

America's Home Forecast: The Next Decade for Housing and Mortgage Finance

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Introduction

By every measure, the nation's housing sector has been the cornerstone of economic activity over the past several years. While the nation's economy sputtered, housing hummed. For current homeowners – and individuals and families looking to buy a home – the economic benefits of housing continued to rise. The Homeownership Alliance has focused on preserving, protecting and promoting expanded homeownership opportunities for all Americans. From the perspective of our members, the housing sector and growth of homeownership have been beacons for the nation and people working toward the American dream.

What does the future hold for housing, homeownership and mortgage finance? Not just one year from today, but over the next 10 years? This is the question we asked five of the nation's leading economists on housing and mortgage finance:

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America's Home Forecast: The Next Decade for Housing and Mortgage Finance issued by the Homeownership Alliance is a comprehensive look at the nation's housing sector and the American dream.

The Homeownership Alliance is a Washington, D.C. based coalition of more than 15 organizations committed to ensuring support for the American housing system. Members of the Homeownership Alliance include the Consumer Federation of America, The Council of Insurance Agents & Brokers, The Enterprise Foundation, Fannie Mae, Freddie Mac, Habitat for Humanity International, Independent Community Bankers of America, Independent Insurance Agents & Brokers of America, Local Initiatives Support Corporation, National Association of Federal Credit Unions, National Association of Hispanic Real Estate Professionals, National Association of Home Builders, National Association of Real Estate Brokers, National Association of Realtors®, World Floor Covering Association, National Bankers Association, National Council of La Raza and National Urban League.

Executive Summary

The Next Decade for Housing and Home Finance (2004-2013)

The housing sector has been a pillar of strength for the U.S. economy in recent years, limiting the depth of the 2001 recession and leading the economic recovery since then. Throughout this period, the housing sector has made major contributions to growth in economic output (gross domestic product or GDP) as well as to job creation.

Housing has bolstered the economy through two major channels. First, robust home sales and housing production, together with the financing of these activities, contributed substantially to economic growth and job creation in recent years. Second, strong rates of house price appreciation generated massive increases in the wealth of America's homeowners, strengthening not only household balance sheets but also the psyche of current and prospective homeowners in an era of financial market turmoil. Furthermore, historically low mortgage interest rates made it possible for millions of homeowners to borrow against their accumulated housing equity in order to support spending on home improvements and a broad range of consumer goods and services.

Repeated record levels of home sales have resulted in progressively higher homeownership rates; indeed, this rate hit an all-time high of 68.6 percent in the fourth quarter of 2003. There has been a marked shift of households from renters to first-time owners, greatly expanding the financial and societal benefits that flow from widespread homeownership in the U.S.

As homeownership rose and house prices advanced, the market value of homes climbed to a record \$15.2 trillion by the end of 2003—one-third higher than three years earlier, and homeowner equity stood at a record \$8.4 trillion. Indeed, the overall housing debt-to-value ratio was only 45 percent at the end of 2003. America's homeowners are not over-leveraged, and measures of financial obligations remain within historical ranges.

The dramatic strength of the housing sector in recent years clearly was fueled by historically low interest rates, strong increases in house values and very positive demographic trends. In the spring of 2004, the overall economic expansion appears to be gaining more strength and better balance, and interest rates are bound to move up to some degree as the U.S. economy grows at an above-trend rate and as slack in labor markets is reduced in the process.

How will the housing sector perform as the economy and the financial markets move beyond the recent cycle of recession and uneven recovery to *bona fide* expansion in the years ahead? That's the broad question addressed by the nation's top housing economists in this report.

This study takes a long-term focus, producing ranges of forecasts for the next 10 years (2004-2013) abstracting from potential cyclical fluctuations during this period. The study addresses the following topics: the outlook for housing demand and supply, including the impacts of net immigration on demographic trends; anticipated trends in the U.S. homeownership rate, considering prospective changes in the positions of major racial/ethnic groups in the population as well as prospective changes in homeownership rates for those groups; the outlook for home prices, focusing heavily on forecasts of per capita income growth as well as constraints on the

supply of new housing; and the future of mortgage market demand and supply, with a discussion of factors that influence overall leverage.

The following remarks summarize the key findings of the study, and the Executive Summary concludes with brief consideration of some challenges and opportunities that lie ahead in the realm of public policy and potential public-private partnerships to address some of America's housing needs.

Summary of Key Findings

Housing Demand and Supply – Robust demand will require production of about two million new housing units per year, slanted heavily toward homeownership.

- Demographic factors such as the size and age structure of the population will generate average household formations of 1.32 to 1.63 million per year during the next decade. This range is based on alternative projections of net immigration.
- Household growth along with replacement requirements, second home demand and changes in vacancies will require average production of 1.85 to 2.17 million new housing units per year. Even the lower end of this range is above the production levels of recent decades.
- Conventionally built single-family homes will account for about 72 percent of total new housing units, an even larger share than during the past decade. Production of housing units in multi-family structures will account for nearly one-fifth of the total, and manufactured homes (HUD-code units) will account for the remaining one-tenth of the market.
- The dollar volume of housing production, including new housing units as well as improvements to the stock of housing and commissions on home sales, will grow about in tandem with the overall economy. Housing's direct contribution to GDP—housing production plus services produced by the housing stock—should continue to account for about one-sixth of total economic output.

Homeownership – The national homeownership rate will rise above today's record level and most likely will exceed 70 percent by 2013.

- Although the national homeownership rate has surpassed 68 percent, there are sizable differences in ownership rates across income levels, among racial and ethnic groups and among different regions of the country.
- A large number of factors affect the homeownership rate. Among the most significant drivers over the next decade will be the movement of recent immigrants into homeownership and continued growth in the number of baby boomers moving into their peak home owning years.

- A careful analysis of these trends suggests that the homeownership rate will increase over the next decade. The size of the increase will be affected by several factors including gains by racial and ethnic groups with historically low homeownership rates and the extent to which aging baby boomers choose to remain in their homes.
- A rising homeownership rate will translate into at least 10 million additional homeowners by 2013 with roughly one half of the gain accruing to minority households.

Home Prices – Home price appreciation should average around 5 percent per year from 2004-2013, but could be above 6 percent if supply constraints continue to tighten.

- Home price gains have been unusually strong in recent years, because a combination of robust housing demand and increasingly stringent supply constraints in some areas (in turn caused by community concern about sprawl as well as shortages of developable land) has boosted price appreciation above the rate of income growth.
- Home price growth that is in line with income growth is sustainable over the long run, even if home price appreciation outpaces overall inflation. A stable relationship between income and house prices over time argues against any nationwide “housing bubble.” With the national unemployment rate below 6 percent (and falling), extremely low mortgage rates and economic growth accelerating, the likelihood of a decline in home prices at the national level is quite remote. Even at a local level, demand-supply conditions today are such that there are few, if any, markets that exhibit bubble characteristics.
- Given the forecast of robust demand boosted by favorable demographics, continued tight supply conditions and no inventory overhangs, strong annual home price appreciation of around 5 percent is likely – although it could reasonably be as low as 4 percent or as high as 6 percent (especially if supply constraints continue). Additional increases in land use restrictions and regulation reducing developable land could boost home price gains still more, however, raising them above 6 percent per year.

Mortgage Demand and Supply – Mortgage originations are projected to average nearly \$3 trillion per year and residential mortgage debt is projected to grow close to an 8.25 percent annualized rate.

- America’s families will likely need 125 million mortgage loans for home purchase or refinance, totaling \$27 trillion in mortgage originations. First-time homebuyers will remain a major component of the purchase market, buying about 24 million homes over the next decade.
- Residential mortgage debt outstanding is projected to grow by 8.25 percent per year, which would lead to more than a doubling of debt outstanding over the next 10 years, to \$17 trillion.
- Faster home price growth, related to land-use controls and other supply constraints, would translate into higher levels of originations and stronger debt growth. To illustrate,

home price growth that is one percentage point faster than the projected base case would likely increase 10-year single-family originations to \$30 trillion and increase residential mortgage debt outstanding to \$19 trillion by the end of 2013.

- The funds to support mortgage originations will primarily come from the sale and securitization of loans in the secondary market. Access to global capital markets will continue to play an important role in financing mortgages for America's families.

Future Challenges and Opportunities

The long-term forecasts presented in this report envision a positive and constructive partnership between the private sectors that produce, sell and finance housing in America and the public sectors that regulate markets and influence resource allocation through the political process.

The current system, reflecting decades of policymaking and an elaborate system of federal, state and local regulations, provides a positive environment for housing and homeownership. Without this system, many of the successes documented in this report would not have been achieved. The forecasts in this report assume the current housing policy structure remains intact.

There are, however, a number of challenges that deserve prompt attention. First, in some jurisdictions, increasingly stringent land-use controls are pushing up house prices and impairing housing affordability in these areas. Second, the potential for increasing strains on the long-term federal budget may threaten the programs that help provide affordable rental housing for low-income households that find homeownership beyond their reach and may eventually push up interest rates, hurting affordability. Third, certain proposed changes in the regulation of the government-sponsored enterprises could impair their ability to fulfill their secondary mortgage market role. Fourth, an increasingly diverse population will challenge homebuilders, real estate professionals and the housing finance sector to meet a range of differing expectations, needs and experiences among a growing population of foreign-born households. Fifth, the glaring and persistent gap between the homeownership rate for non-Hispanic white households, on the one hand, and the rates for racial and ethnic minorities, on the other, is fertile ground for public policy and for effective public-private partnerships.

Despite the magnitude of the challenges ahead, the opportunity for success lies before us. If these challenges are addressed, we can be assured that the American dream of homeownership will live on for decades to come.

Housing Demand and Supply

The number of new homes built over the next decade will exceed the totals during the 1980s and 1990s. Indeed, depending on the rate of international immigration, housing production could be greater than the record levels of the 1970s when demand was boosted by the entry of the baby boom into the housing market and by government programs to replace substandard housing. Even if the number of housing starts falls short of previous peaks, the real value of construction will undoubtedly grow to unprecedented volumes, since the new homes will be larger and better equipped than those built in the past. Construction improvements to the existing housing stock also will set new records.

- Changes in the size and age structure of the adult population will result in net increases in the number of households averaging 1.32 to 1.63 million per year during the next decade, depending on immigration.
- Household growth, along with replacements and second home demand will require production of 1.85 to 2.17 million new homes per year. Even the lower end of that range will exceed production of recent decades.
- Conventional single family structures will account for about 72 percent of new homes built over the decade, an even larger share than during the past decade. Nearly one-fifth of new homes will be in multifamily structures, with manufactured (HUD-code) homes accounting for the rest.

The demand for new housing reflects growth in the number of households, changes in the number of vacant units (including second homes) and net replacement of existing homes. All of the components of demand are affected by economic factors such as income, employment, interest rates and relative prices, but often economic factors affect the timing of demand and production, or the size and characteristics of homes, more than the number required and produced over the long term.

Demographic factors such as the size and age structure of the population, as well as the physical condition of the existing housing stock and the availability of land and other resources, become increasingly important as the forecast horizon is extended.

In the U.S. today, there is not much housing lacking basic facilities such as plumbing or electricity, although homes are older, on average, than ever before. Baby boomers are no longer adding to total demand by forming households for the first time, but they are still the dominant force dictating the character of new housing.

With about 120 million existing homes, the new houses produced each year represent less than 2 percent of the total supply. New construction is aimed at meeting the elements of demand that cannot be adequately met by the existing stock. For example, construction activity is concentrated in the locations where rapid population growth has created housing demand that exceeds the capacity of the previously built stock.

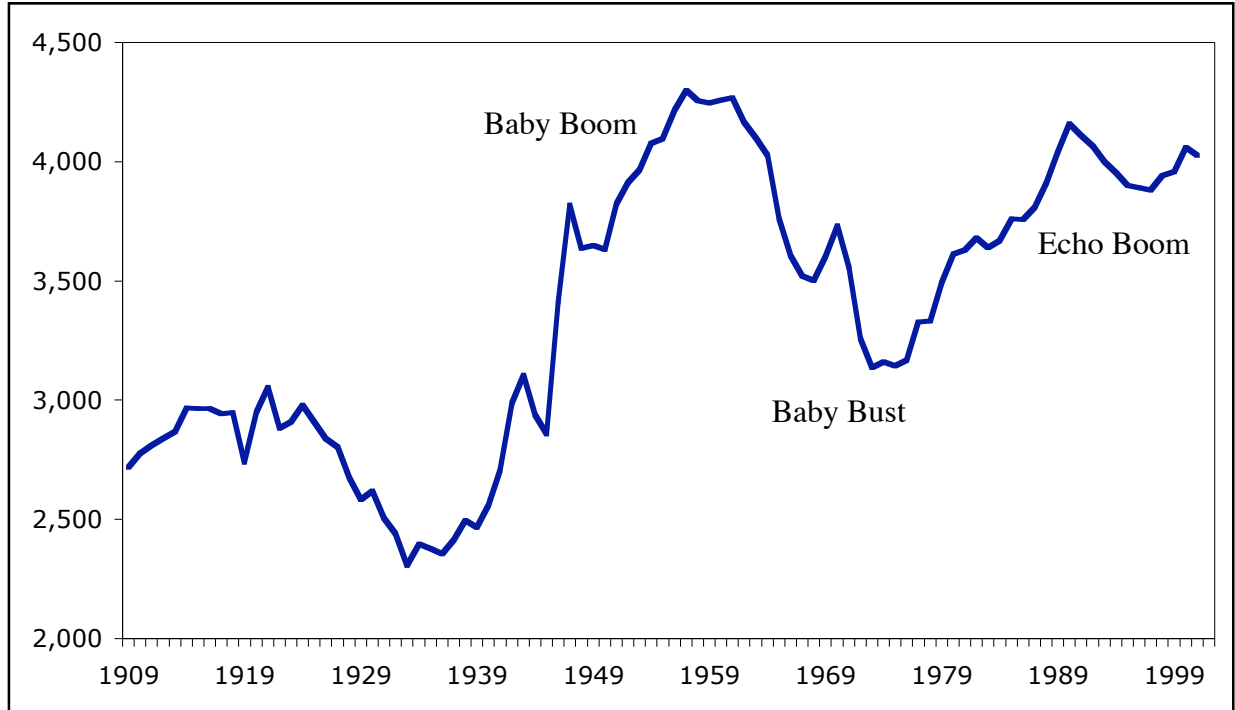
Similarly, the specific types of new homes produced will be those for which there is excess demand. At each stage of their lives baby boomers have created demands that could not be accommodated by existing structures. In the past that was starter homes and apartments. With baby boomers now aged 40 to 58, more of the production over the next decade will consist of single-family homes aimed at trade-up buyers.

Age Structure of the Population

Population growth depends on births, deaths and net immigration. The births relevant to projections of the adult population over the next decade have already occurred. The number of people who will die among various population groups is fairly predictable (barring unpredictable shocks). Net immigration is the most uncertain element in the population projections. Indeed, not only is future immigration uncertain, we are not really sure about levels of current or past immigration.

The historical pattern of births in the U.S. is shown in **Figure 1**. After reaching a peak of 3.06 million in 1921, the number of births began to fall. Even though there were slight increases after the 20th Century record low of 2.31 million in 1933, it took until 1940 before total births again exceeded 2.5 million.

Figure 1
Live Births (*thousands*)



Source: U.S. Census Bureau

After World War II the number of births started to increase rapidly, rising from 2.86 million in 1945 to 3.82 million in 1947. The peak of 4.30 million was reached in 1957, and the number of

births remained over four million through 1964. The period from 1946 to 1964 is regarded as the “baby boom.”

Beginning in 1965, the number of births began a rapid decline, dipping to a trough of 3.14 million in 1973 and remaining below 3.5 million until 1980 (the “baby bust”). The drop between 1965 and 1973 was not because there were fewer potential mothers or because many women remained childless, but rather because most women had only one or two children, rather than three or more, as was common during the baby boom.

The fertility rate (births per 1,000 women aged 15 to 44), which exceeded 120 in the mid-1950s, generally remained below 70 after 1972, but the number of potential mothers increased as baby boomers reached child-bearing age. From 1980 to 1990 the number of births increased from 3.61 million to 4.16 million and the number of births remained high through the 1990s. Members of this “echo boom” are just beginning to enter the housing market, with the babies of 1980 now turning 24.

Immigration

In 2000, there were an estimated 33.1 million foreign-born persons living in the U.S., of whom 31.1 million were counted in the Census. The estimated foreign-born population included 21.6 million legal immigrants; 1.2 million temporary migrants and 1.8 million who had not acquired regular legal status but who were applicants waiting for processing. The remaining 8.5 million were generally unauthorized.¹ The large, fluid group of illegal immigrants creates substantial uncertainty around population projections.

Net immigration is the result of gross immigration minus emigration. The current presence of a large foreign-born population in the U.S. can affect the future net flow. On one hand, perhaps these previous immigrants will encourage friends and relatives back in their former lands to join them. If they become citizens, they can sponsor relatives. Close relatives (spouses and minor children) are not subject to quotas.

On the other hand, foreign-born persons are far more likely to emigrate from the U.S. than native-born citizens, so the large foreign-born population implies high emigration. Therefore, gross immigration would have to increase further in order for net immigration to remain high.

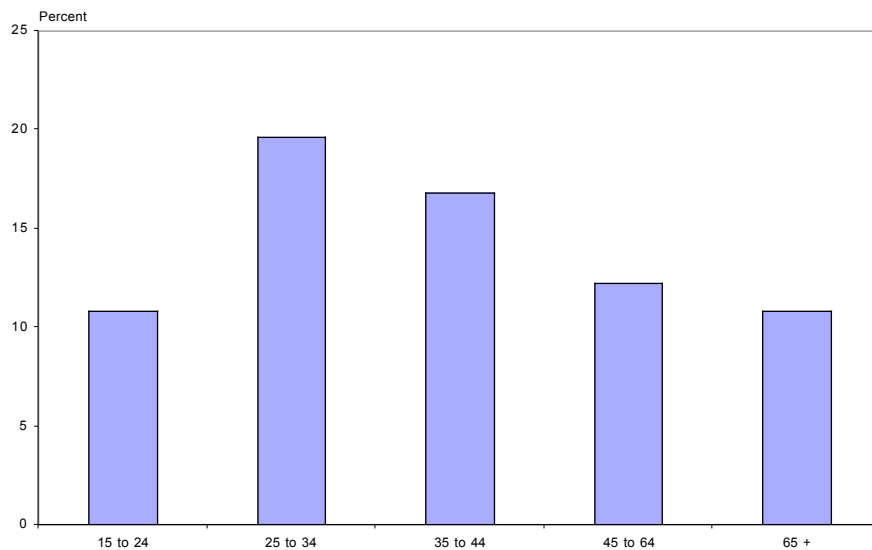
The 2000 Census counted about seven million more people than the Census Bureau had expected to find living in the U.S. on April 1, 2000. The discrepancy was later largely attributed to the shift from a population undercount of four million in 1990 to a 1.3 million overcount in the 2000 Census.² In addition, however, immigration between 1990 and 2000 had been underestimated by about 200,000 per year. Rather than the average net immigration of 870,000 per year estimated during the 1990s, the actual net inflow was more than a million per year. After April 2000, the net immigration tide swelled, to an average of about 1.3 million per year.

¹ Deardorf and Blumerman (2001).

² U.S. Census Bureau (2003).

The large immigration inflow over the past decade not only increased the total population, but it changed the age structure from the uneven mix created when the 1946-1964 baby boom was followed by the 1965-1980 baby bust. Immigrants tend to arrive when they are 15 to 34 years old. The immigrants of the 1990s joined the native population born during 1965 to 1980, partly offsetting the downward swing in the historical pattern of U.S. births. Currently, about 20 percent of the Generation X population aged 25 to 34 is foreign-born, compared with a 12 percent foreign-born share among the total population. **(Figure 2)**

Figure 2
Foreign-Born Share of the Population by Age, 2003



Source: U.S. Census Bureau

The Census Bureau has not released comprehensive projections of the population since conducting the 2000 Census. An “interim” projection for selected years was issued in March 2004, updating the “middle series” projection issued in January 2000, using July 2001 as the starting point. The January 2000 middle series projection included an assumption of net immigration from 2003 to 2013 averaging 839,000 per year. In the new interim report, net immigration was only slightly modified, to about 893,000 over that period.

Our moderate-immigration forecast uses the middle series immigration assumption from the Census Bureau’s January 2000 projection. It is thus similar to the interim projections recently issued by the Census Bureau but with year-by-year estimates. Our population forecasts start from the estimated July 2002 population by age, incorporating appropriate adjustments for expected deaths as that population ages. Note that this procedure is not the same as assuming the population growth in each age group will be proportional to the growth shown in previous projections. A larger number of 30-year-olds in 2003 means more 40-year-olds in 2013, not more 30-year-olds.

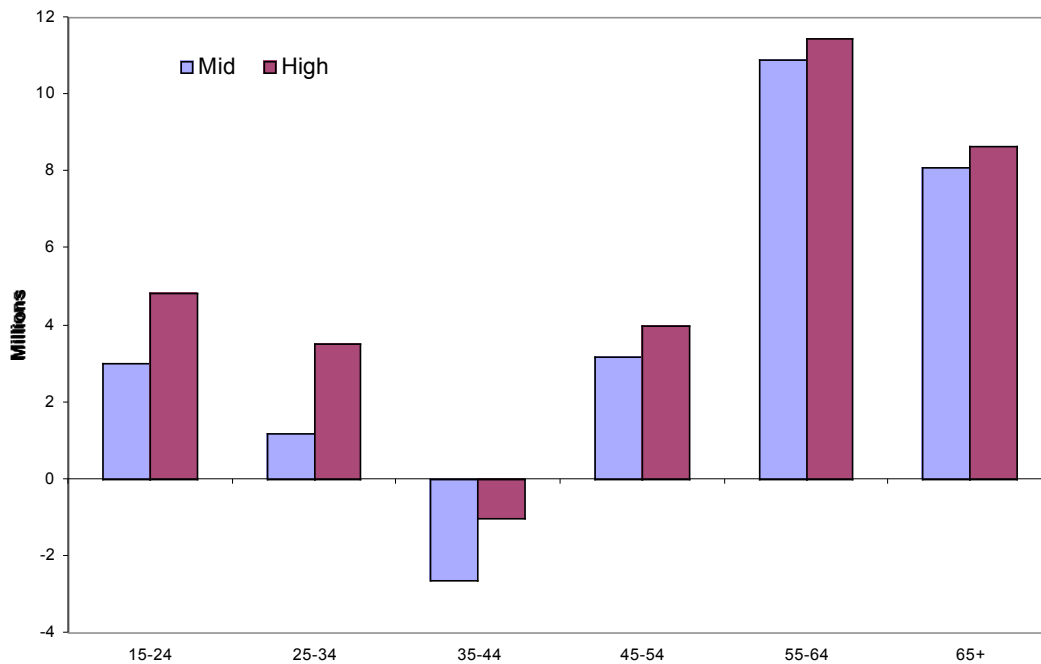
The “high series” immigration assumption shown as an alternative in the Census Bureau’s January 2000 projections had net immigration averaging 1.7 million from now to 2013. We

present a separate set of forecasts based on this high immigration scenario. Immigration in recent years has apparently been between the moderate and high immigration scenarios. A slowdown in growth for the working-age population in the years after 2006, because of baby boomers reaching retirement age, could contribute to market and political forces favoring a higher rate of net immigration.

The population changes from 2003 to 2013 for selected age groups under the two immigration scenarios are shown in **Figure 3**. Since the majority of immigrants tend to arrive as young adults, it is not surprising that most of the differences in population growth between moderate and high immigration scenarios will be in age groups under 45 years of age. **Figure 3** also shows that under both immigration scenarios the 55 to 64 age group will experience the most growth.

Figure 3

Population Change For 2003 to 2013 Under Alternative Immigration Scenarios



Source: U.S. Census Bureau; National Association of Home Builders

From People to Households

A household is defined as a person or group of people occupying a housing unit, so the number of households is equal to the number of homes occupied as primary residences.

Changes in the number of households can be separated into changes in the adult population in each age group and changes in the share of the population in each age category that are heads of households (the “headship rate”). Relatively small changes in headship rates can translate into substantial changes in the total number of households, but most changes in the number of households are due to changes in the population in each age group. The number of households and headship rates for 2002 are shown in **Figure 4**.

Figure 4
Households and Headship in 2002

AGE	HOUSEHOLDS (March) (thousands)					Population (July) (thousands)	Headship Rate
	Total	Married Couple	Other Family	Live Alone	Other Non-family		
15-19	907	91	473	137	206	20,376	4.5%
20-24	5,484	1,444	1,610	1,155	1,275	20,214	27.1%
25-29	8,412	3,620	1,802	1,914	1,077	18,972	44.3%
30-34	10,576	5,765	2,027	2,009	775	20,956	50.5%
35-39	11,599	6,804	2,319	1,883	593	21,915	52.9%
40-44	12,432	7,374	2,321	2,220	517	23,002	54.0%
45-49	11,754	6,987	1,975	2,307	485	21,302	55.2%
50-54	10,455	6,150	1,428	2,436	440	18,782	55.7%
55-59	8,611	5,142	888	2,307	274	14,991	57.4%
60-64	6,592	3,781	690	1,941	181	11,611	56.8%
65-69	6,063	3,323	573	2,019	149	9,581	63.3%
70-74	5,409	2,600	451	2,260	98	8,693	62.2%
75 +	11,004	3,668	1,023	6,187	126	17,328	63.5%
15 and Older	109,297	56,747	17,582	28,775	6,194	227,722	48.0%

Sources: Current Population Survey, 2002 Annual Demographic Supplement
Census Bureau Population Estimates released June 18, 2003

A family household is one with two or more people where at least one other person is related to the householder. Most family households are maintained by married couples (with or without children) or consist of a single parent with children, although a grandparent with grandchildren or sisters living together would also be family households. People living alone account for most nonfamily households, but nonfamily households also may consist of two or more non-relatives, such as an unmarried couple.

Among households headed by people aged 35 to 64, the share consisting of married couples is higher than for other age groups. Largely due to widowhood and to single parents becoming empty-nesters, the share consisting of people living alone is progressively higher at older ages.

Over the past decade, headship rates for different age groups have changed, with headship rates declining for age groups 35 and over and rising for younger groups.³ Those two trends

³ Part of the shift toward relatively higher headship among younger adults was illusory, caused by the arbitrary designation of the householder. In a married-couple household, either the husband or the wife may be designated as the household head. In 1992, the wife was recorded as the householder in only 8 percent of married couple households, but in 2002, the wife was recorded as the householder in 33 percent of such households. Since wives are, on average, younger than their husbands, this raised headship rates for younger age groups and lowered the rates for older ages. If the headship rates are recalculated using the consistent—albeit politically incorrect—convention of designating the husband as the household head, the decline in headship rates for older ages is reduced, as is the increase in headship for the youngest groups, but even with that adjustment the younger groups show higher headship rates than a decade ago, while the older groups display lower rates (Carliner 2003).

essentially canceled out, with the increase in the total number of households roughly equal to the increase that would have occurred if the headship rates for every age group had remained unchanged.

In the early 1990s, there was a tendency for young adults (especially young men) to live with their parents. That started to change in the late 1990s. The reduced share of young adults living with parents accounted for much of the increase in headship rates during the last few years.

The recent increase in headship rates for the population aged 25 to 34 is especially notable, since it occurred despite the large number of immigrants in that cohort. Immigrants tend to live in larger households – often in extended families – and rarely live alone.

The household-forming behavior established by a population cohort in young adulthood often carries forward as that cohort ages. The percentage of the population born during 1968 to 1977 that were household heads at ages 25 to 34 in 2002 was higher than the 1992 share of those born during 1958 to 1967. As a result, chances are that the headship rate for the 35 to 44 year old bracket will be higher in 2013 than it was in 2003.

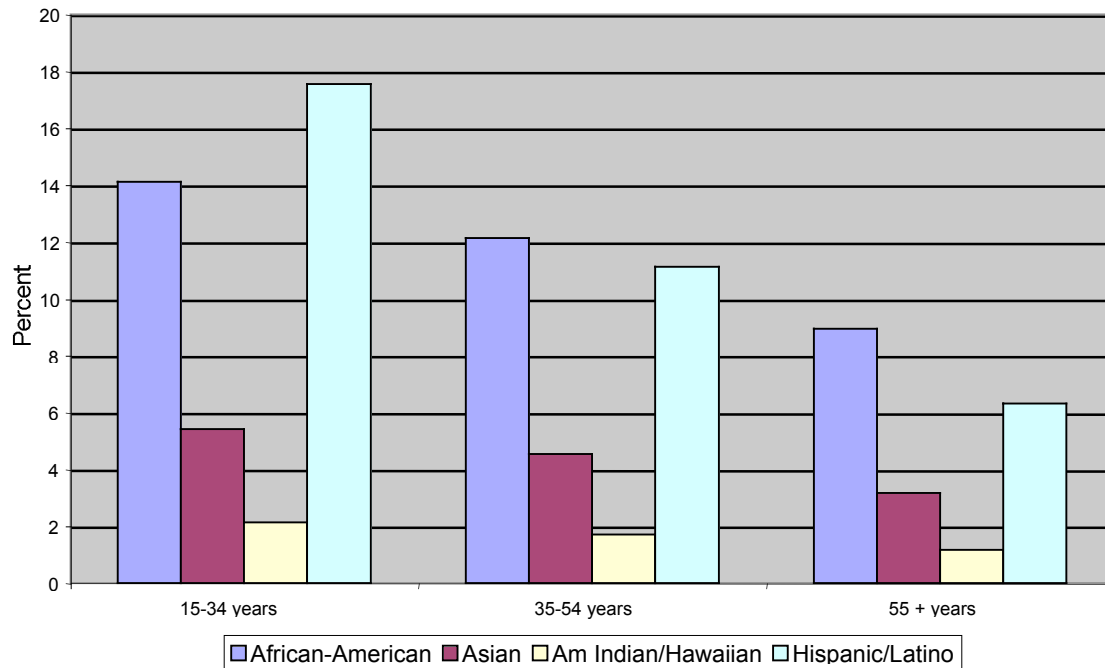
On the other hand, because members of the tail end of the baby boom are entering middle age with lower headship rates than the early boomers, they will probably pull down headship rates somewhat in the 45 to 54 age bracket. The net effect, as in the past decade, may be an increase in households roughly equal to the increase that would occur with constant headship, but with more households aged 25 to 44 than population growth alone would suggest.

Under the moderate immigration forecast, the projected increase in the total number of households from 2003 to 2013 averages 1.33 million (or 1.1 percent) per year. Using the high immigration alternative, net household formations average 1.60 million per year (or 1.4 percent). The impact on total housing demand would be greater than the difference in households, because there would need to be more vacant units to arrive at comparable vacancy rates under the high immigration scenario.

The highest population and household growth rates will be found in the age groups from 50 to 69 years old, and there will be more homebuyers from those groups than in the past. But these will still not be the typical customers for new or existing homes, since older households move less frequently than younger households. In 2001, for example, only 8 percent of households headed by people aged 45 to 64 moved to a different home, compared with 27 percent of those aged 25 to 34. And although only 37 percent of *homeowners* were 44 or younger, 64 percent of *homebuyers* were under age 45.

The younger adult population is far more racially and ethnically diverse than the middle-aged and older population, pointing to continuing changes in the mix of households active in the housing market. As **Figure 5** shows, African-Americans, Asians and especially Hispanics/Latinos make up much larger shares of the population under age 35 than they do of the older population. Moreover, continuing immigration will mean that the population cohorts that are currently under age 35 will include even more minorities in the future.

Figure 5
 Minority Shares of Population by Age



Source: Census Bureau population estimates for July 1, 2002

Vacant Units

The majority of the 15.3 million vacant units in 2003 were not being offered for sale or rent. **(Figure 6)** The largest category of vacant units consisted of second homes. These housing units, used on a seasonal or occasional basis, accounted for 43 percent of the total number of vacant units.

Figure 6
Estimate of the Housing Inventory 2003

	Units (thousands)	Percent of Total
All Housing *	120,834	100.0
Occupied	105,560	87.4
Owner	72,053	59.6
Renter	33,507	27.7
Vacant	15,275	12.6
For Rent	3,676	3.0
For Sale	1,308	1.1
Rented/Sold Awaiting Occupant	976	0.8
Second Home	6,627	5.5
<i>For Occasional Use</i>	1,989	1.6
<i>Seasonal Vacancy</i>	3,643	3.0
<i>Temp. Occupancy/Not Usual Res.</i>	994	0.8
Off Market/Other	2,688	2.2
Vacancy		
Rental	98	
Owner	1,8	
* Homeownership Rate = 68.3%		

Source: Census Bureau, Housing Vacancy Survey

NOTE: Housing Vacancy Survey estimates are controlled to independent housing unit counts, and estimate of occupied units therefore differs from unconstrained household counts from CPS.

Vacant units for rent or sale may represent a supply overhang to the extent that they exceed the share of the housing stock that is necessary to accommodate movement and ensure smooth functioning of the market. From 1998 to 2003, the number of vacant units for rent increased by about 600,000, according to the Housing Vacancy Survey (HVS), raising the rental vacancy rate from 7.9 percent to 9.8 percent. Much of the increase in rental vacancies has been concentrated among recently built, upscale multifamily units.

Over the past 10 years, the average rental vacancy rate was 7.9 percent, and over the past 30 years the average was 6.8 percent. If a rental vacancy rate of 7.9 percent represents equilibrium, the 9.8 percent vacancy rate in 2003 implies an excess of over 700,000 units, mainly in multifamily structures. There is still a fair degree of momentum in multifamily rental construction, as previously planned projects go forward, but production levels will likely decline because of slower absorption, rising vacancies and increased rent concessions.

The number of vacant units for sale increased by 100,000 from 1998 to 2003, but relative to the total number of owner units (occupied + for sale+ sold and awaiting occupancy), the share that was vacant for sale was virtually unchanged at between 1.7 percent and 1.8 percent.

According to the HVS, the number of second homes increased by an average of over 100,000 per year during the past decade, and as a share of the total housing stock grew from about 5 percent to about 5.5 percent over that period. Other Census Bureau reports, including the American Housing Survey, indicate that growth in the number of second homes has been more modest.

Several factors were, or should have been, very favorable for second home demand over the past decade. Most importantly, the baby boom cohort, having become owners of primary homes, and having reached the ages when second home purchases typically occur, represented expanded market potential.

Second, the number of people with the wealth to indulge in second homeownership grew enormously. Inflation-adjusted wealth among all families grew from a median of \$61,300 to \$86,100 from 1992 to 2001, according to the Federal Reserve's Survey of Consumer Finances. For those in the top 10 percent, however, the increase was from a median of \$822,600 to \$2,105,800; and for those in the 75th to 89th percentile of the wealth distribution, the median increased from \$252,100 to \$430,200, measured in 2001 dollars.

Third, although many second homes are purchased without mortgages, lower mortgage rates meant lower costs of ownership.

Data on second homeownership are less consistent and reliable than data on primary homes, but the available information suggests that baby boomers have not embraced second homeownership to the same extent as households with similar demographic and wealth characteristics in the past. Also, many second houses are not for vacation or recreation, and the number of such non-vacation second homes appears to have declined.

In any case, second home demand has fallen short of expectations. In the decade ahead, demographics will continue to be favorable, but demand for second homes will depend on incomes, the performance of the stock market and other investments, and the cost of housing and housing finance. It will also depend on social trends and fashions. It could benefit from a continuation of the current unpopularity of foreign travel and from the possibility that aging baby boomers will choose to become semi-retired, rather than either retiring or continuing full-time work.

In the forecast, we project an increase in the number of second homes of 125,000 per year. There will also be increases in the other types of vacancies (except for-rent) sufficient to hold their shares of the total housing stock constant. The number of for-rent vacant units will gradually decline, but it may take a full decade, and increased demand from members of the echo boom cohort born in the 1980s, before the rental vacancy rate returns to long-term equilibrium.

Net Removals

A crucial, but largely unmeasured, component of overall housing demand is created by net removals of existing homes. Net removals reflect not only houses lost to intentional demolition and to disasters such as storms or fires, but also the net conversion of structures between residential and nonresidential use, houses that are carved up to create apartments, and units merged to create larger homes.

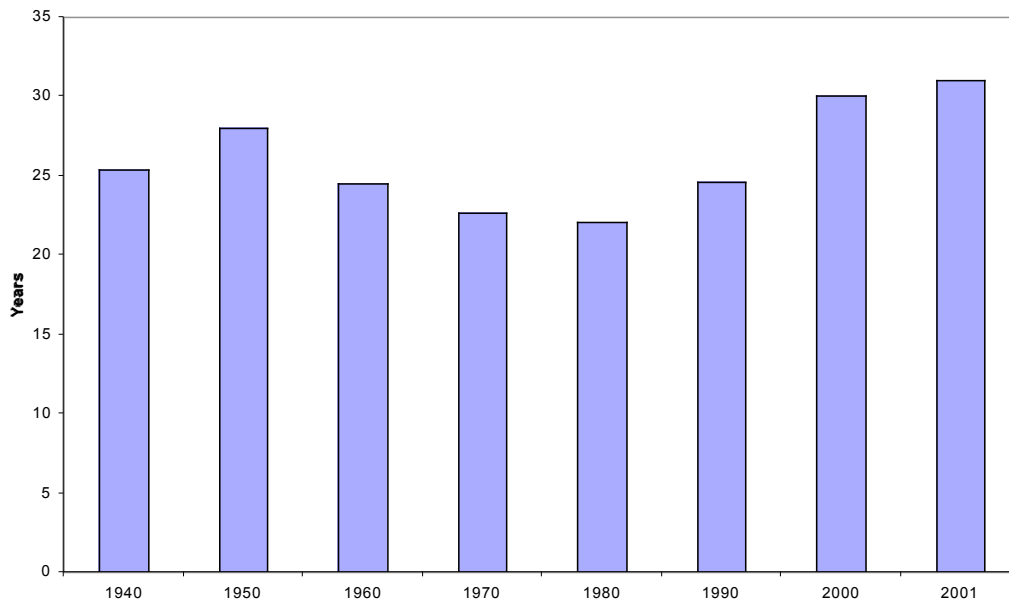
In the absence of direct measurements of net removals, the Census Bureau makes estimates of removals that are used, along with construction data and housing counts from the decennial census, to arrive at estimates of the total housing stock. The net removal estimates are obscured in the various Census Bureau reports, but those estimates currently amount to about 360,000 per year.

These implicit estimates of annual net removals are quite modest compared with a total housing stock of over 120 million units. Removals of 360,000 mean only a 0.3 percent net removal rate. If all housing units had a 0.3 percent probability of removal each year, the majority of current housing units could be expected to last at least another 230 years – a figure that is simply not plausible.

With new construction as a share of the total stock lower during the past decade than in previous periods, and removals lower as well, the median age of the housing stock has increased. It now may be the oldest in U.S. history, at about 32 years (**Figure 7**). The number of homes more than 50 years old reported in the 2000 Census was 25.8 million, compared with 18.8 million in 1990.

The Census Bureau's estimates of recent net removals are quite modest compared with a total housing stock of over 120 million units. Removals of 360,000 mean only a 0.3 percent net removal rate. If all housing units had a 0.3 percent probability of removal each year, the majority of current housing units could be expected to last at least another 230 years. The probability of removal is much higher, however, among older housing units than among relative-new units, and as the median age of the stock rises, the overall removal rate can be expected to increase.

Figure 7
Median Age of Housing Stock



Source: U.S. Census Bureau

The incentives for tearing down old homes to build new homes have increased as greenfield sites have become scarce. Whether a single-family home is torn down to accommodate a single new home, or (more commonly) farmhouses, old apartments or other residential structures are demolished to provide sites for new subdivisions or new non-residential structures, the removal of existing homes adds to the need for new homes. The same goes for homes that are removed without a new structure being built.

The net number of removals will depend on factors such as the regional location of future economic and population growth, public policies on use of undeveloped land and redevelopment, and consumer preferences for locations and housing types within metropolitan areas. All of these will influence whether properties with existing homes are worth more with the structures currently there, or with the current structures removed to provide sites for new construction.

In the forecast, we assume that net removals will average 400,000 over the decade. Even with this accelerated removal rate, the median age of the housing stock will increase to about 37 years by 2013.

Single-Family Demand

Conventionally built single-family homes accounted for 69 percent of the housing stock in 2001, according to the *American Housing Survey*, and 67 percent of the 18 million new homes produced over the past decade were conventional single-family structures.

In the 1970s and 1980s, single-family homes accounted for only about 55 percent of the new homes produced. The higher share since 1993 was achieved largely at the expense of multifamily construction, reflecting the aging of the baby boom, lower mortgage rates, and the elimination or reduction of subsidies and tax incentives for multifamily rental housing.

In the decade ahead, the single-family share should be even higher than during the past 10 years. While currently there is some excess supply of multifamily and manufactured homes, the inventory of unsold new and existing single-family homes is low relative to current and prospective sales. That starting point, however, becomes a less significant factor when we look five or 10 years ahead. Demographic influences on the types of homes demanded in the future, as well as demands for replacements or second homes, will determine the mix of housing types produced.

If the share of households in each age bracket living in single-family homes were to remain equal to 2001 values, occupied single-family homes would account for 73 to 74 percent of the net increase in households over the next 10 years, under either immigration scenario. This reflects the disproportionate increase in households headed by people 45 to 64 years old, nearly 80 percent of who live in single-family homes.

Multifamily

In 2003, there were 350,000 multifamily housing units started, including 317,000 in structures of five or more apartments. About 80,000 starts were condominium (or other for-sale) units and nearly 100,000 were rental apartments for low-income households financed with government subsidies, low-income housing tax credits and/or tax-exempt bonds, and featuring reduced rents. While the production of unsubsidized rental apartments is headed for a slowdown, the other components of multifamily production are not only sustainable but also potentially expandable.

Multifamily condo production exceeded 200,000 per year in the early 1980s and accounted for about 40 percent of multifamily starts at that time. The multifamily condo share has been much smaller since then, and in recent years construction appears to have fallen below demand. Absorption rates for new multifamily condos have been quite high, and resale prices have lately increased faster for multifamily condos than for single-family homes, according to data compiled by the National Association of Realtors¹. While middle-aged and older households are much less likely to live in rental apartments than younger households, they are more likely than young households to live in multifamily housing as owner-occupants.

The number of new subsidized rental apartments depends more on government policy than on demand. The number of applications from for-profit and non-profit project sponsors consistently exceeds the available allocations of tax credits and tax-exempt bond financing. There are waiting lists of prospective residents as well. Recent legislation has raised the amounts available to each state to support affordable housing through federal tax preferences, and our forecast assumes that subsidized, low-rent multifamily construction will expand slightly.

Of course, the three segments of multifamily housing supply are connected. About one-third of occupied multifamily condos are rented, competing with non-condo rentals. Some of the luxury

non-condo properties built in recent years are likely to undergo condo conversions. Indeed, many were specifically designed to provide for that possibility.

The moderate-rent apartments produced with low income tax credits or tax-exempt bonds generally do not directly compete with new market-rate rental properties, but indirectly they affect, and possibly displace, absorption of unsubsidized apartments.

Although this forecast is not broken out geographically, one of the factors favoring multifamily construction is growth in employment and population inside urban areas, rather than in rural locations. The greater growth in urban areas is in large part the ironic result of higher productivity growth in economic sectors that are disproportionately found in rural areas – agriculture, mining and manufacturing. Higher productivity means less labor is needed to produce the same outputs leading to slower rural population growth, and in some areas, a decline in the population.

Within metropolitan areas, the greatest potential for multifamily construction will be in the suburbs, where an increasing share of office and support jobs are located, but where the existing housing stock primarily consists of single-family homes.

The stock of structures with two to four apartments has a median age of nearly 50 years, and a larger share of those structures than of other types of housing are likely to be removed over the coming decade. It does not necessarily follow, however, that this will mean more new construction of structures with two to four units.

Manufactured Homes

Manufactured homes built under the national HUD code are a significant component of the total number of new housing units. Placements of manufactured homes soared to 374,000 in 1998, but then plummeted. In 2003, only about 130,000 were placed. Over the past decade, about 17 percent of all new housing units produced were manufactured homes. That was a little higher than in the 1980s, and about equal to the share in the 1970s.

A key factor in the manufactured home boom and bust of the 1990s involved very easy credit for customers. Many of those customers were unable to keep up their payments. Repossessions became a major drag on the market, limiting demand for new units and driving out many of the producers and dealers that had participated in the irrational exuberance that pervaded the manufactured home industry in the mid-1990s. A more sober industry is now hoping that the process of repossession and re-absorption is nearing completion.

Changes in the age distribution of the population do not hold profound implications for manufactured homes. While households over age 40 are far more likely to live in single-family homes and less likely to live in multifamily units than younger households, the 6.2 percent share of households headed by people aged 45 to 54 who lived in manufactured homes in 2001 was not much below the 6.8 percent share of all households living in manufactured homes. A decade ago, the share of young households living in manufactured homes was higher than today, but the share of middle-aged and older households in manufactured homes was lower.

Among middle-aged households, married couples households are least likely to live in manufactured homes, while manufactured housing is somewhat more popular with other types of households, especially those that are male-headed.

Production of manufactured homes has shifted toward multi-wide units, placing them in more direct competition with conventional single-family homes. Until the mid-1990s, a clear majority of manufactured homes were single-wide, with only a third of the living area of the typical conventional home. Single-wides now represent only about one-fourth of total production.

Nearly half of manufactured homes are located in non-metropolitan areas, compared with 20 percent of conventional homes. Although manufactured housing has made inroads in metropolitan areas, a continued shift in population toward metropolitan areas will limit the potential growth of manufactured housing.

On the other hand, growth in the number of second homes will be more favorable for manufactured housing than for conventional housing, because a larger share of manufactured homes than of conventional houses are used as second homes. According to the 2001 American Housing Survey, more than 17 percent of all second homes were manufactured, compared with the 7 percent manufactured home share of the overall housing stock.

The Forecast

Figure 8 summarizes the housing forecast under the moderate immigration and high immigration scenarios relative to the experience in previous decades. Under the moderate immigration scenario, growth in the number of households is comparable to the experience of the 1980s and 1990s. Growth in vacancies is lower, but that's more than offset by a higher number of net removals.

Figure 8Housing Supply and Demand - Annual Averages (*thousands*)

	1974-1983	1984-1993	1994-2003	Forecast 2004-2013	
				Moderate Immigration	High Immigration
Demand:					
Change in Households	1,373	1,316	1,226	1,316	1,628
Change in Vacancies	136	275	306	135	148
Net Removals	290	104	235	398	398
Total Demand	1,799	1,695	1,767	1,848	2,174
Supply:					
Single Family	1,017	1,023	1,193	1,334	1,549
Multifamily	507	441	285	320	406
2-4 units	99	66	34	46	58
5 or more	408	375	251	274	348
Manufactured	275	232	289	195	219
Total Supply	1,799	1,695	1,767	1,848	2,174

Sources: Census Bureau Housing Vacancy, Current Population Survey, Construction Statistics; NAHB projections of population, households; Historical supply represents completions, forecast supply is starts.

The forecast of the average number of new homes over the 2004-2013 period with moderate immigration is 1.85 million, including 1.65 million conventional single-family and multifamily housing starts.

The high immigration scenario results in substantially higher housing starts, and is also associated with higher GDP and employment growth.

Because demand for new homes will increasingly come from middle-aged, trade-up households, not only will the single-family share of total new production be higher than during the previous decade, but the typical new home will also incorporate more amenities. The average floor area will continue to increase, but increases in real value per unit will be driven to a greater extent by use of more expensive materials, more equipment and features such as larger garages and higher ceilings. Older trade-up buyers place a higher priority on features and quality than on floor space.

The existing housing stock will continue to grow and age, leading to additional spending on improvements (additions and alterations plus replacements of major systems). Furthermore, with the larger stock, sales of existing homes will continue to grow relative to new home sales.

Home Sales Forecast

During the past decade, existing home sales (including condos) rose from less than 4.5 million to nearly 7 million units while new home sales increased from 670,000 to more than one million units.⁴ This growth has occurred for a number of reasons, but the secular decline in mortgage

⁴ New-home sales exclude homes built on owners' lots.

rates, reduced mortgage transaction costs and a generally favorable economic environment have all contributed to this enviable performance.

Looking ahead to the next 10 years, home sales are expected to increase along with rising homeownership. Elevated housing turnover and long-term growth in the number of households will also contribute to strong sales of both new and existing homes.⁵ Although sales fluctuate from year to year for a variety of reasons such as employment conditions and the level of mortgage interest rates, current trends point to existing home sales of 7.1 to 7.5 million units per year. New home sales are projected to fall in a range from 0.97 to 1.13 million units per year.

Figure 9
Home Sales Forecast
(annual average, millions)

	1994-2003	Forecast	
		Low	High
New Home Sales	0.85	0.97	1.13
Existing Home Sales (including condos)	5.52	7.10	7.50
Manufactured Homes	0.28	0.20	0.22
Total Home Sales	6.67	8.27	8.85

Source: U.S. Census Bureau, National Association of Realtors®
and National Association of Home Builders

In terms of contributions to economic output and requirements for labor, materials and financial resources, the component of Gross Domestic Product (GDP) labeled “Residential Fixed Investment” (RFI) is more relevant than the number of new housing units, *per se*. RFI includes the value of conventionally built single-family and multifamily structures (excluding raw land), manufactured homes, improvements to existing homes and sales commissions on home sales.

Figure 10 shows the breakdown of RFI into its major components for 2002 and 2003.

⁵ The turnover rate trended upward with the secular fall in mortgage rates since the early 1980s and with the decline in transaction costs related to home purchase. Over the next 10 years, the turnover rate will likely fall back from the record high mark of 2003, though remain at elevated levels.

Figure 10
Housing-Related Gross Domestic Product (Billions of dollars)

	2002	2003
Gross Domestic Product	10,480.8	10,983.9
Personal consumption expenditures	7,385.3	7,753.2
Services	4,388.0	4,602.7
Housing	1,144.6	1,198.6
Owner-occupied non-farm dwellings—space rent	821.7	862.5
Tenant-occupied non-farm dwellings—rent	259.0	272.0
Rental value of farm dwellings	11.3	11.2
Other (e.g., hotels)	52.6	52.8
Gross private domestic investment	1,589.2	1,667.5
Fixed investment	1,583.9	1,670.8
Residential Fixed Investment	503.7	562.8
Residential Structures	496.1	554.3
Permanent site	298.5	336.5
<i>Single-family</i>	265.9	302.2
<i>Multifamily</i>	32.6	34.3
Other structures	197.7	217.8
<i>Manufactured homes</i>	8.5	6.9
<i>Dormitories</i>	1.5	1.6
<i>Improvements</i>	121.8	132.3
<i>Brokers' commissions</i>	68.7	79.9
<i>Net purchase of used structures</i>	-2.9	-2.8
Residential equipment (for rental housing)	7.6	8.5
Share of GDP:		
Residential Fixed Investment	4.8%	5.1%
Housing Services	10.9%	10.9%

Source: Bureau of Economic Analysis, Dept. of Commerce

In 2003, RFI in nominal terms represented 5.1 percent of GDP. During the 1990s, RFI's share of GDP averaged 4.1 percent, but residential construction outpaced the overall economy during the latest three years. The RFI share may slip in 2004 and 2005, as other sectors of the economy gain strength. After that point, RFI should represent a relatively stable share of the economy.

Construction of new homes and improvements to existing homes are long-lived investments that provide shelter to families for many decades. The services provided by residential structures, measured by rents on rental housing and implicit rent on owner-occupied homes, accounts for about 11 percent of GDP. Thus, housing's direct contribution to GDP—Residential Fixed Investment plus housing services produced—has been running around 16 percent of the total, and that contribution is likely to be maintained in the years ahead.

Homeownership During the Next Decade

Owning a home embodies the promise of individual autonomy as well as material and emotional well-being, ideas integral to the aspirations of most American households. Homeownership allows households to accumulate wealth and social status, and is the basis for a number of positive social, economic, family and civic outcomes. The more than two-thirds of all U.S. households who own their home currently are enjoying these benefits. While challenges exist, an increasing number and share of households will take advantage of the benefits of owning a home during the next decade.

- Although the national homeownership rate has surpassed 68 percent, there are sizable differences in ownership rates across income levels, among racial and ethnic groups and between different regions of the country.
- A large number of factors affect the homeownership rate. Among the most significant drivers over the next decade will be the movement of recent immigrants into homeownership and continued growth in the number of baby boomers moving into their peak home owning years.
- A careful analysis of these trends suggests that the homeownership rate will increase over the next decade, exceeding 70 percent by 2013. The size of the increase will be affected by several factors including gains by racial and ethnic groups with historically low ownership rates and the extent to which aging baby boomers choose to remain in their homes.
- A rising homeownership rate will translate into at least 10 million additional homeowners by 2013 with roughly one half of the gain accruing to minority households.

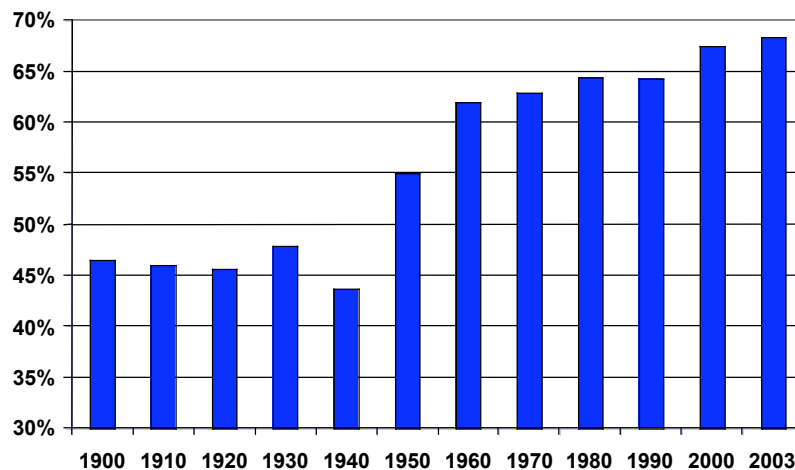
Historical Trends

Across different demographic groups and even within different regions of the country, the homeownership rate varies widely. Many of these gaps are long standing. Future levels of homeownership are tied to the historical trends from which they emerge. This section describes historical trends in homeownership as a basis for looking ahead over the next decade.

Trends in Homeownership

Less than half of Americans owned their homes at the beginning of the 20th century (see **Figure 11**). Homeownership remained fairly stable until the onset of the Great Depression during which many homeowners lost their homes. In the subsequent two decades, the homeownership rate rose dramatically with the rate easily topping 60 percent by 1960. Modest gains were made during the 1960s and 1970s, but during the 1980s the rate plateaued. Homeownership once again trended upwards during the 1990s as mortgage rates steadily declined and the economy expanded at rates not experienced in many years. By 2003, 68.3 percent of Americans owned their homes – a record high.

Figure 11
Homeownership Rate for Selected Years (1900 – 2003)



Source: U.S. Census Bureau

Ethnic and Racial Differences in Homeownership

Between 1994 and 2003, the number of U.S. homeowners rose by 8.9 million for an increase of 14.1 percent. Although non-Hispanic whites accounted for a majority of the increase owing to the size of this group, it is also true that minorities made marked progress. During this same time period, the percentage increase in the number of homeowners among African Americans (25.1 percent), Hispanics (62.8 percent) and Asian and Pacific Islanders (103 percent) dwarfed the rise in non-Hispanic white owners (7.6 percent). These gains boosted the overall homeownership rate for each ethnic group by five to nearly six percentage points between 1994 and 2003 (see **Figure 12**). But even with these gains, the homeownership rate among minorities still lags below that of whites. In 2003, less than half of African-American and Hispanic households owned their homes. In contrast, over 75 percent of non-Hispanic whites were homeowners.⁶

A large part of the gap in homeownership among minorities can be attributed to differences in economic circumstances and the age composition of minority populations. Income and wealth holdings among minorities are typically lower than that of whites. Furthermore, there is a disproportionately higher share of younger households – who are less likely to be homeowners – among minorities. Finally, a large number of minorities, particularly Asians and Hispanics, live in less affordable urban centers on both the East and the West coasts. Estimates by the Joint Center for Housing Studies at Harvard University show that if income, age and family type (but not wealth or location) of minorities were similar to that of whites, the homeownership gap would be reduced from roughly 25 percentage points to about 10 percentage points.⁷ But, the

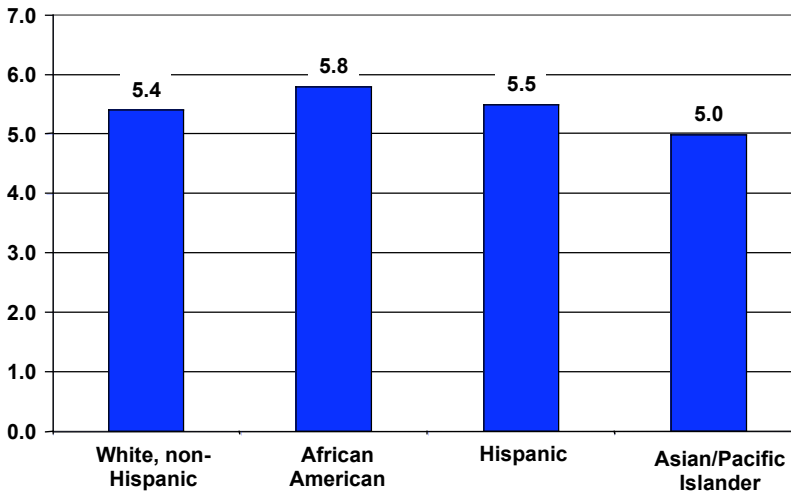
⁶ Beginning in 2003, survey respondents were allowed to select more than one racial designation. The reported homeownership rate for African-Americans since then reflects only those households that describe themselves as African-American alone and not African-American in combination with another race. The U.S. Census Bureau notes that this change increased the reported African-American homeownership rate by 0.2 percentage point in the fourth quarter of 2003. Households that choose more than one racial designation are included in the All Other category that includes Asians, Native Hawaiians or Other Pacific Islanders, and American Indians or Alaska Natives.

⁷ Joint Center for Housing Studies of Harvard University (2003).

existence of the gap, even after adjusting for financial and demographic factors, still implies that similarly situated minorities would have a lower homeownership rate than whites.

Figure 12

Percentage Point Gains in Homeownership Rate by Racial Group (1994 – 2003)

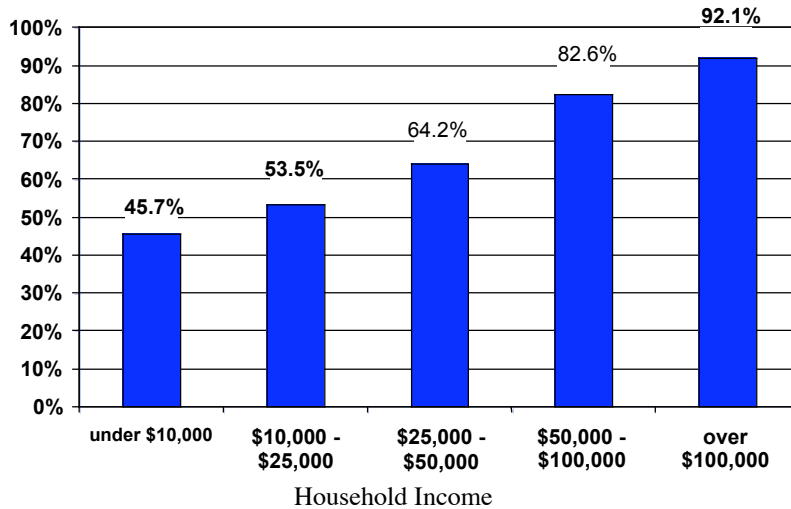


Source: U.S. Census Bureau

Income-based Differences in Homeownership

One of the primary drivers of homeownership is income. As **Figure 13** shows, the homeownership rate is less than 50 percent for households in the lowest income bracket while it surpasses 90 percent for those in the top income bracket. Higher income clearly widens the choice of available homes for purchase and increases the likelihood that a household will qualify for a mortgage. While homeownership is not limited to those with higher incomes, households with lower incomes face barriers such as too few homes in lower price ranges in locations near their place of employment.

Figure 13
Homeownership Rate by Income Level

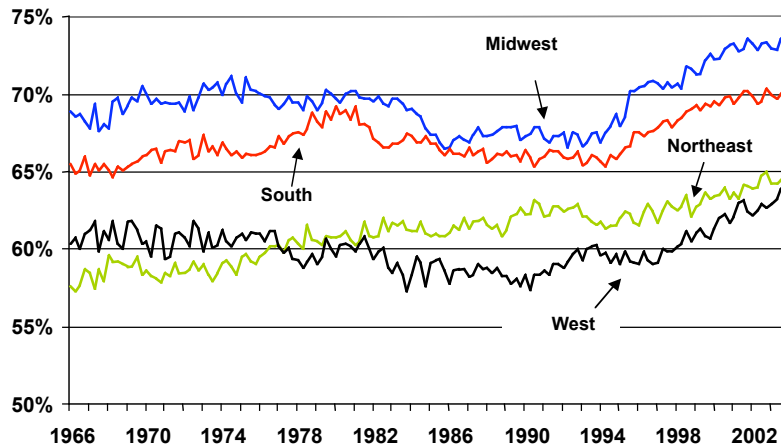


Source: American Housing Survey, 2001

Regional Differences in Homeownership

The homeownership rates in the Midwest and the South have consistently been higher than those in the West and the Northeast (see **Figure 14**). One reason for this difference is affordability conditions. States with higher home prices typically have lower homeownership rates. Hawaii, California, New York and Massachusetts were the only states with a homeownership rate below 60 percent in the 2000 Census. These states also have some of the highest home prices. Urban areas usually have higher housing costs but also offer more rental alternatives. Thus, homeownership is often lower in more urbanized areas.

Figure 14
Homeownership Rate by Region (1966 – 2003)



Source: U.S. Census Bureau

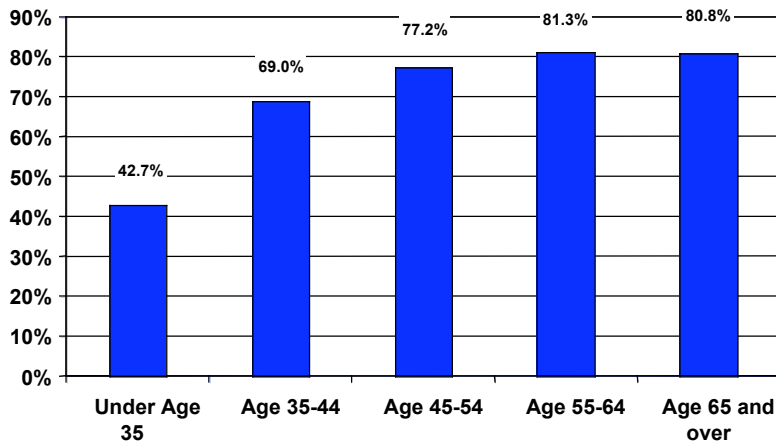
Factors Influencing Homeownership

In addition to the broad trends discussed above, there are several other important determinants of homeownership.

Age of Household

A home purchase entails substantial transaction costs, as measured both in financial resources and search time; therefore it is rational for people who are expecting to move frequently to forego homeownership. Younger households are more mobile because they are more likely to be single and more likely to make a career change. As a result, mobility rates decline as age rises. According to the Census Bureau, about one-third of those aged 20 to 29 years moved during any one year period while only 5 percent of those aged 55 and over moved. Higher mobility rates among young people contribute to lower homeownership rates for this group. In addition, because of the large upfront cost associated with purchasing a first home, households need time to accumulate necessary savings. Therefore, as **Figure 15** depicts, it is not surprising to see that the homeownership rates rise with the age of households.

Figure 15
Homeownership Rate by Age



Source: U.S. Census Bureau, Fourth Quarter 2003

Immigration

The housing boom of the past several years was supported by many factors, most notably record low mortgage rates. These forces culminated in a tremendous increase in home sales and home construction. However, one major contributor to home sales that cannot be overlooked, especially over the next decade, is immigration.

The population of the United States grew by roughly 33 million people during the 1990s, compared with approximately 22 million during the 1980s. What is truly impressive is that more than one-third of the increase in U.S. population that occurred during the 1990s resulted from foreign-born persons entering to the U.S.— roughly 12 million people.⁸

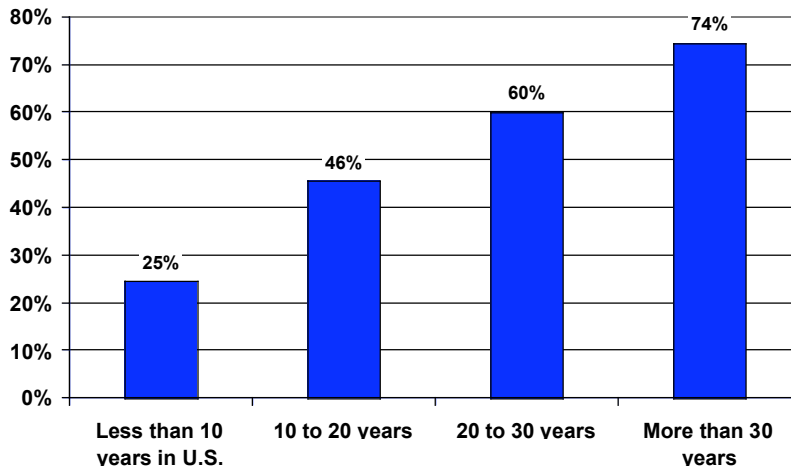
The increase in foreign-born persons has been evident in most areas of the country. Since 1990 there has been a large influx of immigrants to the West — a roughly 62 percent increase over the 1980s — while the South and Midwest each experienced increases of nearly 150 percent. In the Northeast, the increase was approximately 90 percent. For the three-year period from 2000 to 2003, the most popular immigrant destinations in the U.S., in order, were California (937,831 international immigrants), New York (442,800), Texas (439,765), Florida (349,333), Illinois (217,631), New Jersey (192,044), Georgia (127,050), Arizona (111,543), Massachusetts (108,737) and North Carolina (102,905). Metropolitan areas nationwide will continue to experience gains in their foreign-born populations reflecting these immigration trends.

While it takes time before immigrants move into homeownership, **Figure 16** shows that the homeownership rate rises rapidly with years since first arrival to the U.S. This increase partially reflects a decline in mobility as immigrants settle in a community. In fact, for those who arrived

⁸ Based on estimates from the U.S. Census Bureau, an additional 4.2 million foreign-born persons entered the U.S. between 2000 and 2003.

more than 30 years ago, the homeownership rate surpasses the national rate. A substantial number of new homeowners will be foreign-born in the first decade of the 21st century, especially in those areas of the country—primarily in the West and South—that have experienced high levels of immigration during the past decade.

Figure 16
Foreign-born Homeownership Rate by Years Since Arrival



Source: U.S. Census Bureau, Current Population Survey, 2000

Affordability

For many homebuyers, housing affordability has been very favorable due in large part to mortgage interest rates hovering near generational lows. Low interest rates and, at least prior to the 2001 recession, low unemployment, allowed thousands of first-time homebuyers to enter the market. Furthermore, increasing home values have allowed existing homeowners to move up the housing ladder by taking advantage of equity in their home as well as low mortgage interest rates.

However, for many households who have not stepped onto the first rung of the housing ladder, affordability conditions have deteriorated, especially among lower income households. According to the 2001 *American Housing Survey*, more than 70 percent of households with incomes in the lowest income quintile spend more than 30 percent of their income on housing, while half of the lowest income households spend at least 50 percent on housing.

A number of households with incomes well above the full-time equivalent of the minimum wage are struggling to find housing that meets their needs. In many communities an imbalance between incomes and housing costs is becoming a priority for local officials. For many local officials and employers, the realization is stark: members of their workforce are often being forced to “drive to qualify” to obtain an affordable place to live, resulting in longer commutes, less family time and less personal time. Combined, these factors often result in the loss of productivity as well as the loss of highly skilled employees who seek lower paying jobs in markets where housing is less costly.

Household Composition and Living Arrangements

The great variety of living arrangements that adults choose makes it increasingly difficult to point to the typical American household. These changing lifestyle patterns will continue to affect the context within which homeownership gains occur in the future. Homebuyers of the future will certainly differ from homebuyers of the recent past. These differences are related to several key factors, but affect homeownership through changes in both mobility and income. For example:

- Married couples represented 71 percent of households in 1970, but only 52 percent of America's 105 million households in 2000.
- The decline in married-couple families with children has been especially evident, falling from 40 percent of all households in 1970 to 24 percent in 2000. Also, married couples with children are now choosing to have fewer children.
- The number of people living alone swelled from only 17 percent of all households in 1970 to 26 percent in 2000. Those living alone make up the second largest category of households in the United States and it appears that this group will continue to grow due to high divorce rates, postponement of marriage and longer life spans.

While changes in household composition will be an important influence on the demand for housing and homeownership, baby boomers, and the increasing population of seniors, will be one of the most potent forces affecting the housing market and homeownership.

The senior population in the U.S. is growing rapidly. Much of this growth — from 35 million seniors today to 43 million in 2013 — is attributable to the aging of the baby boomers. Boomers are turning 50 at the rate of seven every minute and will continue to do so through 2013. This group will attain senior status with the highest historical rate of homeownership.

The majority of today's baby boomers and seniors are homeowners. In addition, more than four-in-five (83 percent) Americans age 45 and older say they **strongly** or **somewhat** agree that they would like to remain in their current residence for as long as possible. Even if they need help caring for themselves, 82 percent of older Americans prefer receiving services that allow them to stay in their current home.⁹ 78 percent of the 45 and older age group live in single-family detached homes; 9 percent live in multi-unit housing; 7 percent live in mobile homes; and 6 percent reside in semi-detached homes.¹⁰

Based on historical trends, there are a number of factors at work that will together support current ownership levels. In fact, a careful analysis of these trends suggests that the homeownership rate is likely to increase over the next decade.

⁹ AARP (2000).

¹⁰ AARP (2003).

Future Homeownership Trends

Many of the influences discussed above will support continued increases in homeownership during the next 10 years. A growing number of people moving into the peak home owning years, a reduction in the minority homeownership gap and a favorable mortgage rate outlook will contribute to the growth in homeownership.

While it is probable that minority homeownership rates will rise over the next decade, their lower ownership rate compared with the non-Hispanic white population will tend to push down the overall homeownership rate as these groups increase their share of the population. However, a large counterbalancing force will also be at work during the next 10 years. The population bulge of the baby boom generation has steadily moved into prime home owning years. Many in this cohort have already reached the age associated with an 80 percent homeownership rate. By 2010, this entire age cohort will be at least 45 years old and will be in the peak years of homeownership.

As discussed at length above, a number of factors, in addition to demographics, influence the rate of homeownership. To assess the magnitude of possible changes in homeownership over the next decade, three alternatives are described below.

Low Alternative: In the low alternative, non-Hispanic white homeownership increases slightly to 76.5 percent while minority homeownership rises only three-fourths as quickly as the rate of increase over the period from 1993 to 2003. Both of these assumptions reflect a dampening of the forces underlying the past decade's increase in homeownership.

Middle Alternative: In the middle alternative, non-Hispanic white homeownership increases by two percentage points to 77.5 percent while minority homeownership rates increase at roughly the same pace as the period from 1993 through 2003. These assumptions reflect a moderate homeownership increase among non-Hispanic whites, a group that already has a high rate of ownership, along with continued gains among minorities.

High Alternative: The high alternative assumes that non-Hispanic white homeownership rises by three percentage points and minority homeownership rates increase by 50 percent *more* than the gains posted during the past 10 years. This alternative would likely represent an upper limit on homeownership in 2013.

Figure 17
Alternative Homeownership Projections

		Homeownership Rate			Minority Homeownership Gap (percentage points)	Change in Homeownership 2003-2013 (thousands)		
		Total	Non-Hispanic White	Minority		Total	Non-Hispanic White	Minority
2003	Actual	68.3%	75.4%	48.8%	26.6			
2013	Low	69.9%	76.5%	54.0%	22.5	10,749	5,366	5,383
	Middle	70.9%	77.5%	55.3%	22.2	12,127	6,234	5,894
	High	72.4%	78.5%	58.3%	20.2	13,948	7,101	6,883

Source: U.S. Census Bureau; projections by National Association of Realtors¹¹

The low alternative implies a very slowly rising homeownership rate, along with some reduction in the homeownership gap from more than 26 percentage points to 22.5 percentage points. If moderate increases in the non-Hispanic white ownership rate are realized and minority homeownership continues to increase at a pace similar to the past decade, the homeownership rate in 2013 would approach 71 percent, an increase of 2.6 percentage points. An additional 5.9 million minority households would be homeowners and the homeownership gap would fall to 22 percentage points. The high alternative reflects an accelerating rise in minority homeownership coupled with a sizable increase in non-Hispanic white ownership and implies a rate in excess of 72 percent by 2013.¹¹

Conclusion: Meeting the Needs of Homebuyers

Gains in homeownership, especially among segments of the population with historically low ownership rates, do not take place unaided by innovations in the homebuying process. While continued growth in homeownership is likely, there also are a number of challenges and opportunities. Many of these challenges are being addressed so that those on the cusp of homeownership have the opportunity to enjoy the benefits that homeownership offers.

Increasingly, homebuyers with weak or impaired credit have access to reasonably priced mortgage loans. Lenders are tailoring mortgages to these borrowers – for example, mortgages that can be reset after a specified period of timely payments. This type of mortgage helps remove the stigma of weak credit and can help instill confidence in the home loan process for this segment of homebuyers.

Potential homebuyers are becoming more knowledgeable about the homebuying process, and more astute in understanding the role of credit and mortgage lending. Lenders and real estate professionals benefit from educated consumers. The Internet, with its democratization of information, is empowering homebuyers to compare mortgage products, lenders and their affiliated services.

¹¹ This range of alternative homeownership rate projections is equivalent to *growth* in the homeownership rate of approximately 0.3 percent to 0.6 percent per year.

This new empowerment is a tremendous enhancement to homeownership counseling. Homeownership counseling has been an integral part of affordable mortgage lending in the United States for 30 years.¹² Mortgages that incorporate homeownership counseling are becoming standard products that reflect recognition by lenders that certain potential homebuyers must not only be financially literate but also confident in their abilities to be successful homeowners.

The benefits of owning a home are many and accrue not only to homeowners but also to the community at-large. With homeownership at a record high, more households than ever have the opportunity to enjoy these benefits. During the next decade, many forces will shape the housing markets — the aging of the population, immigration trends and household composition to name a few. It is clear from what we know about these trends that the dynamics underlying homeownership will change as will the process by which homes are purchased and financed. These changes present a number of challenges that if addressed will assure that homeownership remains a cornerstone of America's communities.

¹² Hiram and Zorn (2001).

The Outlook for Home Prices Over the Next Decade

As in any market, demand and supply factors are the primary determinants of prices – and this includes the housing market and home prices. From a starting point today in which the inventory-sales ratio for housing is near all-time lows, we see further strong growth in housing demand coupled with constraints on future housing supply. This combination almost certainly will mean continued strong home price appreciation on average over the next decade, although perhaps somewhat moderated from the rapid rates seen in the last few years.

- Home price gains have been unusually strong because a combination of record housing demand and increasingly stringent supply constraints (through a grouping of community concern about sprawl and the environment as well as shortages of developable land) has boosted price appreciation above the rate of income growth.
- With the national unemployment rate below 6 percent (and falling), still low mortgage rates and economic growth accelerating, the likelihood of a decline in home prices at the national level is quite remote.
- Given our long-term economic outlook and projections of demand and supply conditions, we project that, at the national level, prices on single-family homes will grow on average by around 5 percent per year between 2004 and 2013, with a reasonable range of 4 - 6 percent.
- Increased supply constraints could push home price gains to above 6 percent per year.

Our analysis begins by reviewing the various measures of home prices that are widely available. We briefly review the evidence regarding the possibility of a home price decline, which strongly suggests that there is no home price bubble. Following this we discuss various methods researchers have employed for modeling home prices. We end our discussion with a forecast of home price growth rates over the next 10 years.

Home Price Measures

There are several measures of existing home price appreciation, each of which has certain advantages. Three commonly used measures are the National Association of Realtors[®] (NAR) mean and median prices of existing homes sold and two repeat transactions indices: the Home Price Index (HPI) published by the Office of Federal Housing Enterprise Oversight (OFHEO) and the Conventional Mortgage Home Price Index (CMHPI) jointly developed by Freddie Mac and Fannie Mae and published by Freddie Mac. NAR[®] collects data from a panel of local Realtor[®] associations across the nation, while the CMHPI and OFHEO HPI indexes are derived from repeat transaction data from Fannie Mae and Freddie Mac.

Advantages of the NAR® Home Price Measures

NAR® data encompass the full spectrum of property value (high-end homes as well as starter homes), while the OFHEO HPI and the CMHPI are restricted to homes with conventional, conforming loans (and thus generally leave out lower- and upper-end homes as well as home sales that use no mortgage financing – leaving approximately 65 percent of all sales). At the national level, NAR® releases data monthly and quarterly for metro areas. The CMHPI and OFHEO HPI indexes—both available at the national, regional, state, and metropolitan statistical area (MSA) levels—are available quarterly, with longer lags than the NAR® quarterly data.

Because the NAR® measure provides a dollar price level, rather than an index, it is relevant for those who are interested in an actual price of a typical existing home sold. Unlike NAR® data, the HPI and CMHPI measures cannot be used to compare house prices from one area to another; they can only be used to compare house price appreciation over time. In addition, repeat-transactions indices like the CMHPI and HPI are subject to larger revisions than the NAR® data, because historical values of the indices are revised each quarter as new property transactions enter the sample. However, the NAR® series shows more substantial changes in values as the location, size and amenities in homes sold change month-to-month.

Advantages of Repeat Transactions Home Price Indexes

The OFHEO HPI and the CMHPI are, however, better measures of underlying home values over time. Home price appreciation derived from a repeat transactions indexes, where changes in the values of the same homes is measured over time, is not distorted by changes in the mix of homes sold, *e.g.*, an increase in the share of high-end home sales that could result in an upward bias in the median (or average) home price and imply higher home price appreciation than that calculated from the HPI or CMHPI. However, neither index covers the entire housing market because they are based on the value of homes financed with conventional, conforming mortgages. Both the CMHPI and HPI indexes also provide broader metro coverage than the NAR® index.

Repeat transactions indexes like the CMHPI are sometimes referred to as constant *quality* indexes. This is a misconception. A better way to think of them is as constant *property* indexes. Homeowners may make improvements and additions to their homes over time, for example by adding a bathroom or another bedroom. These additions contribute to the growth in the value of homes, just as increases in the costs of building materials and land will add to the value of the home. A true constant quality index would not take into account the improvements made to the housing stock – these improvements account for between 0.5 and 1.5 percent of the appreciation in home values annually.¹³

Other Measures of Home Prices

Like the NAR® index for existing homes, the Bureau of the Census' mean and median new home prices provide a price level. Because the average size and quality of new homes have risen substantially since the early 1960s (when data became available), changes in new home prices tend to overstate appreciation on a “constant-quality” home over time because different homes

¹³ Based on estimates from the Federal Reserve Flow of Funds data on the value of the U.S. single-family housing stock and data on expenditures on improvements and additions to owner-occupied homes measured by the U.S. Census Bureau.

are being compared. To correct this bias, the Census Bureau also provides a constant-quality home price index, constructed from a hedonic regression, but the data coverage is limited to the national level and the four Census regions and includes only a few of the many factors that determine value. Moreover, the bulk of homes sold in a given year are resales, rather than new sales, so the measures exclude a substantial portion of the market.

Every 10 years, median home value data are available from the decennial Census for each MSA, compared with every two years from the American Housing Survey (AHS). In addition to the frequency limitation, both data sources report home values by asking households to estimate the value of their homes, rather than by using transaction data, which could be a source of bias.

Finally, the Federal Housing Finance Board, in its Monthly Interest Rate Survey (MIRS) of mortgage lenders on rates and terms on conventional purchase-money mortgage loans, provides an average sales price of all new and existing homes backing loans closed during the last five business days of the month. The MIRS excludes all houses sold using government-insured loans, those that are sold using no financing, two-to-four unit family houses and manufactured housing, and its regional coverage is based on very small samples.

Could national home prices decline?

The importance of regional heterogeneity

One factor that is sometimes overlooked in discussions of housing markets is the importance of regional heterogeneity. Despite the national integration of mortgage finance, housing markets (defined by the equilibrium between housing demand, housing construction and housing prices) display considerable heterogeneity. Location still matters.

Following the extraordinarily positive performance of housing markets on a national basis over the past few years, there were some analysts who feared that there was a national housing bubble, which would inevitably be followed by a national collapse in house prices. The heterogeneity referred to above strongly suggests that this is an implausible scenario. While it is possible that select regional markets can display signs typical of an overheated market – homes selling above list prices, buyers quickly flipping properties, continued gains in prices as unsold inventories rise – it would be very difficult for this to occur on a national basis. As a result, while there may be price declines in certain markets that had risen too quickly, there is little possibility of a widespread national decline since there is no national housing market. As Federal Reserve Chairman Alan Greenspan recently noted,

“A home in Portland, Oregon is not a close substitute for a home in Portland, Maine, and the ‘national’ housing market is better understood as a collection of small, local housing markets.”¹⁴

While there is no national housing market in a true economic sense, it is convenient for our purposes here to work at the national level for ease of exposition. However, it is important to

¹⁴ Greenspan (2002): 6.

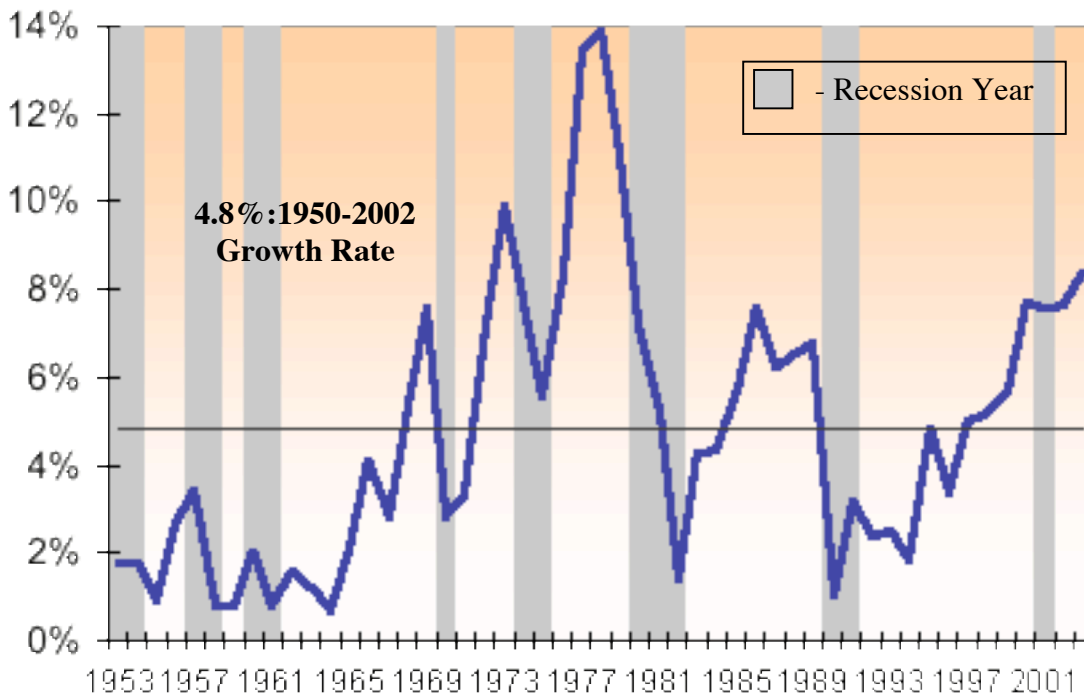
remember that the national trends we are discussing will be observed only as the average of differing regional experiences.

No sign of a national home price bubble

There has not been a single year over the past half century in which the national average home value has declined in the U.S. (see **Figure 18**). This is a period that has included periods of both severe recession and high mortgage rates, or both (as occurred during 1981-1982 when the unemployment rate exceeded 10 percent and mortgage rates reached 18 percent). In fact, the last sustained drop in national average home values occurred during the Great Depression, when the unemployment rate hit 25 percent. With the national unemployment rate below 6 percent, mortgage rates low and economic growth improving, the likelihood of a decline in home prices at the national level is quite remote.

Figure 18
U.S. Home Prices Have Grown Every Year Since 1950

Annual Growth in Nominal Home Values



Sources: U.S. Census Bureau, U.S. Bureau of Labor Statistics, National Bureau of Economic Research, and Freddie Mac

There have been occasional regional home price declines, including some significant drops in certain areas at specific times. Home price declines have occurred when there is a substantial imbalance between supply and demand, where there is a supply overhang (anemic demand leading to a substantial and growing inventory of unsold homes, or a surge in new construction in an area of weak housing demand). Those conditions exist in very few (if any) places around the country today, and certainly not nationally.

Another important factor at the regional level regarding movements in home prices is that there can be net emigration from a region or particularly out of a single MSA. The entire oil patch region lost population in the mid-1980s, and Houston suffered particularly given the previous influx of workers with few long-term ties to the community, who then left following the oil bust.

The increase in the number of households either trying to sell or simply abandoning their properties further depressed house prices in the region. However, on a national basis, the population has never decreased year-over-year.¹⁵ This factor more than any other limits the extent of a potential national downturn in home prices, and distinguishes a national from a regional downturn. At least for the United States, it is extremely unlikely that there will be large-scale emigration, the most probable factor that could lead to sustained declines in population nationwide – and thus a drop in national-level house prices.

There have also been home price declines in areas where home prices have gone up counter to underlying fundamentals. For example, California and the Northeast in the late-1980s exhibited home price gains that were much stronger than they have been in recent years (as well as longer lasting). At the same time, unsold inventory levels were high and climbing – which basic economics suggests should not have occurred. As a result, there is evidence that at least some of the sharp rise in home prices in these regions over those periods was a result of speculation.

Today, the inventory situation is very different with unsold inventories in California, the Northeast and most of the rest of the country at very low levels (and with inventory-sales ratios for both new and existing homes close to record lows). This is not suggestive of a drop in house prices, especially with the economy likely to grow more quickly over coming years than over the last several. Unlike the cases of California and the Northeast in the early 1990s, the low level of unsold inventories today suggest that housing demand has been exceeding supply – and therefore appropriately pushing up prices. In that earlier period, unsold inventories rose while prices surged – a situation that likely had a bubble element to it. Federal Reserve Board chair Alan Greenspan unequivocally argued in a recent speech “a sharp decline [in home prices], the consequences of a bursting bubble, however, seems most unlikely.”¹⁶ He dismissed any similarity to the stock market’s pricing behavior and that of housing’s for three reasons: high transaction costs for housing greatly discourage the type of buying and selling frenzy that often characterizes bubbles in financial markets; local conditions dominate home prices and thus any bubbles that might emerge would tend to be local; and the level of new home construction is well supported by steady household formation creating no inventory overhang.

Some analysts have been concerned that home price gains have recently exceeded the rate of inflation. There is no reason, however, for any particular price to necessarily grow over time at the rate of inflation. The inflation rate merely captures the average of all prices in the economy. Consider personal computers, for example. If we truly believe that all prices eventually revert to some mean growth rate, then we should expect personal computer prices to rise sharply. Given continued sharp declines in the prices of personal computers (stemming from both outright

¹⁵ See the Census Bureau’s “Historical National Population Estimates” including U.S. Armed Forces overseas: <http://eire.census.gov/popest/archives/pre1980/popclockest.txt>.

¹⁶ Greenspan (2003).

reductions in production costs and increases in quality), the odds of a return to the general inflation rate for PCs is very unlikely. Even more unlikely would be a period in which inflation on personal computers exceeds the general inflation rate – to bring prices on personal computers, not simply their inflation rate, back to the average. Similarly, it is not necessary for home price gains to slow to the rate of overall inflation (nor for home prices to eventually fall to the average).

Perhaps the most important fundamental value benchmark for housing prices is whether the typical family in a given geographic area can afford the typical home in that area. Thus the correct comparison is to income growth. Holding interest rates constant, home price gains should closely track income growth, otherwise affordability would either rise or fall over time without limit. If interest rates increase in isolation, home price gains may slow relative to income growth. But rising rates are often associated with a stronger economy, meaning faster income growth as well. Home price growth that is in line with income growth is sustainable over the long run, even if home price appreciation outpaces overall inflation.

Figure 19
Relationship between Income and Home Price Growth by Decade

	Nominal GDP	Per capita Disposable Income	Home Prices
1960s	7.0	5.9	2.9
1970s	10.4	9.4	8.7
1980s	7.6	6.9	5.1
1990s	5.4	4.0	3.7
2001-03	3.3	3.4	7.7

Source: Bureau of Economic Analysis, Bureau of Labor Statistics, U.S. Census Bureau, Freddie Mac, and OFHEO

Between 1975 and 2003, using the Bureau of Economic Analysis’ nominal per capita disposable personal income estimates and OFHEO’s home price index (not available prior to 1975), average income growth tracked the average rise in home prices well – at 6 percent and 5.7 percent, respectively.¹⁷ Decade by decade, home price and income growth rates can deviate from each

¹⁷ BEA and the Bureau of the Census both publish measures of income. The BEA measure is the broader and more current of the two. Although home prices have risen relative to income over the past few years, the ratio of income-to-prices is still higher than it was in the 1970s. Household income measures from the Bureau of the Census’ Current Population Survey are generally used to make the point that homes have become increasingly unaffordable. The rationale for using the Census measures is that they have the advantage of being a median figure – and therefore less susceptible to being influenced by outliers with significant income. The distribution of homeownership, however, is tilted toward the upper end of the income distribution rather than distributed more evenly among income categories. For example, in 2003, the homeownership rate for households with family income greater than or equal to the median family income was 83.6 percent, compared with 51.8 percent for those with less than median income. Thus, it is not clear that using median income would provide a better measure than average income for the typical homeowner. Moreover, household income is less broad in coverage, it is not a measure of disposable income, and, according to the Census Bureau, survey respondents tend to understate their incomes – all of which suggest that disposable personal income per capita is a better measure. In addition, the HPI measures average growth, not median growth, so comparison of the HPI with average income growth is more appropriate.

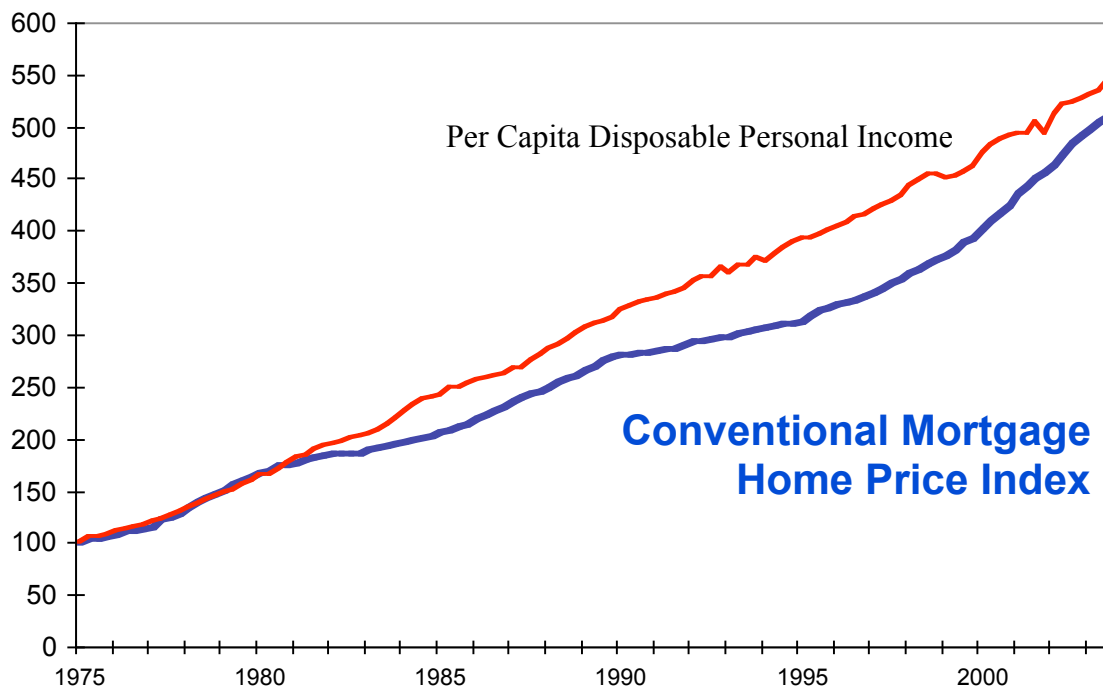
other, however. As shown in **Figure 19**, income growth outpaced home price growth significantly in the 1960s; however, home price growth accelerated such that their growth rates were much closer in the 1970s. The same phenomenon occurred again in the 1980s and 1990s. In the first three years of this decade, home price gains outpaced income growth significantly, but this was a period when income growth was unusually depressed. It was also a period in which mortgage rates fell by 40 percent. We would expect over the full decade that income growth and mortgage rates will rise as the economy recovers, while the unusually strong growth in home prices should moderate.

The long-run relationship between home price and income growth is helpful in forecasting home price trends over the next 10 years, as discussed in the last section of this chapter. As shown in **Figure 20**, home price gains actually fell behind income gains in the early 1990s, and have yet to make up this lost ground, even with the unusually strong gains of the past few years. Theory and historical patterns predict that these series will retain their close relationship going forward.

Figure 20

U.S. Home Price Appreciation Has Lagged Income Growth Over the Past 25 Years

1975 = 100



Sources: U.S. Bureau of Economic Analysis and Freddie Mac

Overview and Comparison of Home Price Forecasting Models

There have been an increasing number of studies on home price dynamics in recent years, partly reflecting the heightened interest and concern about housing market bubbles – especially as house price appreciation continues to be robust. As a result, it is useful to review what we know

about home price models. Five major categories of studies on home price dynamics exist: random walk, single equation, mean reversion, time-varying volatility and vector autoregression models.¹⁸ Each has strengths and weaknesses. In the following we provide a brief review of these models, discuss their pros and cons, and look into the relevant models that can be potentially useful in home price research.

Random walk model: The efficient market hypothesis stipulates that all relevant information is “priced in.” If this hypothesis were true, the econometric implication would be that future price changes are unpredictable, as market participants would already have taken account of any information that might be useful in predicting prices in their bids, *i.e.*, future price movements follow a random walk. The random walk model was first used to describe stock price movements and later applied to other financial assets. Case and Shiller (1989) tested the random walk model on home prices. In this context, the returns on real estate assets are independent from one time period to another and are identically distributed.¹⁹ Later studies rejected the random walk model, finding that home price returns are correlated across time.²⁰

Single equation model: Single equation models with multiple explanatory variables attempt to determine the extent to which housing market fundamentals can explain home price movements. Abraham and Hendershott (1996) used income, employment and real interest rates to model home prices. Miller, et al. (2003) used market fundamentals and lagged home prices to explain current home prices. Another approach in single equation models uses cointegration analysis to identify the long-term relationship between a set of variables. If such long-term relationships exist between these variables, then they are cointegrated. Gallin (2003) examined the relationship between home prices and income at the national level as well as in many metropolitan markets and concluded that home prices and income are not cointegrated. Other recent studies including Kim, et al. (2003) find evidence of cointegration, however. In addition, Case and Shiller (2003) investigated evidence of bubbles in housing markets by looking at the relationship between home prices and income. They argued that the stability of the relationship between income and house prices over time and space is crucial in determining whether a bubble exists. If that relationship is stable, then fundamentals have the potential to explain house prices. They found that income growth alone explains virtually all house price appreciation over time in all but nine states.

Mean reversion model: Mean reversion models assume that market fundamentals determine the (long-run) equilibrium rate of home price appreciation. If the actual home price path deviates from this equilibrium level, a mean reversion mechanism will pull the path back towards the equilibrium rate. Mean reversion models can be in either univariate or multivariate form. The former estimates the equilibrium growth rate from a long-run average growth rate, while the latter uses contemporaneous market fundamentals to determine the equilibrium growth rate. Capozza *et al.* (2002) used the multivariate form to analyze the mean reversion process of different local housing markets and found that the mean reversion parameters are strong and

¹⁸ For detailed review of some earlier home price models, see Cho (1996).

¹⁹ The three-stage repeat transaction index estimation model for home prices includes a second stage that assumes the error terms follow a random walk model, and thus the variances of the price appreciations are proportional to the time interval between two transactions.

²⁰ See, for example, Gatzlaff (1994); Kuo (1996); Calem, et al. (2002); and Kim, et al. (2003).

significant in coastal MSAs but weak or insignificant in interior regions. Mean reversion models are useful for analyzing price disequilibrium and cyclical movements in housing markets.

Time varying volatility model: Certain researchers have noted that the real estate market has time varying volatility, as do other financial markets. This finding is important for risk assessment in housing markets. Nothaft, et al. (1995) found that home prices at the census division level display generalized autoregressive conditional heteroskedasticity (GARCH) volatility, that is, levels of volatility that are correlated over time in a predictable, autoregressive, manner. Chinloy, et al. (1996) also found evidence of GARCH volatility in the four census regions' home price indexes. When comparing the out-of-sample forecasting power of several models, Kim, et al. (2003) also found that the GARCH model outperforms the simple autoregressive (AR) model, error correction model and mean reversion model in land prices. Crawford and Fratantoni (2003) investigated another type of time-varying volatility model – the regime switching model – where the home price process switches between two different models (with the same model framework but different parameters, including the volatility parameters). They found that while the regime switching model can do better at fitting historical state level home prices, a simple autoregressive integrated moving average (ARIMA) model does better at forecasting home prices out-of-sample.

VAR and other alternatives: Vector autoregressive (VAR) models include dynamic linear relationships, where each variable in the system depends on the lagged values of all variables in the systems. The VAR model simplifies the dynamic relationship of the variables in the model, but it has limited capability to forecast home prices beyond a short horizon.

Is there a “best” model?

Each of these models can yield insights regarding the likely behavior of home prices over the next decade. However, none is likely to give applied researchers and market participants a fully satisfactory forecast. We build an outlook consistent with what we believe are the driving forces of long-run growth in the housing sector, using inputs from these models as appropriate.

Outlook for Home Prices

As discussed earlier, home price growth should track household income growth closely in the long run. If home prices are rising faster than income, homes will become unaffordable for households, resulting in a decline in housing demand and more moderate home price gains. On the other hand, if home price gains are consistently slower than income growth, the demand for housing will increase, putting upward pressure on home prices. The combination of favorable demographic trends and the historically strong and stable relationship between income and home price growth, indicates that housing demand will continue to put upward pressure on home prices over the next decade, provided that housing supply does not outstrip demand (and mortgage rates do not rise to a level that would choke-off demand).

After projecting long-run economic growth and fundamentals affecting housing demand and supply, and utilizing a number of different models, we project that home prices will grow on average by about a 5 percent annual rate over the next 10 years – similar to our projection of household income, although it could reasonably be as low as 4 percent or as high as 6 percent. We recognize that home prices may grow somewhat more quickly than income if supply

constraints continue to be an important factor in regional housing markets – and especially if these constraints increase. As discussed earlier, it is likely that the supply response will be constrained, possibly pushing home price gains above 6 percent a year.

In a long-term projection, supply factors are the most important determinants of economic growth. Real gross domestic product tends to follow its potential path, depending largely on productivity growth and growth in hours worked. Output per worker in nonfarm private business grew by 3.3 percent per year over the latest five years, partly because of investment that raised the amount of capital per worker, a primary factor leading to productivity growth. Productivity growth is likely to slow between now and 2013 relative to the extraordinary pace of nearly 5 percent of the past couple of years.

Figure 21
Forecast of Income and Home Price Growth 2004 – 2013

	Low Estimate <i>(percent change)</i>	Mid Estimate <i>(percent change)</i>	High Estimate <i>(percent change)</i>
Productivity	2.0	2.5	3.0
Hours Worked	0.8	1.0	1.2
Real GDP	2.8	3.5	4.2
Inflation	2.2	2.5	3.0
Nominal GDP	5.0	6.0	7.2
Nominal Income Per Capita	4.0	5.0	6.2
Home Prices	4.0	5.0	6.2

Source: Fannie Mae Economics

Based on strong productivity growth over the past decade and long-term growth in hours worked, we estimate that real GDP growth will be around 3 to 4 percent a year for the next decade (see **Figure 21**). Additionally, inflation may edge up from its recent extremely low pace (although it is unlikely that the Federal Reserve would let it move up by much) – perhaps to around 2 to 3 percent. That would bring nominal GDP growth up to around 5 to 7 percent. Using the historical relationship between GDP and income growth in **Figure 19**, this suggests that nominal personal income per capita should rise by around 4 to 6 percent per year, on average – with a similar rise in home prices. Slightly higher rates of productivity growth, increases in hours worked or inflation could also push nominal income higher to around 6.5 percent a year, suggesting an annual average home price appreciation rate of about 6 percent. Finally, increasing supply constraints could put additional upward pressure on home prices such that home price gains could be higher than the 6 percent upper end of the range suggested by our forecast of long-term economic growth and per capita income.

Mortgage Demand and Supply

America has the best housing finance system in the world. This system taps into the global capital markets to assure that a steady, low-cost source of funds is continually available to finance the needs of the housing market and America's families. The mortgage credit needs of America's families are primarily determined by the growth in the number of households, the anticipated rise in the homeownership rate, appreciation in home values and greater leveraging of the housing stock. Over the next decade:

- America's families will likely need 125 million mortgage loans for home purchase or refinance, totaling \$27 trillion in mortgage originations. First-time homebuyers will remain a major component of the purchase market, buying about 24 million homes.
- Residential mortgage debt outstanding is projected to grow by 8.25 percent per year, which would lead to more than a doubling of debt outstanding, to \$17 trillion.
- Faster home value growth, related to land-use controls and other supply constraints, would translate into higher levels of originations and stronger debt growth. To illustrate, home value growth that is one percentage point faster than the projected base case would likely increase 10-year single-family originations to \$30 trillion and increase residential mortgage debt outstanding to \$19 trillion by the end of 2013.
- The funds to support mortgage originations will primarily come from the sale and securitization of loans in the secondary market. Access to global capital markets will continue to play an important role in financing mortgages for America's families.

Drivers of Mortgage Credit Demand

Widespread availability of low-cost mortgage loans has played a vital role in stimulating economic activity during the recession and weak recovery of 2001-2003. The housing finance system channeled a record volume of loans to borrowers, enabling construction of new housing, reduction in mortgage interest payments for current owners and conversion of home equity into funds for home improvement, purchases of consumer durables and other purposes.²¹ The overall demand for mortgage credit is principally determined by four factors: household growth, increases in homeownership, home-value appreciation and leverage.

The market demand for mortgage credit is the sum of each individual's mortgage credit need. Growth in the number of households causes growth in overall market demand. Over the past decade the number of households grew by 1.3 percent per year. As discussed earlier household growth is expected to continue at a 1.1 to 1.4 percent annualized rate through 2013.

Increases in the homeownership rate also lead to larger volumes of mortgage demand. Homeowners are more likely to have a higher loan-to-value ratio on their residence than on an

²¹ As discussed in Nothaft (2004), refinance and second mortgage placement have enabled additional home improvement and consumer durable spending.

investment property, and are more likely to refinance the loan on their home. In particular, first-time homebuyers generally have limited liquid assets and make relatively small down payments. To illustrate the greater credit needs of homeowners, owner-occupied properties comprised 83 percent of the one- to four-family housing stock in 2001, but accounted for 94 percent of the dollar volume of one- to four-family loan originations that year.²² The U.S. homeownership rate has grown from 64 percent in 1993 to 68.3 percent in 2003, or an annualized growth rate of 0.6 percent. As shown in the “Homeownership During the Next Decade” chapter, the projected increase in the national homeownership rate is 0.3 to 0.6 percent per year over the next decade, placing the U.S. homeownership rate between 69.9 and 72.4 percent by 2013.

Home-value appreciation has been the largest single component of the growth in mortgage credit demand. Economy-wide inflation increases the nominal amount of mortgage credit required by borrowers. In addition, since home values have grown faster than general price inflation over the past 50 years, mortgage credit demand has also grown in real (that is, inflation-adjusted) terms. Over the last decade, the annualized growth rate in home values has been 5 percent. Appreciation is expected to average around 5 percent per year, close to the 50-year trend; weaker housing demand or lower general price inflation than anticipated could reduce appreciation to 4 percent per year, while land and building supply constraints could push this projection to 6 percent or more, at an annual rate. Given the general state of local land use discussions and limitations, faster home price gains would be more likely to occur than slower gains - imparting an upward bias to the outlook for home prices and thus mortgage demand.

Leverage: The Fourth Driver

The aggregate leverage of the housing stock represents the total amount of mortgage debt outstanding divided by the value of the housing stock; in effect, leverage refers to the aggregate “loan-to-value” ratio for the nation’s housing stock. Increases in the utilization of mortgages by borrowers will increase the aggregate leveraging of the housing stock and contribute to mortgage credit demand.

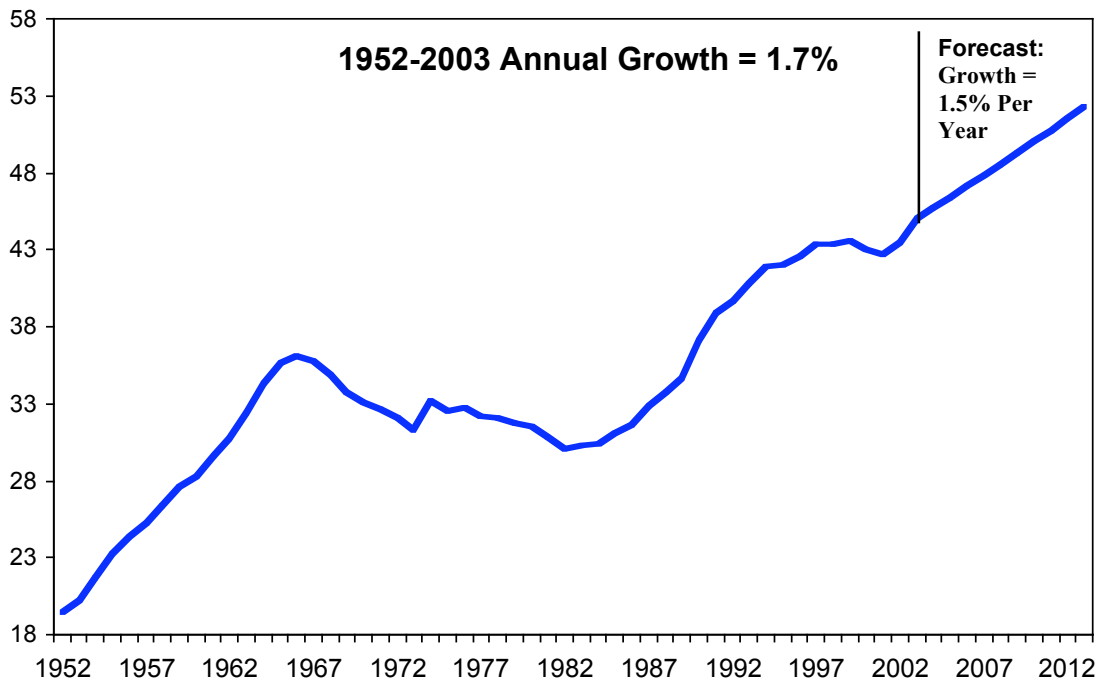
Figure 22 traces the change in aggregate leverage over the past half-century. Leverage has sometimes increased and sometimes declined, and has risen at a 1.7 percent annualized rate over 1952 to 2003.²³ Much of the growth through 1965 was caused by increases in the homeownership rate. Homeownership rates rose from 55 percent in 1950 to 63 percent in 1965, and first-time owners generally have more debt than long-time owners. Increases in mortgage rates and periodic mortgage credit crunches, caused by interest-rate ceilings and the lack of a liquid secondary market, contributed to a decline in aggregate leverage through the early 1970s. The leverage ratio remained approximately at the same level between the early 1970s and the mid-1980s.

²² The owner-occupied share of the housing stock was computed from the 2001 *American Housing Survey*, and the share of new originations from 2001 Home Mortgage Disclosure Act data.

²³ In 1952, the aggregate leverage ratio for the U.S. housing stock was 19.5 percent, and in 2003 it was 45.1 percent (average of four quarterly values), for an annualized growth rate of 1.7 percent (Federal Reserve Board’s Flow of Funds Accounts, Table B.100: “Balance Sheet of Households and Nonprofit Organizations,” ratio of household mortgages to value of real estate).

Several factors have contributed to the rise in the aggregate leverage ratio since the mid-1980s. Tax incentives to finance consumer purchases through mortgage debt (an outgrowth of the Tax Reform Act of 1986, which phased out the deductibility of consumer interest payments), technological advances that have made it easier and less costly to obtain mortgage financing, creation of new loan products (such as home equity lines of credit), and attitudinal changes regarding the acceptability of mortgage debt have led to a secular rise in mortgage utilization. For example, the proportion of owners who owned their home free and clear of debt was 43 percent in 1985, and declined to 36 percent by 2001, according to the American Housing Survey.

Figure 22
Debt-To-Value Grows with Ownership Gains
Mortgage Debt Relative to House Values (Percent)



Source: Federal Reserve Board

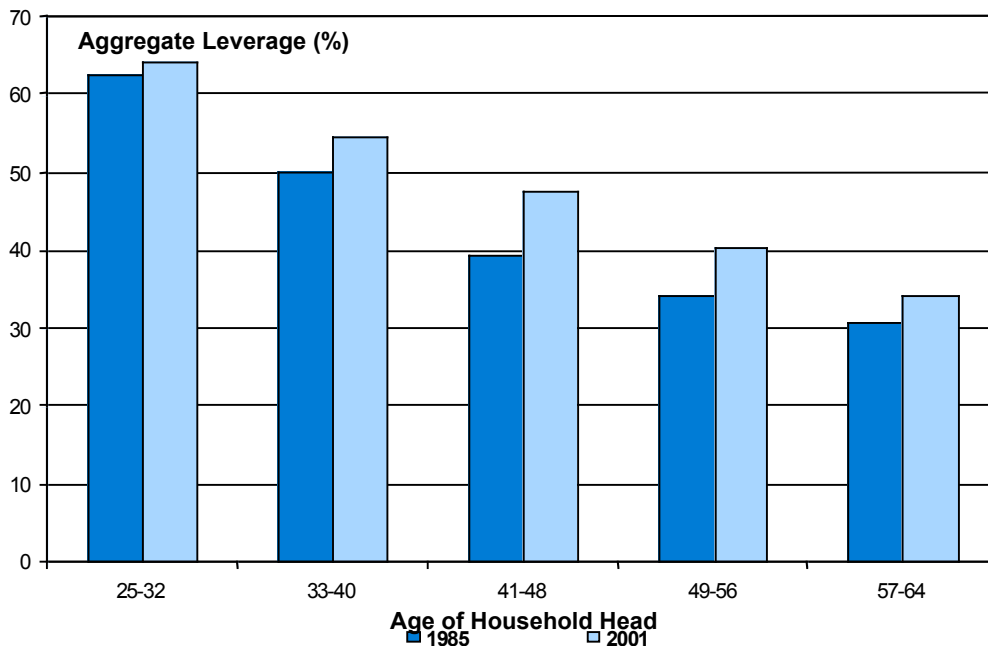
Improvements in technology, including broadened use of the Internet, and innovations in mortgage lending, including a wider range of mortgage products, have expanded the pool of potential mortgage borrowers. For example, combining Internet-based automated underwriting systems such as Freddie Mac's Loan Prospector® and Fannie Mae's Desktop Underwriter® with other online efficiencies can reduce borrowers' costs of origination by \$800 to \$2,100,²⁴ speed up loan closings, and allow loan approval for borrowers with less than traditional credit profiles and limited savings.

²⁴ Estimates of borrower savings from Internet-based technology of between \$800 and \$1,800 are given in Nottage (1999). Similar estimates of borrower savings of about \$2,100 are presented in Danford (1999). Of the total savings from Internet-related technology, Freddie Mac estimates that approximately \$300 to \$650 are directly due to the use of automated underwriting systems such as Loan Prospector® (see Freddie Mac 1996).

Based upon U.S. Census Bureau estimates, a reduction of \$1,000 in origination costs could help an additional 116,000 renters afford homeownership while a reduction of \$2,000 in origination costs could make it possible for an additional 314,000 renters to afford to buy a home.²⁵ Freddie Mac and Fannie Mae have introduced mortgage products that have also penetrated previously untapped markets by permitting down payments as low as 3 percent and by applying more flexible underwriting guidelines.²⁶

Figure 23

Younger Families and More Recent Cohorts Have Higher Leverage



Source: American Housing Survey for 1985 and 2001

Furthermore, younger cohorts are far more likely to have a mortgage than households headed by an older cohort. As shown in **Figure 23**, for like-aged household heads, more recent cohorts have higher levels of leverage than older cohorts. For example, for households where the head was aged 41 to 48 years, the average leverage ratio was 39 percent in 1985, whereas for the same

²⁵ Savage (1999).

²⁶ In Listokin and Wyly (1998), a study completed for the U.S. Department of Housing and Urban Development, researchers from the Center for Urban Policy Research at Rutgers - The State University of New Jersey explained that “compared to the Historical Mortgage, ... the GSE Affordable Mortgage [of which Freddie Mac’s Affordable Gold® product is an example] fundamentally changed the lending industry’s view on what borrowers and properties are bankable and what financial terms are prudent” (Listokin and Wyly 1998: 106). In Quercia, et al. (2003), the authors conclude “The recently introduced affordable products which permit the 3 percent down payment to come from non-borrower sources, e.g., Freddie Mac’s Alt 97, has the largest impact on the homeownership propensities of all underserved groups, including a 27.1 percent increase in the relative probability of homeownership for young households, a 21 percent increase for blacks, and a 15 percent increase for central city residents” (Quercia, et al. 2003: 29).

age group in 2001 the average ratio was 48 percent. A similar pattern occurs for the other age groups. This reflects, in part, the increasing financial sophistication of America's families, their response to financial incentives (such as the decline in the after-tax cost of mortgage finance relative to consumer finance, a direct result of the Tax Reform Act of 1986), and increases in homeownership. Thus, the increase in aggregate leverage reflects the rise in homeownership and an appropriate use of mortgage credit to restructure household balance sheets and keep financing costs low.²⁷ Since 1990, the aggregate leveraging of the housing stock grew by 1.7 percent per year. Over the next decade, aggregate leverage is projected to grow at a slightly slower pace, at 1.4 to 1.6 percent per year.

Adding the four drivers together

Figure 24 summarizes the effect of each of the four principal drivers of mortgage credit demand and their effect on single-family mortgage debt outstanding over the past decade and projected over 2004-2013. Single-family mortgage debt grew at an annualized rate of 8.6 percent over the past decade. Including multifamily, residential mortgage debt grew at an annualized rate of about 8.4 percent over the past decade, and is anticipated to grow at an 8.25 percent annualized rate through 2013, with an estimated range of likely growth possibilities running from 7 percent to 9.5 percent per year.²⁸ To the extent that supply constraints lead to faster home-value appreciation over the next decade, this will cause a one-for-one increase in mortgage credit demand. Thus, home-value growth at an annualized rate of, say, 6 percent will result in mortgage debt growth in excess of 9 percent, annualized.

²⁷ In Connell, et al.(2003), the authors conclude that the home equity withdrawal has been a rational rebalancing of families' balance sheets, and that aggregate debt-service to disposable income has fallen since the end of 2001.

²⁸ Over 1993 to 2003, the sum of the growth rates of the four principle drivers totals 8.7 percent, or slightly faster than the 8.6 percent growth rate of single-family mortgage debt; the difference reflects other factors that affect mortgage debt growth. Household growth was measured from 1992 to 2002 (Census Table HH-1: "Households by Type: 1940 to Present," Annual Demographic Supplement to the March Current Population Survey); homeownership growth was calculated from 1993 to 2003 (Census Bureau's Housing and Vacancy Survey); home price appreciation was computed from the second quarter of 1993 to the second quarter of 2003 (Freddie Mac's Conventional Mortgage Home Price Index); leverage growth was measured from June 30, 1993 to June 30, 2003 (Federal Reserve Board's Flow of Funds Accounts, Table B.100: "Balance Sheet of Households and Nonprofit Organizations," ratio of household mortgages to value of real estate); and mortgage debt growth was computed from June 30, 1993 to June 30, 2003 (Federal Reserve Board's Flow of Funds Accounts, Table L.217: "Total Mortgages," Home mortgages).

Figure 24
Drivers of Single-family Mortgage Debt Growth

	Actual	Projected, 2004-2013	
	1993-2003	Most Likely	Range
Household growth	1.3%	1.25%	1.1-1.4%
Ownership growth	0.6%	0.50%	0.3-0.6%
Price appreciation	5.3%	5.00%	4.0-6.0%
Leverage growth	1.5%	1.50%	1.4-1.6%
Single-family mortgage debt growth	8.6%	8.25%	7.0-9.5%

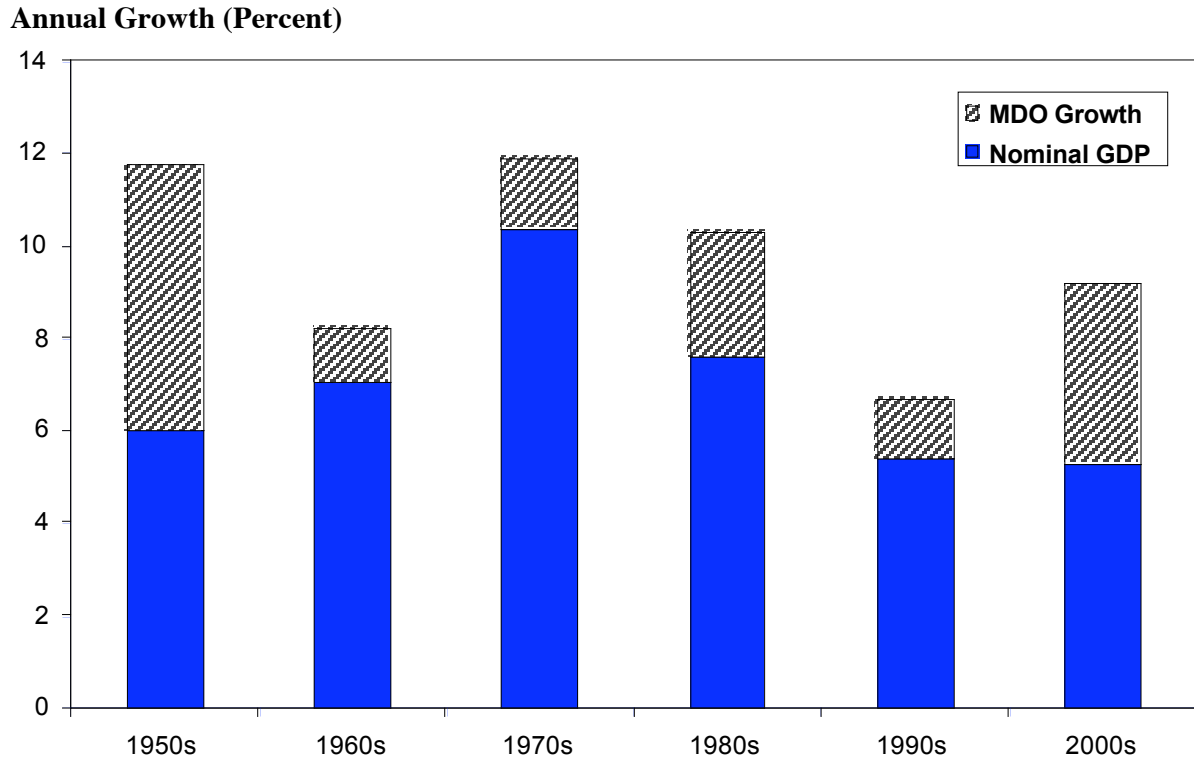
Note: For 1993-2003, the sum of the first four rows is 8.7%; the difference between this and the single-family mortgage debt growth rate of 8.6% reflects other factors that affect debt growth over time. The projected range of single-family mortgage debt growth was rounded to the nearest one-half percent.

Source of 1993-2003 data: U.S. Census Bureau; Freddie Mac, Federal Reserve Board

Regardless where residential mortgage debt growth falls within the 7 to 9.5 percent range, the annualized increase is faster than the projected growth rate of the economy, as has been the case for the past half-century. Between 1950 and 2003, residential mortgage debt grew by 9.9 percent per year while nominal GDP grew by 7.1 percent per year.²⁹ As shown in **Figure 25**, mortgage debt has consistently outgrown nominal GDP in each of the past several decades. Projections of the growth rate of nominal Gross Domestic Product (GDP) through 2013 generally place it near 6 percent, the mid-estimate presented in the last chapter. Thus, mortgage debt is expected to grow approximately two to three percentage points faster than nominal GDP over the next decade, similar to the historical pattern.

²⁹ Nominal GDP was \$0.3 trillion in 1950 and \$11 trillion in 2003, or a 7.1 percent growth rate per year. Residential mortgage debt outstanding averaged \$0.1 trillion during 1950 and averaged \$7.5 trillion during 2003, or a 9.9 percent annualized growth rate (end-of-quarter debt outstanding was averaged for the four quarters of each year).

Figure 25
Mortgage Debt Has Grown Faster than GDP



Source: Bureau of Economic Activity, Federal Reserve Board

Increases in real (that is, inflation-adjusted) family income since 1950 explain some of the differential growth rate between mortgage debt and GDP. Increases in real income lead families to consume more and better quality housing, and increase the desire for ownership. The homeownership rate for families with income at or above the median is generally about 30 percentage points greater than that for families with income below the median; in 2003, the homeownership rates were 83.6 percent and 51.8 percent, respectively, for above- and below-median income families.³⁰ Among families who own, housing expenditures rise steadily with income.³¹ In turn, these economic forces have led to home value growth that has exceeded general consumer price inflation over the past half century. From 1953 to 2003, home values appreciated by 4.7 percent per year, compared with 3.7 percent per year for the non-shelter part of the Consumer Price Index.³²

³⁰ U.S. Census Bureau (2004).

³¹ Economists refer to homeownership as a “normal” good, meaning that consumption of owner-occupied housing increases with income, or that the estimated income elasticity is greater than zero. The Consumer Expenditure Survey for 2001 shows that average annual expenditures on owner dwellings rise steadily with income, from \$1,519 for those with income less than \$10,000 per year, to \$11,035 for households with annual income of \$70,000 or more. Estimated income elasticities are consistently positive; see de Leeuw (1971), Strazheim (1975), and Green and Malpezzi (2003).

³² The average value of the Consumer Price Index (CPI)-Urban Consumers was 26.7 in 1953 and 184.6 in 2003, or a 3.9 percent annualized growth rate. Imbedded within this is home value appreciation; the CPI less shelter averaged 28.5 in 1953 and 174.6 in 2003, or a 3.7 percent annual growth rate. Home value appreciation was measured using

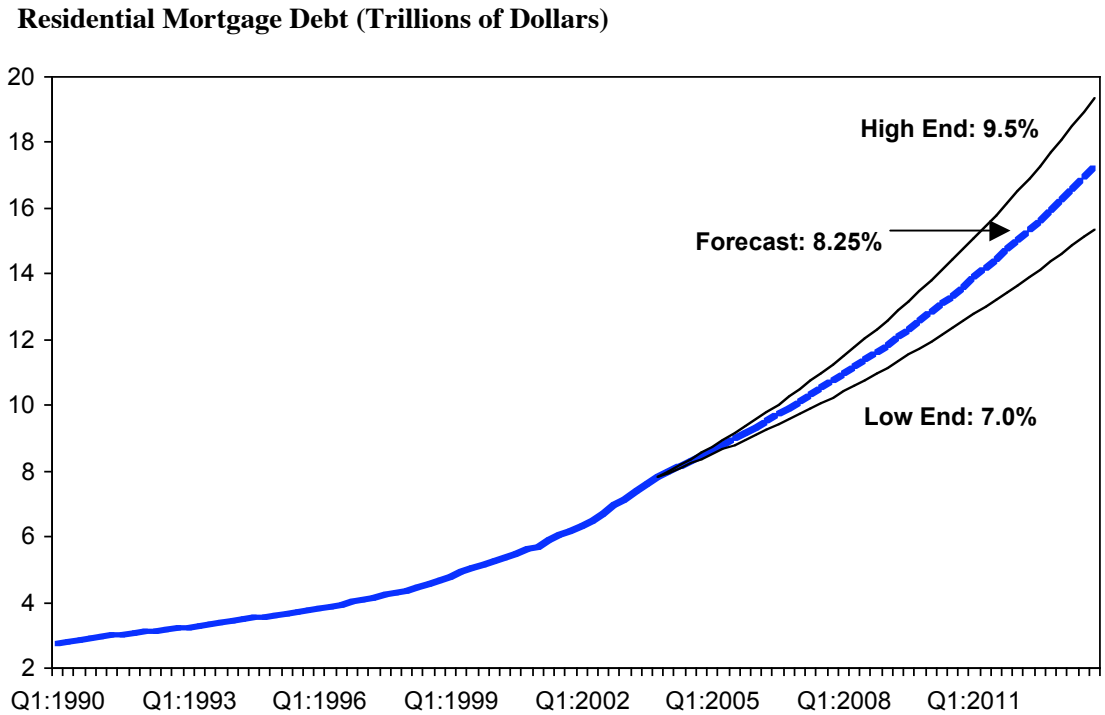
Residential Mortgage Activity More than Doubles by 2013

As of year-end 2003, residential mortgage debt outstanding in the U.S. totaled \$7.8 trillion, consisting of \$7.3 trillion secured by one- to four-family homes and \$0.5 trillion backed by multifamily properties of five or more dwelling units. This amount was more than double the amount of residential mortgage debt outstanding 10 years ago, or \$3.4 trillion as of year-end 1993. Growth of 8 percent per year will lead to a similar increase in debt outstanding, a better than doubling of mortgage debt in the next decade, as shown in **Figure 26**. By the end of 2013, mortgage debt will total \$16.9 trillion with an 8 percent annual increase; a faster growth rate of 9.5 percent per year will place the residential mortgage debt need for America at \$19.4 trillion.

The increase in debt represents the net result of new originations less loan payoffs and amortization of principal. Over 1993-2002, single-family originations totaled \$12.7 trillion, or an average of \$1.3 trillion per year. The origination volumes over the next decade will increase significantly, driven by higher home values, growth in households and the secular rise in mortgage loan turnover. The rise in prepayment speed is summarized in **Figure 27**, which shows the ratio of annual single-family originations to mortgage debt outstanding; over the 1970 to 2003 period, this ratio averaged 0.23, or originations averaged almost one-fourth of the amount of mortgage debt outstanding. The secular increase reflects the increasing financial sophistication of America's families as well as the technology-driven declines in the cost and time to obtain a new mortgage.

the growth in the CPI-Shelter index from 1953-1963, the Census Bureau's new home sales price data for 1963-1970, and Freddie Mac's Conventional Mortgage Home Price Index for 1970-2003.

Figure 26
Residential Mortgage Debt More Than Doubles by 2013



Source of 1990-2003 data: Federal Reserve Board

The bulk of originations over the past decade—61 percent—supported home purchases, while the remaining 39 percent were refinance originations, primarily enabling families to take advantage of declining interest rates to lower their monthly payments or obtain a shorter loan term. Over that decade, 46.4 million previously owned, one-family houses and 8.1 million newly built, one-family houses were sold. In addition, there were another six million condominium and cooperative apartments that were purchased, bringing the overall single-family sales market to more than 60 million homes.

Assuming house price growth of 5 percent per year, new originations are forecast to total \$27 trillion over 2004-2013, or about twice the dollar volume of 1993-2002.³³ This volume will finance approximately 125 million homes, of which 60 percent are projected to be home purchases and 40 percent are expected to be refinance.³⁴ Including sales of manufactured

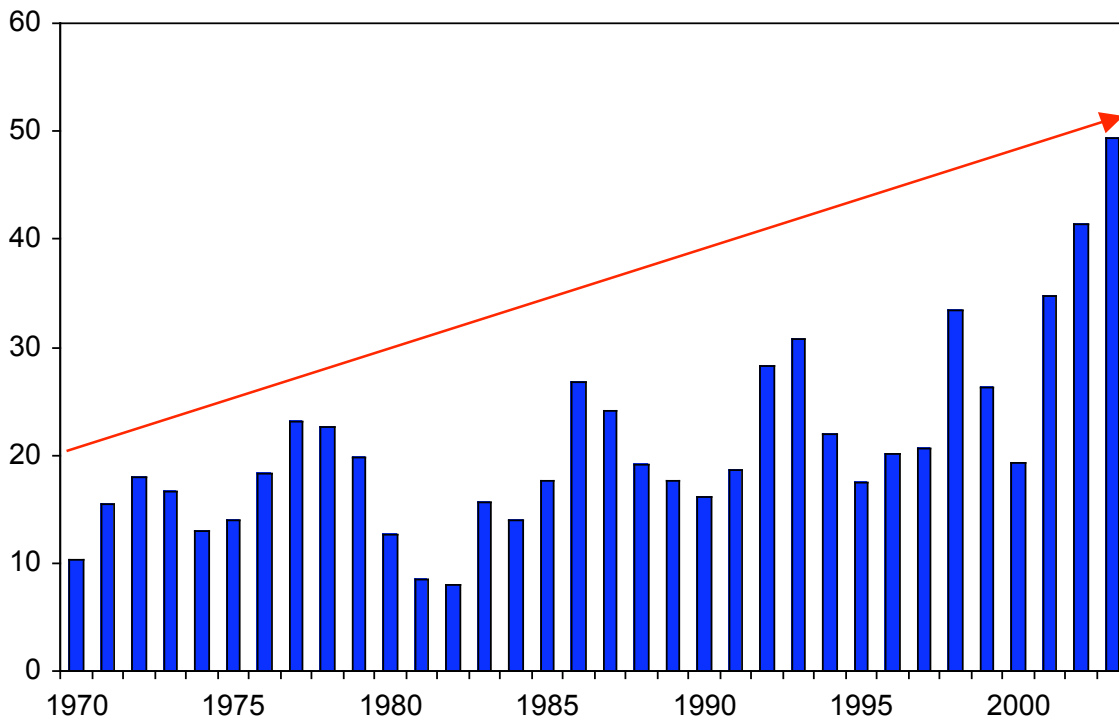
³³ The forecast assumes that annual originations average 25 percent of single-family mortgage debt outstanding, or slightly higher than the 23 percent average over 1970-2003.

³⁴ Approximately 15 percent of homes are purchased without placement of a mortgage, based on American Housing Survey data. Thus, there will be approximately 75 million purchase-money mortgages originated over 2004-2013, consistent with approximately 88 million single-family home sales as shown in the “Housing Demand and Supply” chapter. Over the 1994-2003 decade, sales of previously owned one-family houses totaled 49 million, of previously owned condominiums and cooperatives totaled six million, of newly built one-family houses and condominiums were nine million, and mobile home shipments were three million, for total sales of 67 million over the past decade. Thus, home sales are expected to be about 30 percent higher in aggregate over the 2004-2013 decade.

housing, first-time homebuyers will buy 24 million homes over the next decade.³⁵ Faster house price growth would cause even higher origination volumes over the next decade, as would volatile mortgage rates because it would trigger larger and more frequent refinance waves. For example, home-value growth that is one percentage point faster than the base case would boost 10-year single-family mortgage originations to \$30 trillion and increase residential mortgage debt outstanding to \$19 trillion by the end of 2013.

Figure 27
Single-Family Loan Turnover Has Increased

New Originations as a Percent of Mortgage Debt Outstanding



Source: Federal Reserve Board, HUD, FFIEC

Mortgage Supply Increasingly Flows From Capital Markets

Applicants for mortgage credit submit their requests to lenders, typically banks, savings institutions or mortgage companies. The market in which families apply for and obtain loans from lenders is referred to as the primary mortgage market. Behind this set of institutions lies a highly sophisticated financing network that taps into global capital markets to channel a steady, reliable flow of funds into the domestic mortgage market at a low cost. Today, the residential mortgage market is seamlessly integrated into the broader capital markets primarily through the

³⁵ In the 2001 AHS, there were 2.3 million recent movers who were first-time homebuyers, which included 0.3 million recent movers who purchased mobile homes. Many mobile home purchases are financed with consumer loans rather than mortgage loans, because some states do not consider mobile homes to be real estate. The 2001 AHS found 1.7 million recent-mover, first-time homebuyers who had a mortgage (excluding mobile home purchasers).

purchase and securitization of loans in the secondary market.³⁶ The secondary market encompasses institutions engaged in buying and selling mortgages and mortgage-related securities. Freddie Mac and Fannie Mae are the linchpins of this dynamic interplay that assures families access to the cheapest and most reliable mortgage credit flow in the world.

During 2002, single-family mortgage originations in the primary market totaled about \$2.7 trillion. Mortgage companies that were subsidiaries of bank or thrift holding companies, commercial banks or savings institutions made 36 percent of these loans. Independent mortgage companies, that is, companies that were unaffiliated with a depository or a bank or thrift holding company, represented 27 percent of the volume. Federally-insured depositories accounted for the rest: Savings institutions made 18 percent, commercial banks 17 percent, and credit unions 2 percent of the loan volume.³⁷ Thus, while most families received a mortgage loan from a mortgage company, close to seven out of 10 loans were made by a bank, savings institution or an affiliate.

Not only do banks and savings institutions continue to play a large role in originating loans for America's families, but they also are the largest investors in mortgage-related assets. However, growth in deposits and Federal Home Loan Bank advances over the past generation would have been insufficient to meet the appetite for mortgage credit by families. Since 1970, total deposits and Federal Home Loan Bank advances at all banks and savings institutions have grown by a factor of nine, from \$0.7 trillion to \$5.8 trillion as of the end of 2003. In contrast, single-family mortgage debt has grown 24-fold over the same time period, from \$0.3 trillion to \$7.3 trillion as of the end of 2003.³⁸

The funds to supply mortgage credit to families come from selling most loans into the secondary market, generally through mortgage-backed securities, such as the securities issued by Freddie Mac and Fannie Mae, or guaranteed by Ginnie Mae. Investors value the credit quality and liquidity of these securities, which are easily valued relative to the underlying mortgage loans. Fannie Mae and Freddie Mac's retained portfolios play an important role as well by expanding the flow of funds into the U.S. mortgage market. These portfolios transform the uncertain cash flows from mortgage-backed securities into more predictable cash flows from debt securities.

During 2002, the volume of single-family loans sold into the secondary market was more than \$2.5 trillion—nearly the same volume as loans originated during the year. Many loans were sold to wholesalers who typically resell the loan to another investor within the same year; wholesalers may also be affiliated with a lender and serve as the secondary market outlet for a loan originator.³⁹ Some loans are placed in mortgage pools and then sold in securitized form into the

³⁶ Federal Home Loan Bank advances also provide access to the global capital markets, albeit smaller in volume than secondary market loan sales.

³⁷ The distribution of originations by lender type was calculated from the 2002 HMDA data using lender type as categorized by the Federal Reserve Board's National Information Center database.

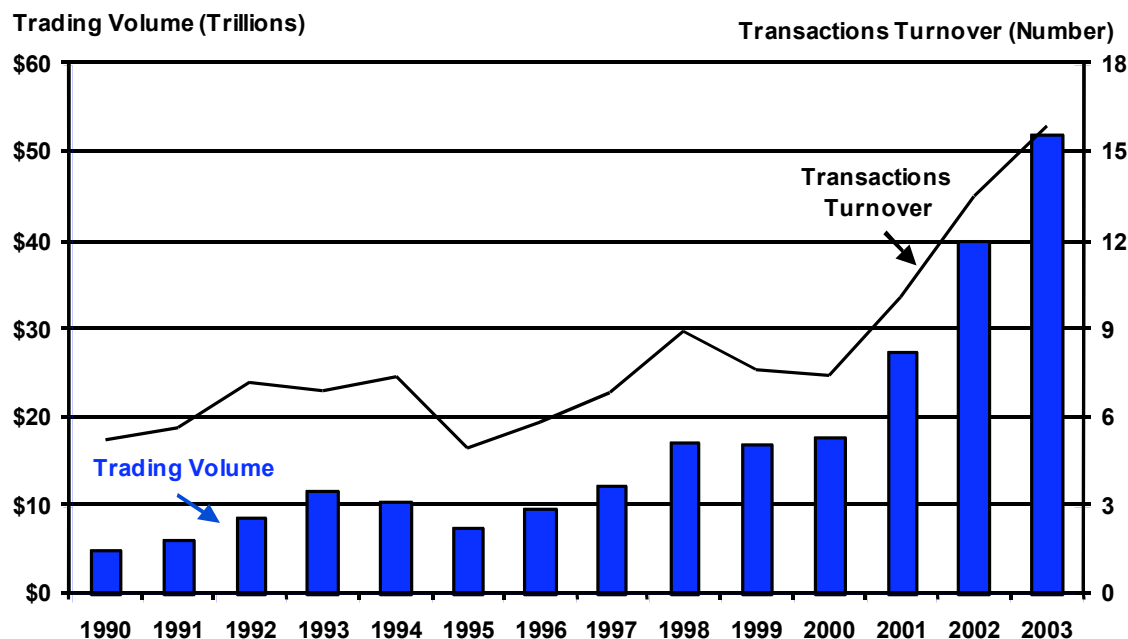
³⁸ Deposits are from the Federal Reserve Board's *Flow of Funds Accounts of the United States*, Tables L109 and L114 and represent the sum of checkable, small time and savings, and large time deposits. Federal Home Loan Bank advances are from Table L125.

³⁹ Total loan sales as reported in the 2002 Home Mortgage Disclosure Act data was \$2.2 trillion. This understates volume for at least two reasons. First, only between 80 and 90 percent of all origination volume is covered. Second, loans originated near the end of the year that are sold at the beginning of the next calendar year are not reported as sold. Adjusting for these two effects indicates that secondary volume sales surpassed \$2.5 trillion during the year.

capital markets. Of new originations during 2002 that were sold within the same calendar year, 42 percent were sold to an affiliate, wholesaler or through an asset-backed security structure; 28 percent were sold to Fannie Mae, 20 percent were sold to Freddie Mac and 10 percent were placed in a Ginnie Mae Mortgage-Backed Security or sold to a commercial bank, savings bank or life insurance company.⁴⁰ In turn, these purchases and security issuances were financed by raising funds from investors in the global capital markets. The depth of these markets provides an ample stream of new funds that flow into our domestic mortgage market, keeping a steady supply of funds and reducing mortgage rates.

⁴⁰ A total of \$2.5 trillion in single-family loan originations were reported for 2002 pursuant to the Home Mortgage Disclosure Act data collection. Of these, \$1.7 trillion was reported as sold during 2002; the percentages reported were based on this volume of sales.

Figure 28
Mortgage Securities Transactions Have Grown



Source: Federal Reserve Board

The heart of the secondary market is the ability to raise funds in the capital markets with a security that is actively traded. Liquidity—the ability to sell an asset very quickly with little or no price concession—is essential to assure an active market with many investors looking to hold the asset. The liquidity of Freddie Mac’s and Fannie Mae’s debt and mortgage pass-through securities enable them to raise funds in the global markets to supply cash to primary market lenders.

The scale of trading in mortgage-backed securities has grown substantially. In 2003 alone, more than \$50 trillion in Freddie Mac, Fannie Mae and Ginnie Mae mortgage-backed securities were traded in the U.S., as shown in **Figure 28**, or a record \$200 billion per business day.⁴¹ Relative to the amount of these securities outstanding, this means that the average Freddie Mac, Fannie Mae and Ginnie Mae security traded 16 times over the course of the year, or about once every three and a quarter weeks. An active trading volume assures a liquid security and a steady source of funds flowing from Wall Street to Main Street.

⁴¹ Transaction volume represent activity in the market by the primary U.S. government securities dealers reporting to the Federal Reserve Bank of New York (<http://www.newyorkfed.org/markets/statrel.html>)

Conclusion

Homeownership drives the economy, creating millions of jobs and generating billions of dollars in wages and tax revenues each year. Homeownership plays a crucial role in providing individual financial security for millions of Americans. With homeownership rates at an all-time high of more than 68 percent, the value and importance of owning a home cannot be overstated.

This study takes a long-term look at the industry and provides forecasts for the next 10 years, including:

- Robust demand will require the production of about two million new housing units per year.
- The national homeownership rate will rise above today's record level and most likely will exceed 70 percent by 2013.
- Home price appreciation should average around 5 percent a year from 2004-2013 but could be above 6 percent if supply constraints continue to tighten.
- Mortgage originations are projected to average nearly \$3 trillion per year, and residential mortgage debt is projected to grow close to an 8.25 percent annualized rate.

The forecasts in this report envision that the current housing finance policy structure will remain intact.

The Homeownership Alliance believes every family in America should have the opportunity to own a home. Despite record high homeownership rates in the United States, millions are striving to reach the American dream of homeownership. Efforts must be expanded to increase homeownership opportunities. To ensure more Americans can realize the American dream and become homeowners, policy-makers should ensure that the United States continues to have the most efficient, cost-effective housing finance system in the world.

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