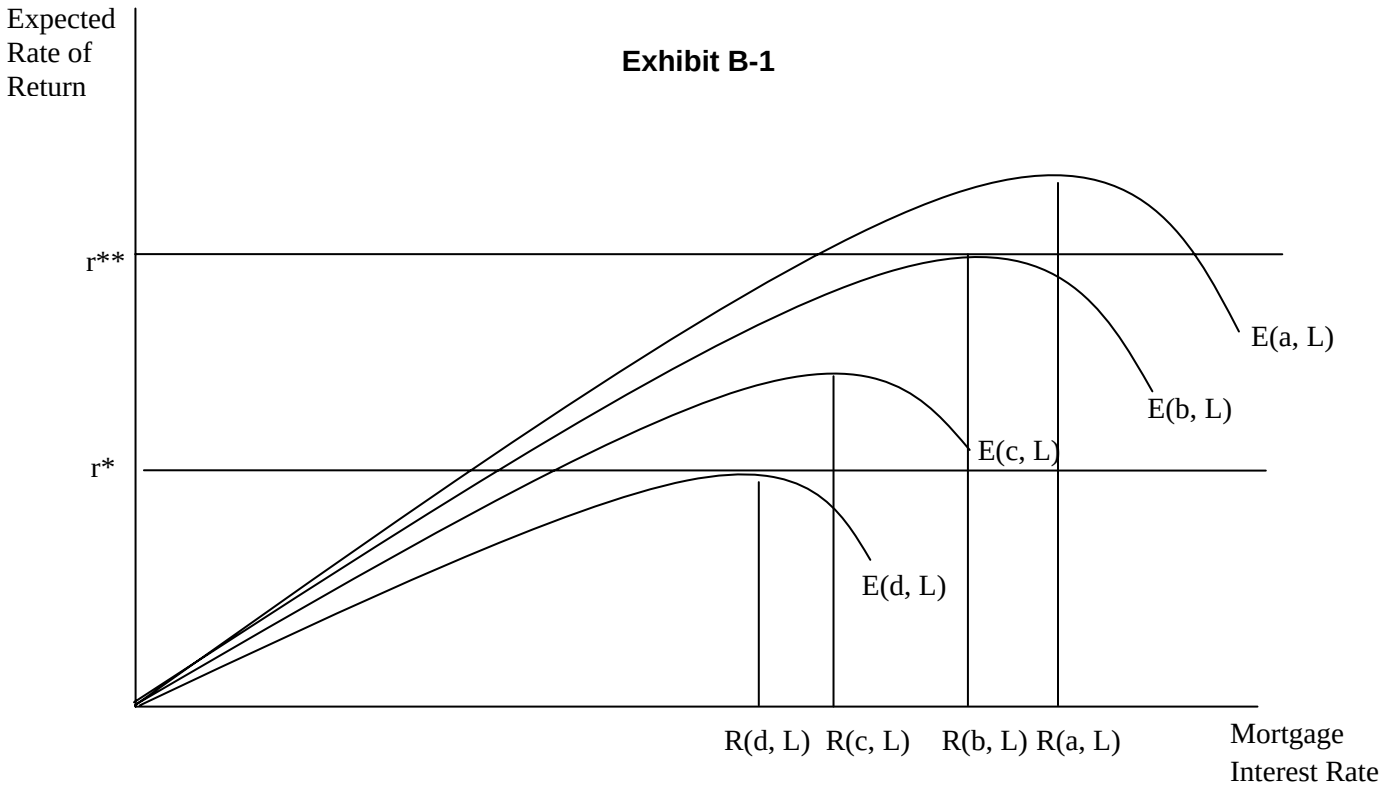
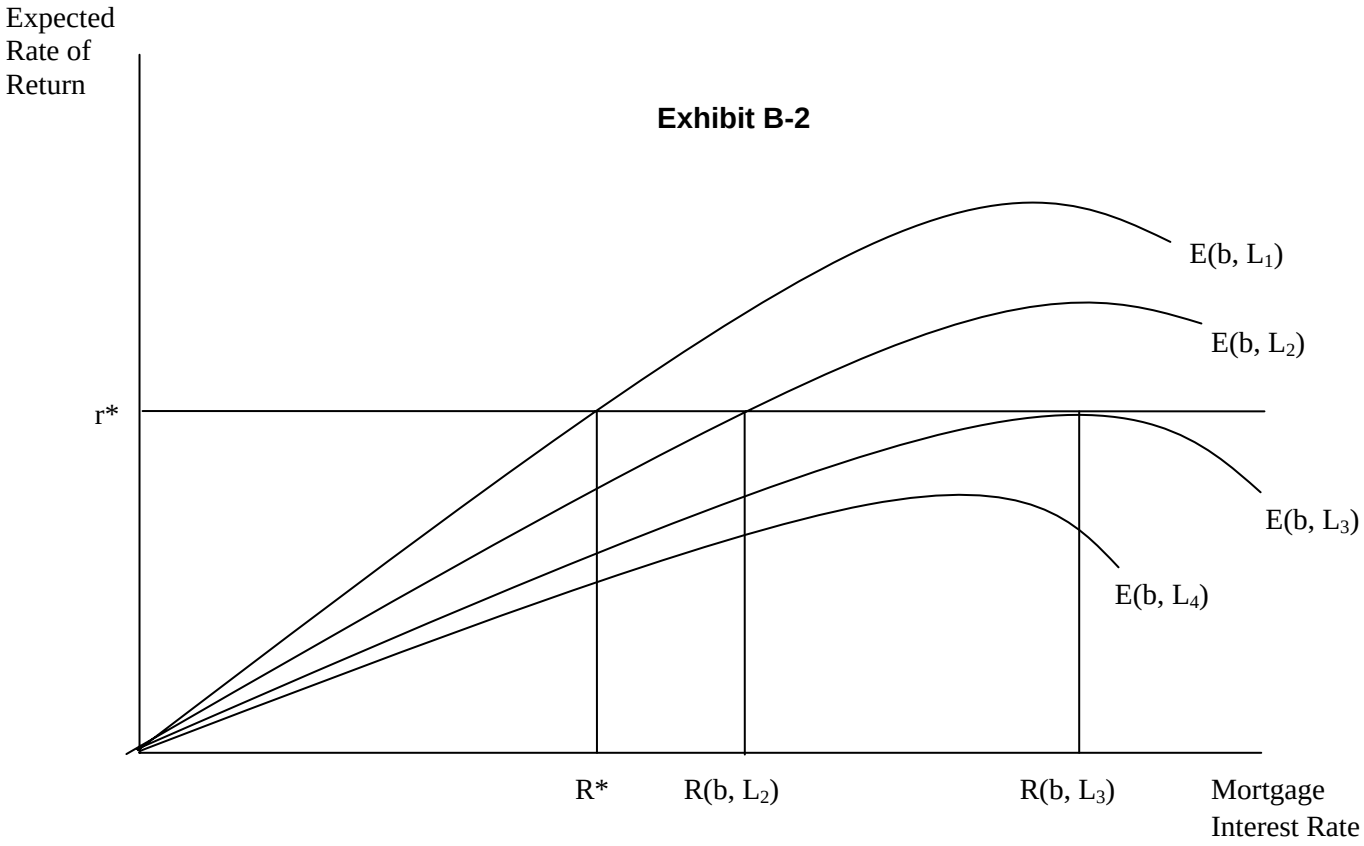


Exhibit B-2



Appendix C
Decomposition of Aggregate Homeownership Changes

As summarized by Simmons (2001), the following method can be used to decompose aggregate changes in homeownership rates for a group into a portion attributable to changes in the homeownership rates of specific subgroups and a portion due to changes in the distribution of households across subgroups. This method is used in Chapter 3 to examine the contribution of changes in demographic characteristics by race-ethnicity and income between 1993 and 2001 to changes in homeownership rates over this period. For example, this method can be used to decompose changes in the black homeownership rate into a portion due to changes in the homeownership rate of specific income subgroups and a portion due to changes in the distribution of black households across income subgroups.

The decomposition is based on the following mathematical relationships:

$$\Delta R = \sum_i p_{i01} * r_{i01} - \sum_i p_{i93} * r_{i93} \quad (1)$$

$$= \sum_i p_{i01} * r_{i01} + (\sum_i p_{i93} * r_{i01} - \sum_i p_{i93} * r_{i01}) - \sum_i p_{i93} * r_{i93} \quad (2)$$

$$= (\sum_i p_{i01} * r_{i01} - \sum_i p_{i93} * r_{i01}) + (\sum_i p_{i93} * r_{i01} - \sum_i p_{i93} * r_{i93}) \quad (3)$$

$$= \sum_i r_{i01} * \Delta p_i + \sum_i p_{i93} * \Delta r_i \quad (4)$$

Where the variables are defined as follows:

- ΔR is the aggregate homeownership rate change between 1993 and 2001 for a given group (generally either a specific racial or ethnic group or an income category);
- $\sum_i$ indicates summation across i subgroups (for example, age categories, household types, etc.);
- p_{i01} and p_{i93} are the proportions of households in subgroup i in 2001 and 1993, respectively (for example, the share of households between age 25 and 34);
- Δp_i is the change in the proportion of households in subgroup i between 1993 and 2001 and is defined as $p_{i01} - p_{i93}$;
- r_{i01} and r_{i93} are the homeownership rates for households in subgroup i in 2001 and 1993, respectively; and
- Δr_i is the change in the homeownership rates of households in subgroup i between 1993 and 2001 and is defined as $r_{i01} - r_{i93}$.

Equation 4 is used to decompose the aggregate change in homeownership rates into components related to changes in rates for specific subgroups versus changes in the distribution of households across subgroups. The first part of equation 4 ($\sum_i r_{i01} * \Delta p_i$) represents the portion of the aggregate change in the group's homeownership rate that is attributable to changes in the proportion of households in subgroup i. That is, this expression indicates how much the aggregate homeownership rate would have changed if there had not been any change in homeownership rates for each subgroup ($\Delta r_i = 0$). The second part of equation 4 ($\sum_i p_{i93} * \Delta r_i$) represents the portion of the aggregate change in homeownership rates that is attributable to changes in the homeownership rates across the i subgroups. That is, this expression indicates how much the aggregate homeownership rate would have changed if there had not been any change in the share of households across the i subgroups ($\Delta p_i = 0$).

An example may help to clarify how this decomposition works in practice. Exhibit C-1 shows how this decomposition technique can be used to analyze the change in homeownership rates for very-low income households (income less than 50 percent of area median income) by age between 1993 and 2001. The group of interest in this example are households with very-low income. The subgroups are the seven age categories. As shown in the exhibit, the aggregate change in the homeownership rate for this group over the period was 5.5 percentage points. The decomposition allows us to separate this aggregate change into a part due to changes in the distribution of households by age (1.0) and a portion due to rising homeownership rates (4.6). (The sum of these two differs from the aggregate change of 5.5 due to rounding.) The decomposition technique also highlights which age subgroup contributed most to the aggregate rise in homeownership rates for this income group. As shown, 2.3 percentage points are attributable to households over age 75, as both the share of households in this age bracket and the ownership rate of this subgroup increased over the period.

Exhibit C-1
Decomposition of Change in Homeownership Rates for Households with Very Low Income by Age

Age	Homeownership Rates			Household Shares			Decomposition		
	2001	1993	Change	2001	1993	Change			$r_{i01} * \Delta p_i +$
i	r_{i01}	r_{i93}	Δr_i	p_{i01}	p_{i93}	Δp_i	$r_{i01} * \Delta p_i$	$p_{i93} * \Delta r_i$	$p_{i93} * \Delta r_i$
<25	11.4%	9.3%	2.0%	9.1%	9.4%	-0.4%	0.0%	0.2%	0.2%
25-34	24.4%	17.7%	6.7%	14.8%	18.3%	-3.5%	-0.9%	1.2%	0.4%
35-44	36.1%	31.5%	4.5%	14.8%	14.5%	0.3%	0.1%	0.7%	0.8%
45-54	45.7%	46.3%	-0.6%	12.7%	10.1%	2.6%	1.2%	-0.1%	1.1%
55-64	63.5%	60.1%	3.4%	12.3%	11.0%	1.3%	0.8%	0.4%	1.2%
65-74	72.9%	66.7%	6.2%	15.5%	17.6%	-2.1%	-1.5%	1.1%	-0.4%
75+	72.4%	66.6%	5.8%	20.8%	19.1%	1.7%	1.2%	1.1%	2.3%
All Ages	50.0%	44.4%	5.5%	100.0%	100.0%	0.0%	0.0%	5.5%	5.5%
$\sum_i$	N/A	N/A	N/A	100.0%	100.0%	0.0%	1.0%	4.6%	5.5%