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U.S. Housing Trends
Generational Changes and the Outlook to 2050

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Patterns of housing development are poised for dramatic change in the early decades of the 21st century. There are a number of reasons to expect that major trends in U.S. housing markets during the coming half century will differ markedly from those that have dominated recent decades. These include both new patterns of demand and ongoing changes in the housing stock, as well as the unique intersection between supply and demand. Research on long-term housing trends has been greatly underdeveloped, with most attention focused on short-term market behavior and changes in current preferences. However, a body of knowledge has slowly accrued in the subfield known as housing demography and may now be poised for much greater attention given the urgency of impending trends.

On the housing demand side, the inevitable aging and retirement of the large Baby Boom generation, the rise and uncertain future of immigration, and on-going changes in the level and distribution of income will affect how many households there will be in the future and their ability to pay for housing. Less quantifiable but potentially of no less impact on demand are trends in preferences especially among the younger generation. On the supply side, the characteristics and location of the stock of existing housing have evolved from what they were a quarter century ago, posing new constraints as well as opportunities for future development, redevelopment, and reuse. And it seems increasingly possible that rising energy costs and climatic events, along with their associated mitigation measures, could lead to new and different patterns and types of development by mid-century if not sooner. The challenge before us is to examine our knowledge of observable past trends in U.S. housing markets to understand whether, why, and how we should expect them to differ in the coming decades.

A relative lack of research has been conducted about these potentially momentous housing trends, although the early years of the new century have witnessed a stirring of interest. Research to date has either been too short-horizoned or too heavily reliant on sweeping broad assumptions. Among the longest range of housing studies are Berson et. al. (2006) and the Joint Center for Housing Studies (2007), both of which examine the trends in the coming decade and see this as a period of transition during which the effects of the aging of the Baby Boom generation will begin to be felt. However, these analyses stop short of the period when the impacts will be felt with full force. Perhaps the most ambitious study is Nelson's (2006) summary analysis that delves further into the future and projects a major shift in the demand for new development, envisioning a swing away from low density housing over vast areas to much more centralized and compact development. In a widely noted popular article, Leinberger (2008) has linked the Nelson analysis to the conclusion that the suburbs could become future slums. Offering a more focused view that builds on the best known future data—future population and its age structure—Myers and Ryu (2008) examine the geographic (interstate)

differences in age structure and home buying or selling. They find a future oversupply of homes offered for sale by aging Baby Boomers, but they report wide variations between states in the time period when markets will be transformed by the aging of the Baby Boom generation. They also discuss likely responses of housing suppliers, community impacts, and possible mitigation strategies.

The Baby Boomers, indeed, will be the central driving factor in the next three decades, just as they have been in the past. The aging, retirement, relocation, and withdrawal from the housing market of the large generation of Baby Boomers are likely to shape U.S. housing markets and housing trends for decades to come. In this paper we will analyze this process and its foreseeable implications for housing markets based on what we know about today's population, their housing patterns, and the housing life-course of earlier cohorts. The long-term impacts, we will argue, are likely to be profound, leading to breakdown of established norms for housing markets and development and the rise of new ones. By mid-century, however, new generations yet unborn and uncounted will begin to dominate housing markets, the uncertainties multiply, and different analytic approaches are called for.

Total population growth offers only a very crude insight into future development. What will most determine future development patterns is the intersection between growth in specific population segments and the available supply that is attractive to those segments. What has been overlooked by most housing analysts is that growth of homeowners in the oldest age group has the potential effect of accelerating the release of supply on to the market, when the oldest households move to retirement homes or die. An important determinant of the locus of new housing supply has been the extent to which the *existing* housing stock matches or, most importantly, fails to match, the demands of growing numbers of households. Locational and quality submarkets that are in demand in one historical period may be in balance or even in excess supply in another. Both the population and the housing stock are long-lived, varying over time by their growing age and also by their period of birth or construction.

Much greater attention deserves to be paid this correspondence between a *population* of long-lived idiosyncratic households that change through the demographic processes of union formation, fertility, aging, and mortality, and a *stock* of durable and idiosyncratic housing units that are fixed in location but subject, over time, to modification and eventual demolition, comprising a subfield of analysis that has been termed *housing demography* (Myers 1990, Baer 1990). The insights of housing demography are particularly helpful in understanding how past housing trends and tendencies should be expected to change in the coming decades.

Our paper seeks new insights and improved answers to critical questions about long-term trends in U.S. housing markets. Among these questions are:

- How will the growth of the population over age 65—a projected 31 million increase between 2010 and 2030—affect housing markets?
- What impacts if any will the resulting increase in the *ratio* of elderly households to younger households have?
- Will the large stock of houses built in the suburbs during the mid and late 20th century start to show the effects of age, obsolescence and loss rates closer to the older housing stocks in central city and non-metropolitan areas?
- What will be the key nexus between subsectors of major demand increase or loss and existing housing supply, and how will the mismatch of supply and demand potentially shape housing development patterns into mid-century?

- How might key changes in demographics alter this outlook, including changes in retirement patterns (more delayed retirement) or increased immigration?
- What are the spatial implications of the trends that have been identified?

1. HOUSING TRENDS, 2005 TO 2030

A useful starting point for thinking about long-run development trends is provided by Nelson (2004, 2006), who quantifies total future growth in housing demand and stock to 2025 and 2030. Building on the earlier work of Riche (2003) and Masnick, Belsky and Di (2004) on changes in population and households, he projects an increase of 32 million households from 2000 to 2025 and an additional 6.8 million households in 2030, from 105 million in 2000¹. Allowing for additional construction to replace units removed from the housing stock through demolition, conversion or other means, the requirement for new construction from 2000 to 2030, including replacement and vacant units, amounts to 58.9 million housing units. By comparison, 44.6 million units were built during the 25 years between 1980 and 2005.

As a result of increases in the demand for housing as well as commercial and industrial facilities, Nelson projects that “over half of all development on the ground in 2025 will not have existed in 2000, even more important is that by 2025 much of society will have been spatially rearranged.” The spatial reworking he foresees is driven as much by changes in the type and location of housing that will be demanded as by the simple growth.

A. New Preferences for Housing Types?

According to Nelson, the projected need for new units is equally divided between attached units, including apartments, townhouses and condos, and small lot houses (on less than 1/6 acre), with no net increase projected in the need for houses on larger lots. This projection is based on the current imbalance between population *preferences* for housing types relative to the characteristics of existing stock and assumes that this gap will be narrowed by 50 percent by 2025.² This projection, coupled with recent trends in housing prices and preferred locations for development lead Nelson to predict a complete reversal of long-standing trends favoring greater expansion in less dense outer suburbs and exurbs than in urban centers:

...the American dream of owning one's own home may result in millions of senior households living in auto-dependent suburban homes which have lost value compared to smaller homes in more central locations where many of their services will be located.
(Nelson, p. 398)

¹ The 2000 count of 108 million households cited by Nelson (2006, p. 395, Table 2), differs from the definitive census SF1 count of 105.5 million (U.S. Bureau of the Census 2001). We use Nelson's figure for growth but assume consistency with the census count, which implies 137.5 million households in 2025, below the 140 million in Nelson.

² Although Nelson cites pertinent data on projected increases in the elderly population and single-person and childless households who tend to favor attached and small lot housing more than larger households, this information is not factored in to his projection.

Fishman (2006) has declared this reversal a new “fifth migration” that will focus residential growth in coming decades toward the centers, not peripheries, of metropolitan areas, though he is more optimistic about the future of suburbia.³

In fact, after decades of neglect, apartment construction appears to be resurgent in many central cities (Birch, 2002). This is consistent with growing preferences for more compact development that is higher density and more centrally located. The growing belief today is that young adults now have a stronger preference of urban living than their predecessors. Urban universities like Columbia and NYU in New York and USC in Los Angeles enjoyed a dramatic surge in applications during the late 1990s. Christopher Leinberger (2007), a developer, market commentator, and proponent of walkable communities, has suggested that the younger generation was raised on television shows like *Sex in the City*, *Friends*, and *Seinfeld* that portrayed an attractive and exciting quality of urbanism in the 1990s. Despite this preference argument, nonetheless, impartial analysts have concluded that there is scant evidence of any net shift of total or elderly population toward central cities (Englehardt, 2006; Frey, 2007), and the amount of new construction has not been sufficient to indicate a structural shift in the locus of new urban development.

B. Demographic Explanations Put Weight Behind Preferences

We think Nelson and others have placed too great an emphasis on changing preferences as the driver of changing development patterns. Certainly preferences are a factor, but they are embedded in other factors that have more predictable impact. The forces of change are better viewed as a combination of changing demographics and the changing preferences held by specific demographic groups. These two factors work most effectively to shift demand for different types of housing when they work in concert. (As discussed later, changing energy costs and concerns about emissions control also will lead to change, but those factors are less predictable than the demographics.)

As a prime example that is discussed below, the slump during the 1990s in the growth of population in their 20s was a likely cause of the nation-wide downturn in the share of construction that was apartments. The current resurgence of multifamily construction likely reflects the arrival in this age range of larger cohorts whose housing demand created apartment shortages and then spurred new construction. Thus it could be said that the revival of downtown apartment construction was merely responsive to changing demographics of young people. If this trend has not yet accumulated to a readily measured phenomenon, that might be due to offsetting trends of demolition in cities, locational definitions of “central cities”, or other factors.

A second demographic force, the aging of the baby boomers, has been emphasized by other authors and is propelled by a larger generation than young adults. Myers and Gearin (2001) interpreted survey data that showed age groups 55 and older expressed stronger interest in living in attached townhomes than did younger adults age 25-34 (20% compared to 9%). They emphasized that the aging of the Baby Boomers was moving many more people into the high-preference age group. The authors asserted that the townhome preference was a surrogate indicator for a preference for denser, more centrally located and walkable environments.⁴ Myers

³ “The reurbanization of the core will necessarily ease the pressure for expansion at the edge, thus increasing the chances for successful suburban growth management.” (p. 360)

⁴ The interpretation of preference for more compact residential environments was justified by the wording of the question from a national survey in 1999: “Consider the following hypothetical choice: Your income is high enough

and Gearin also surmised that the Boomers' preferences could shift even more strongly toward more such residential environments once successful new developments allowed them to gain greater familiarity with the alternative.

C. How Demographic Change Focuses Development and Leverages Impacts

A further contribution of Myers and Gearin was to emphasize how future development demand is driven by growth at the margin—by the rate of change in specific segments—rather than simply by net increases in total households. A related concept of “tyranny of the minority” has been proposed to emphasize that new construction does not respond to average growth in demand (Myers 2000). Rather, only 1 or 2 percent of all households each year lives in newly constructed units, and it is this small minority that is the clientele served by developers of new housing. (The rest of the population lives in existing units built to the dictates of previous years' consumer minorities.) Myers (2000) proposes that this segment is not representative of the population as a whole and is drawn disproportionately from population groups that are growing faster than the supply segment attractive to them. Conceived in this manner, demographic change has potential to drive major shifts in development patterns if the growing categories in one decade have distinctly different preferences than the growth categories of prior decades.

2. PROJECTIONS OF HOUSEHOLDS TO 2050

All of the foregoing analyses of future housing trends recognize the central role of demographic trends, in particular growth in the numbers and characteristics, size and age, of households, yet none make quantitative projections beyond the year 2030. There is good reason for caution about making longer term projections. Since most of the people who will be old enough to form their own households in 2030 have already been born and since mortality rates are not expected to change sharply, the main unknowns in projected number of households for that year are the increase in adults due to immigration and the fraction of adults who form households. Neither is likely to cause large variations in total household growth.^{5,6} The range of uncertainty in the projected total number of households is therefore relatively narrow.

A. Well-Founded Projections of Households

Not all projections of households are equally well founded. Some of the sources relied upon by Nelson were not the products of extensive research and model development. The work by the Harvard Joint Center is certainly among the most professional, but its projections are not sufficiently long range. As an alternative, Zeng, et.al. (2006) have projected the effects of

to purchase a \$150,000 home. You have two options: buying a \$150,000 townhouse in an urban setting close to public transportation, work and shopping. Or, you could purchase a larger, detached single-family home in a suburban area, with longer commutes to work.”

⁵ Masnick and Di (2003) find that quite large assumed differences in projected levels of immigration (+/- 250 thousand per year) would have only modest (+/- 7 percent) impacts on baseline projected 2000-2020 growth in total number of households. They conclude that “Most of our future household growth over the next two decades will come from people already resident in the United States.”

⁶ Jiang and O'Neill (2007) find that the variations in age-specific headship rates (householders per capita) since 1900 have been modest.

demographic trends on future numbers and composition of U.S. households further into the future in considerable detail. They use a macro-simulation model that projects numbers of various household types based on detailed projections of demographic rates including fertility, mortality, union formation, and divorce. Zeng, et.al.'s analysis extends thirty years further into the future, to 2050, than the most thorough demographic study cited by Nelson.⁷ They address the issue of uncertainty, by providing ranges for each projection. See [Table 1](#).

In 2030 the range of household projections is relatively small: the high and low total numbers of households differ from the mean by only +/-3.5 percent.⁸ As projections are extended further into the future, a growing proportion of the people who will be of household-forming age are yet to be born, their numbers depending on future fertility rates. As a result, the effects of uncertainty multiply and cumulate, and the range of the projections expands. By 2050, the low and high projections differ by 39.2 million, or +/- 11.4 percent from their mean. Pitkin (2007) and Jiang and O'Neill (2006) report projections of households made with the same macrodemographic model (ProFamy) used by Zeng, et.al. and population assumptions that closely match the Census Bureau's (2000) Medium projection series. The projected number of households is slightly below the midpoint of Zeng et.al.'s projected range, 166.6 million in 2050.

B. Comparison to Nelson's Projections

The 38.8 million increase in the number of occupied housing units roughly projected by Nelson for 2000 to 2030 falls at the lower end of the range of households projected by Zeng et.al. and therefore might be considered conservative, since the estimate of added units should also include an allowance for vacancies and exceed the number of households. The two sets of projections agree on another point that is central to Nelson's argument, that the rapid increase in one-person households is likely to continue for the next several decades. However, the range of projections for specific types of households becomes proportionally larger than the projections of total households. This greater uncertainty reduces the usefulness of these projections as a basis for estimating trends in the detailed mix of housing types and location beyond 2030.

Table 1.

Projected possible ranges of the numbers of U.S. households by type, 2030 and 2050
From Zeng, et. al., (2006)

Year	Number of households (millions)			
	Total	One-person	Married-couple	Age 65+ Living alone
2000	105.2	27.1	57.8	3.6
2030	142.8--153.2	38.3--48.4	61.9--82.6	4.7--5.7
2050	152.8--192.0	43.2--57.0	58.2--107.3	4.2--6.8

⁷ Masnick, Belsky, and Di (2004). Nelson uses a constant persons per-household-ratio, an approximate method, to extrapolate the projection of households to 2030.

⁸ In 2020 the range is, as expected, narrower, +/- 1.6 percent, and the number of households projected by Masnick, Belsky and Di falls in the middle of the range.

3. MACRO TRENDS IN HOUSING 1980 TO 2005

The housing stock should be projected in conjunction with projections of population and households. Given its great durability and also expense of construction, the housing stock cannot change very quickly. In trying to understand future housing trends it is helpful to consider what changes actually occurred over a similar span of time in the past. What were the actual changes in the number and mix of households in the last quarter century? And how has the stock of housing units occupied changed, in number, location, and type of unit? We consider data from the period 1980 to 2005. This will provide perspective as well as insights that can help us to discern probable future housing trends.

A. The Connection of Population Change to Growth in Households

Between 1980 and 2005, the Baby Bust generation, who were age 20 to 39 at the end of the period, formed 29 million new households that accounted for 95 percent of the total increase in households of 30.6 million. (Table 2, first column.) The next largest source of household growth was the Baby Boom generation, many of whom were still in prime household-forming ages

		Age in 2005	Households millions	Population percent decrease from 1980	Population millions
Native born					
	Born before 1905	100 years or older	-5.9	-100%	-9.4
	Born 1905-1924	80 to 99 years	-14.5	-71%	-23.8
	Born 1925-1944	60 to 79 years	-3.4	-14%	-9.9
	Born 1945-1964 <i>Boomers</i>	40 to 59 years	16.1		-3.5
	Born 1965-1984 <i>Busters</i>	20 to 39 years	29.0		16.3
	Born 1985-2004 <i>Echo Boomers</i>	Under 20 years	0.5		77.8
Foreign born					
	Arrived before 1960	45 years or older	-2.5	-70%	-4.8
	Arrived 1960-1979	25 years or older	1.3		-0.6
	Arrived 1980-1999	5 years or older	8.0		19.4
	Arrived 2000-2005	Any age	2.1		8.1
Total					
Net Increases			57.0		121.6
Net Decreases			<u>-26.4</u>		<u>-52.0</u>
Total			30.6		69.7

Households by age / nativity / arrival cohort of householder.
 Source, 1980: 1980 Census PUMS 5% sample.
 Source, 2005: 2005 American Community Survey PUMS file; 2005 population in group quarters estimated from 2000 Census. Numbers of householders and households differ in the American Community Survey; these estimates are consistent with household counts.

during the 1980s and who added more than half as many (16.1 million) households net.⁹ The third largest component of growth in households was the 8 million added by the cohort of foreign-born immigrants who arrived in the U.S. between 1980 and 2005. (In Table 2, 20-year native born generations are delimited by their year of birth while 20-year cohorts of foreign-born immigrants are delimited by their year of entry to the U.S. regardless of age.) In all, six cohorts or generations added households between 1980 and 2005, forming a net total of 57 million more households in 2005 than in 1980.

Over the same period, other cohorts lost households, the largest number lost by the native born cohort born between 1905 and 1924, which formed 14.5 million fewer households at the end of the period. This represented more losses than the other three declining cohorts combined. (Declines are shown in bold in Table 2.) The total net generational decreases (26.4 million) approached the size of the net total change in households (30.6 million).

It is important to understand these generational changes, or flows, because the locations and types of housing units occupied by newly formed households differ from those left by dissolutions. These differences are both idiosyncratic and systematic. Moreover, they set in motion a direct or indirect exchange of existing units among households in different cohorts. This exchange matches households with the stock (supply) of each unit type in each location. Because older cohorts give up units on net and younger or later ones acquire them, it can be described as including a process of *generational filtering* or *succession*.

B. Matching Household Growth to Change in the Housing Stock

A fundamental equilibration must occur between changes in the population and numbers of households and the changes in the housing stock or occupied housing units. Where the numbers of housing units newly occupied exceed the numbers given up, for specific unit types in particular locations, new construction and conversion tend to occur and vacancies to decline. On the other hand, where there are too few households to occupy the stock of existing housing released by declining cohorts, demolition, conversion, other stock losses and new vacancies tend to occur.

We can also compare the changes in the stock of housing through additions and losses for the same period to the changes in population and households. A total of 44.6 million new housing units were added through new construction and another 4.1 million through other means such as conversion from non-residential use and splitting of existing housing units. These gains were offset by removal of 12.8 million units through demolition, damage, and other means, leading to a net increase of 35.9 million housing unit over the 25 year period.¹⁰ See Table 3, top row. The total average loss rate, .5 percent per year, includes mobile homes. Excluding mobile

⁹ These figures are the difference between the numbers of households with householders age 40 to 59 in 2005 and the number with householders age 15 to 34 in 1980. It is a net number in the sense that it reflects the excess of the number of households formed over the number dissolved by Baby Boomers during the period.

¹⁰ Estimates are based on net changes in the housing stock (numbers of housing units) between the 1980 Census (PUMS) and 2005 American Housing Survey (AHS). “Other additions” are cumulative AHS Components of Inventory Change (CINCH) estimates; New construction is from private building permits and mobile home placements; and Total losses are a calculated residual. The cumulative AHS CINCH estimates show substantially less increase in the housing stock (25.4 million units) and correspondingly greater Total losses (19.5 million units) over the 25 year period. Though the AHS-minus-Census estimate of net stock change is subject to error due to any changes in reporting or coverage, these estimates are judged to be more credible than the corresponding CINCH estimates.

Table 3

Components of change in housing inventory, 1980-2005

	Net change		Total losses		New construction		Other additions	
	(thousands of housing units ! Average annual percent of 1993 stock)							
Total	35,888	1.2%	-12,808	-0.5%	44,616	1.4%	4,080	0.2%
<i>Type of structure</i>								
1, detached	22,999	1.2%	-2,860	-0.2%	24,904	1.3%	955	0.1%
1, attached	2,066	1.2%	-1,976	-1.6%	3,815	2.0%	227	0.1%
2 to 4	698	0.2%	-2,220	-0.9%	2,120	0.7%	799	0.3%
5 or more	6,074	1.2%	-2,298	-0.5%	7,512	1.4%	860	0.2%
Mobile Home/trailer/other	4,051	1.9%	-3,447	-2.8%	6,266	2.7%	1,233	0.7%
<i>Region</i>								
Northeast	4,169	0.7%	-1,925	-0.4%	5,057	0.8%	1,036	0.2%
Midwest	6,108	0.9%	-2,995	-0.5%	8,201	1.1%	902	0.1%
South	16,898	1.5%	-5,576	-0.6%	21,020	1.8%	1,454	0.2%
West	8,712	1.4%	-2,303	-0.4%	10,338	1.6%	677	0.1%
<i>Metropolitan location</i>								
Inside central cities	5,948	0.7%	-4,029	-0.5%	8,554	0.9%	1,423	0.2%
Suburbs	19,171	1.4%	-5,823	-0.5%	23,668	1.6%	1,326	0.1%
Outside metro areas	10,840	1.5%	-2,950	-0.5%	12,394	1.6%	1,396	0.2%

Net of existing mobile home/trailer units moved in.

Sources:
 Other additions: American Housing Survey Components of Inventory Change (biannual).
 New construction: US Census Bureau, New Privately Owned Housing Units Started, www.census.gov/const/startsan.pdf (as of May 2007); and Placements of New Manufactured Homes,

Net change by Type of structure and Region: 2005 American Housing Survey Components of Inventory Change and 1980 Census (PUMS 5% A-sample).
 Net losses by Type of structure and Region: calculated as residual of Net change - New construction - Other additions.
 Total losses by Metropolitan location: Estimated from loss rates by Type of structure and Housing stock (2000 Census SF3).
 Net change by Metropolitan location: Calculated as sum of Total losses, New construction, and Other additions..

homes, the net loss rate is .4 percent per year, well below the .58 % per year estimated and projected by Nelson (2004). Below, we will argue that higher costs of building materials and demographic trends will tend to reduce loss rates in the future.

Changes in the stock of some particular kinds of units stand out, including relatively large annual increases for 1-family attached units (1.2 percent) and those in the suburbs (1.4 percent) and the slower increase in central city stock (.7 percent per year). Some substantial variations in the rates of change are intercorrelated. The relatively high loss rates in the growing South region, for example, reflects the large presence in the region’s housing stock of mobile homes, which have the highest loss rate of any housing group tallied, and the higher loss rate in central cities than in the suburbs is in part due to the greater average age of the stock of housing in central cities.

C. Impacts on Housing Trends

The net result of these population and housing interactions can be development trends that are explained by many commentators as simply changes in current preferences. A prime example is the shift away from multi-family (apartment) construction in California during the 1990s. Apartment units accounted for 46.1 percent of the units built in California between 1970 and 1980 and 45.1 percent between 1980 and 1990, but apartments amounted to only 25.4 percent of units built during the following decade.¹¹ The puzzle of this decline in apartment construction was that this was a period when planners were highly concerned about affordable housing and fighting urban sprawl, certainly more concerned than in the 1960s when apartments amounted to about 48 percent of construction. Are we to attribute this dramatic decline in apartment construction to changing preferences, namely a loss of consumer interest in apartment living in the 1990s, followed by a supposed rediscovery of love for this more compact lifestyle in recent years?

In fact, the collapse of apartment construction coincided with the arrival of the Baby Bust generation in the ages where occupancy of newly built apartments is highest: The number of 20 to 29 year olds in California fell by approximately 850 thousand between 1990 and 2000. Since then the population of 20 to 29 year olds has started to grow again and, not coincidentally, there are signs of a revival in apartment construction.¹² Although a rival explanation might be that local government regulators decided to restrict apartment construction in the 1990s, that explanation is dispelled by that fact that a similar decline and recovery of multifamily housing was recorded in most states. Because the Baby Bust also was felt nationwide, these shifts can be explained without any change in consumers' preferences.

It is beyond the scope of this study to analyze all demographic changes in the U.S. in this level of detail. However, it is worthwhile to examine the trends surrounding the maturing and aging of the largest generation in U.S. history to date, the generation of Baby Boomers born between 1946 and 1964.

Always the largest cohorts in the housing market, the baby boomers' passage through the life cycle has created a surge in demand in each age bracket they occupied. Their entry into home buying in the 1970s spurred gentrification in cities and construction of starter homes in suburbs. Their subsequent march into middle age was accompanied by rising earnings and larger expenditures for move-up housing.

Frequently described as resembling a pig passing through a python, this large bulge of population has slowly surged through the age structure. For simplicity, here we focus attention on the most relevant adult ages for homeownership by excluding all those age 24 and younger.¹³

¹¹ Source: Residential Construction Authorized by Permits, California, 1970-2000 Source: http://www.dof.ca.gov/HTML/FS_DATA/stat-abs/tables/i3.xls accessed 11/27/02

¹² One way to understand the importance of renters in their 20s is that new construction is supported most often by middle-income or higher tenants. (Low-income tenants of all ages live in apartments, but they cannot pay the rents needed to support private construction.) Families with children usually prefer single-family owner-occupancy, but young people in their 20s often are not married or do not have children. Thus, growth in the population ages 20-29 brings more of the middle class into renting and supports more construction; losses in this age group shrinks the numbers of middle-class tenants because the previous young cohort has moved on to single-family homeownership.

¹³ According to the 2000 census, only 1.4% of owner-occupied homes in the US were headed by a person under age 25. Age 25 is also generally regarded as the lower demarcation of "prime working age," as it reflects a time of secure establishment in employment careers.

After 1970 the leading edge of the Baby Boomers began to cross age 25 and enter the market for homeownership. Seven decades are summarized in Table 4, showing the total growth in the U.S. population each decade and partitioning this between ages 25 to 64 and 65 and older. After the 1960s, a single age group accounts for 40% or more of the growth, as indicated in the table. That age group is occupied by the front half of the Baby Boomers and advances 10 years in each successive decade.

The transition from the 1960s to the 1970s witnessed a sharp acceleration in growth of population aged 25 and older, doubling from 10.6 to 22.9 million growth in adults as the Baby Boom children came of age. Whereas the largest age group in the 1960s was in pre-retirement years, the 1970s were dominated by four times that amount of growth in the 25 to 34 age group, a great many of whom were forming new households and buying homes. This sudden surge in demand drove several housing market trends, spurring new apartment construction, gentrification in cities where young adults congregated, and escalation in house prices in metropolitan areas where supply was slow to expand, whether hampered by topography or regulatory constraints. In subsequent decades the leading edge advanced to progressively older age groups, each time accounting for half or more of the total population growth in that decade. As the cohort grew older and it reached the peak stages of the earnings life cycle, its focus of housing demand shifted to move-up housing for families with older children, or higher amenity housing for empty nesters with mature tastes.

4. HOW BABY BOOMERS (AND OTHER GENERATIONS) WILL SHAPE HOUSING TRENDS TO 2050

Looking ahead to the coming decade, the Boomers’ entry into retirement will be followed by further housing relocation and eventual withdrawal from the housing market. As will be shown, this generation’s impacts on the housing market can be best understood in light of its size *relative* to that of earlier and later cohorts.

TABLE 4 Population Growth Each Decade (millions)

	Total 25+	Ages 25-64	Ages 65+	Dominant Age Group		
				Age Group	Growth	% of Total
1960-70	10.6	7.1	3.4	55-64	3.1	28.9
1970-80	22.9	17.3	5.6	25-34	12.1	53.0
1980-90	25.1	19.6	5.5	35-44	12.0	47.7
1990-00	24.0	20.2	3.8	45-54	12.8	53.5
2000-10	21.4	16.3	5.2	55-64	11.8	54.8
2010-20	22.1	7.8	14.4	65-74	10.5	47.5
2020-30	19.2	2.4	16.8	75-84	8.3	43.4
2030-40	20.1	11.5	8.6	85+	5.8	28.9
2040-50	19.0	12.3	6.7	85+	5.5	28.7

Sources: U.S. Census Bureau (2003a, 2007).

A. National Trends

After 2010 the leading edge of the baby boom cohorts will advance past age 65 and the growth of elderly population will then outweigh population growth of other adults, an unprecedented demographic event in the U.S. In these coming decades the long-accustomed balance between elderly and younger adults will be reversed. This transition is projected to reach a climax in the decade of 2020 to 2030 when the 75-84 year-old age group accounts for 8.3 million of the total increase of 19.2 million adults in the nation. In the same time period, the population of adults between ages 25 and 64 will grow by 2.4 million.

What makes the aging of the baby boomers loom so large is the relatively small size of cohorts that follow. This impact on growth trends across the decades is shown in [Table 5](#), which highlights the passage of four 20-year generations:

- Baby boomers born 1946-64
- Baby busters born 1965-84
- Echo boomers born 1985-2004
- A newbie generation to be born 2005-2024.

TABLE 5 Tracking Generations Passage Through Age Groups, 1960 to 2050

	Born	Age in 2010	Age in 2030	Age in 2050	
Boomers	1946-64	45-64	65-84	85+	
Busters	1965-84	25-44	45-64	65-84	
Echos	1985-2004	5-24	25-44	45-64	
Newbies	2005-2024	--	5-24	25-44	

Increase each decade in 1000s

	25-34	35-44	45-54	55-64	65-74	75-84
1960-70	2,404	-1,071	2,739	3,057		
1970-80	12,106	2,655	-574	3,072		
1980-90	5,787	11,978	2,464	-652		
1990-00	-3,359	7,371	12,845	3,334	284	2,306
2000-10	1,789	-4,033	6,775	11,750	2,879	490
2010-20	3,419	1,695	-3,906	6,546	10,510	2,732
2020-30	-130	3,860	1,981	-3,354	6,167	8,320
2030-40	4820	332	4079	2251	-2477	5268
2040-50	3049	4788	402	4092	2473	-1269

Sources: U.S. Census Bureau (2003a, 2007).

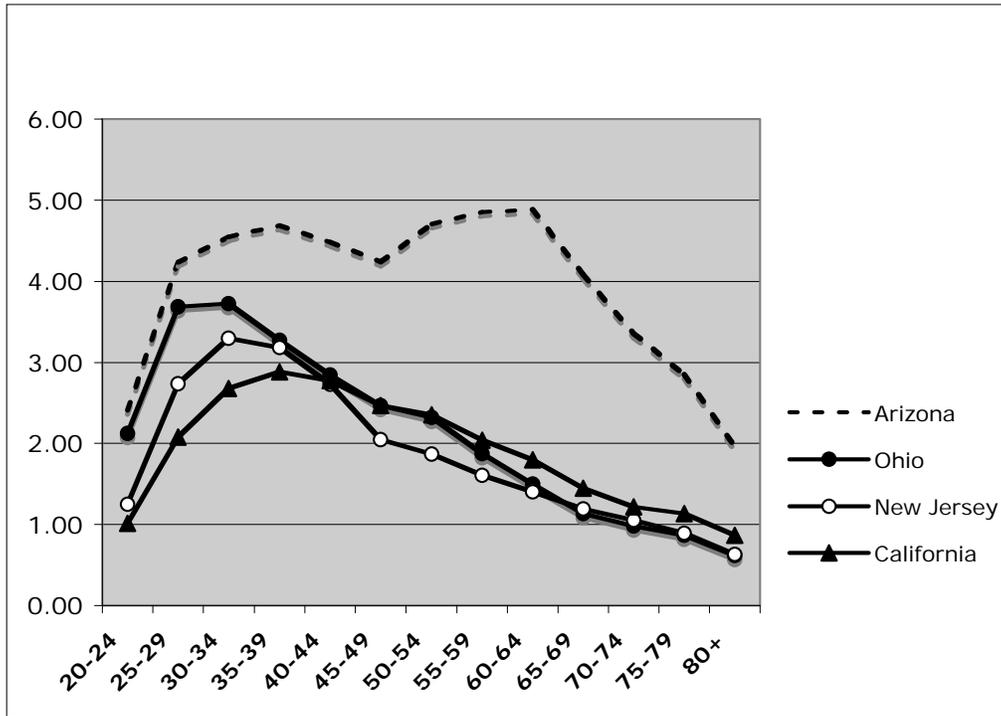
More is known about the boomers than others because they have the longest record in the housing market. The baby busters (also termed Generation X) are less numerous and trail 1 to 20 years behind the boomers. The echo boomers are children of the baby boomers and are more numerous because of their parents' numbers, but lower fertility rates have not created as large a generation as the baby boomers. These echo boomers are only now entering the housing market, and so we do not have a solid grasp of their likely housing behavior. Finally, the "newbies" are just beginning to be born and the size of this generation is still unknown. Our best information comes from Census Bureau projections that apply current fertility rates to the number of women of child-bearing age.

What can be seen from Table 5 is how abruptly the leading edge of the baby boomers jolted numbers upwards when they entered an age group. The second half of the baby boomer generation increased growth even further, although half as much as did the first half. Thereafter, the population numbers declined with entry of the baby busters. Thus, as the baby boomers advanced through their careers they pushed up demand for the kinds of housing attractive to them in that life stage, but in the aftermath demand then fell with arrival of the baby busters. A mild recovery of population numbers is expected to ensue with arrival of the echo boomers, with an even stronger recovery expected with the newbie generation, but that will not occur until 2040.

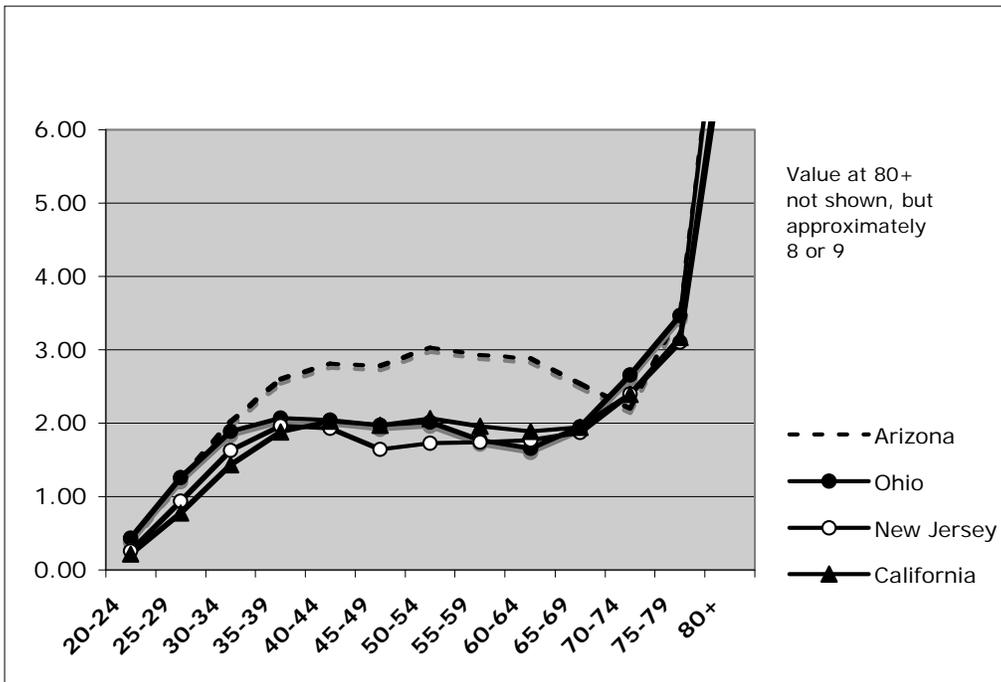
In sum, what is apparent from Tables 4 and 5 is that the baby boomers will dominate changes in housing until at least 2030. It is the boomers' passage into retirement and out of the housing market that will be the driving force of the next decades. Moreover, there is little national variation in this factor. The baby boomers are ubiquitous, and the ratio of old to young adults is expected to grow in every state in the nation. The ratio of seniors to 25-to-64 year-olds is expected to rise by 67% in the nation between 2010 and 2030, and the state with the lowest increase is Oregon, with 55%.

In light of the leveraging effect that this concentration of growth will have (the tyranny of the active consumer minority discussed above), new construction will likely cater to the demands of seniors. At the same time, the sell-off of seniors' former housing creates a potential supply that will potentially exceed younger adults' effective demand. American communities face an historic tipping point in the social make-up and economic base of their housing and neighborhoods. The essence of the problem to be confronted is the disproportionate number of existing homes eventually coming for sale. The exit of the baby boomers from homeownership could have as great impact as their entry, but the consequences would be reversed.

A very recent effort to assess these impacts calculated per capita rates of buying and selling homes for each age group in each state (Myers and Ryu 2008). When applied to population projections available from the Census Bureau, it is possible to project probable numbers of buyers and sellers. Illustrating these rates for four states, [Figure 1](#) shows annual buying and selling rates for Arizona, Ohio, New Jersey and California. After age 65, selling begins to predominate, and given the predominance of the older population relative to the younger, there are expected to be more homes for sale than buyers.



(a)



(b)

FIGURE 1 (a) Per capita annual rates of buying homes; (b) per capita annual rates of selling homes [from Myers and Ryu (2008)].

B. Regional Variations in Generational Change

There is scant precedence for this phenomenon, but we can draw some insights from two of the states that currently have the oldest populations in the U.S.—Florida and Pennsylvania—as well as from two of the nations with the oldest populations in the world—Japan and Italy. Japan has the oldest population of any sizable nation in the world—20 percent age 65 and older—while Italy follows close behind—19 percent age 65 and older. Both these countries have very small average household sizes, in part because the high percentage seniors is attained by having few children present. The total fertility rate in the two countries is among the absolute lowest in the world, 1.2 children per woman (Japan) and 1.3 (Italy). In contrast, the U.S. has a total fertility rate of 2.1 children per woman. In coming decades, the U.S. is expected to retain roughly the same fertility rate, but the aging of the giant baby boom generation has such weight that the proportion age 65 and older in 2030 will reach 19.7 percent, virtually the same as Japan today.

More dramatic are the changes expected in particular states. At present, Florida is the oldest state, with 17.6 percent age 65 and older, and provides one glimpse of our aging future. Pennsylvania is the third oldest state (after West Virginia), with 15.6 percent elderly. By 2030, the two states will have aged considerably, reaching 27.1 percent elderly in Florida and 22.6 percent in Pennsylvania. These will exceed the level in Japan today. Meanwhile, many of the other states will have aged as well, even surpassing the percent elderly found in Florida in 2000. However, there is a crucial difference between Florida and Pennsylvania or other states. From 2000 to 2030, Florida is projected to grow by 79.5 percent while Pennsylvania only grows by 4.0 percent (the U.S. by 26.2 percent). An aging population has very different impacts when the prime working age population is also growing by 57.9 percent, as in Florida, rather than declining by 4.0 percent, as in Pennsylvania. This shrinking population will undermine the state's housing market in the decades ahead, while in Florida's case it may merely reduce new construction below previous levels.¹⁴

5. IMMIGRATION AND HOUSING TRENDS

These predictable patterns of aging are overlaid with additional demand growth from immigration, which appears to be much less predictable. There has been a sustained, substantial increase in the flows of immigrants entering the United States over the past half century, due to a number of reasons,¹⁵ rising from an estimated average net flow of 258 thousand per year in the early 1960s to an annual average net of 1,166 thousand per year between 1997 and 2006. (See [Figure 2](#).) As a result, the foreign-born share of the population more than doubled from its historic observed minimum in 1970 to 13.1% in 2006, and the foreign-born have consistently made up an equal or larger share of U.S. householders. ([Figure 3](#).)

¹⁴ Census Bureau, Interim State Population Projections, File 2, 2005.

¹⁵ Reasons for immigration's increase include changes in laws regulating immigration, relaxed border enforcement, international wage differences, the demand for labor in the U.S., and population growth in Mexico and other source countries.

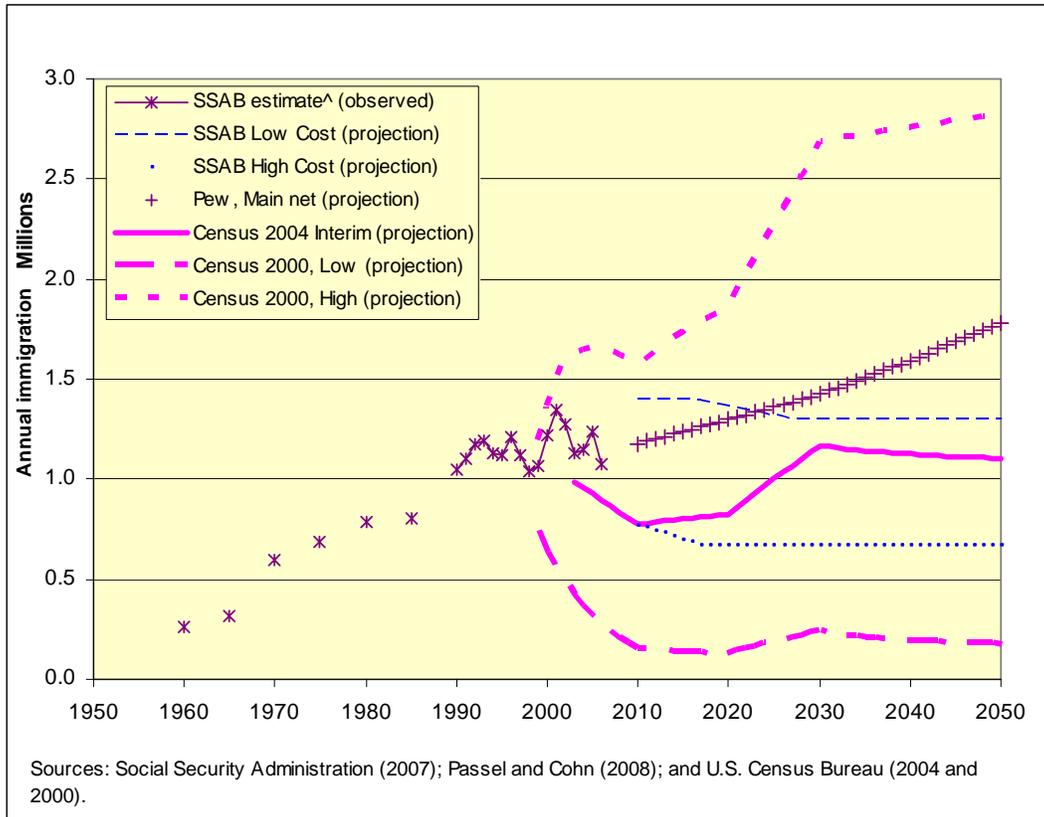


FIGURE 2 Net immigration, 1960–2050.

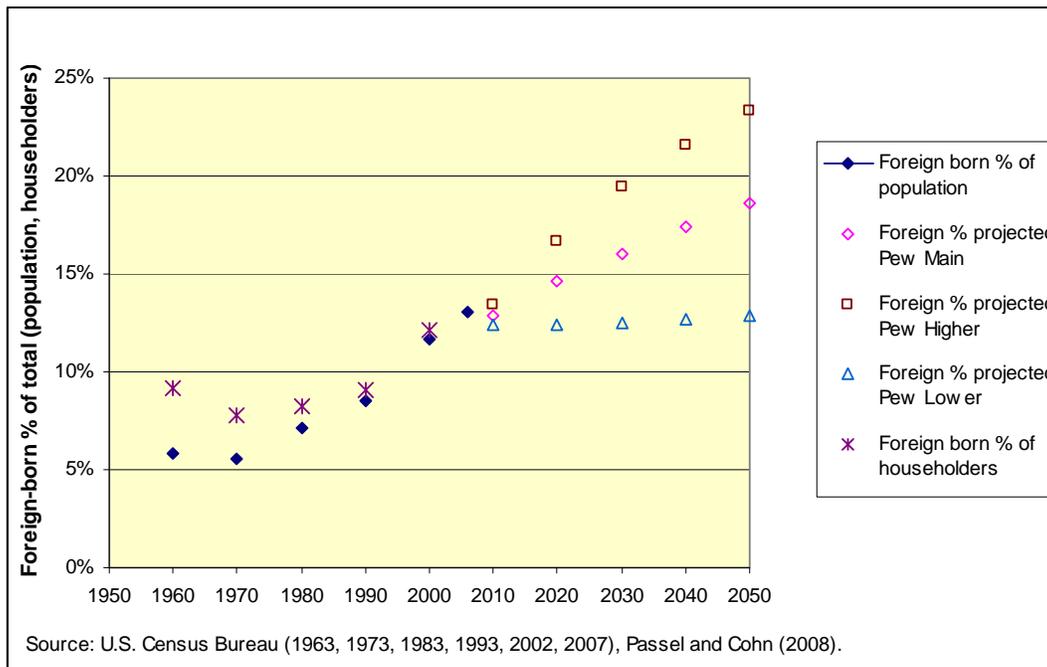


FIGURE 3 Foreign-born population and householders, 1960–2050.

A. Immigrant Contributions to Housing Demand

In fact, in 1960 the foreign-born share of householders and households greatly exceeded the foreign-born share of population, 9.2 percent against 5.8 percent. At that time the foreign-born population was comprised mainly of long-settled and older immigrants who had entered the U.S. before 1930. By 2000, after the stock of foreign-born population had been rejuvenated by growing streams of new immigrants, the difference in the foreign-born shares of households and population declined to 0.6 percent.

The impact on net household formation is seen in immigrants' share of all new entrants to the housing market. New cohorts of immigrants entering the housing market can be measured approximately by net immigration lagged 5 years, and total entrants to the housing market, can be measured approximately by the number of births lagged 25 years plus immigration lagged 5 years.¹⁶

According to this approximate measure, the foreign-born share of new entrants to the housing market increased steadily from 9 percent in 1960 to 25 percent in 2006. (Figure 4.) It is interesting to note that by 1984, the year when peak numbers of the baby boomers were entering the housing market, immigrants already accounted for 16 percent of new entrants. Thus, the maximum Baby Boomer impact on household formation was reinforced by growing numbers of new immigrants.

While substantial changes in both housing demand and housing preferences and patterns of location are already be "in the works" as the result of the arrival, aging, and assimilation of immigrants already in the U.S., continued immigration at recent high levels raises the prospect of even larger changes in future decades.

The housing patterns of households with foreign-born householders are substantially different from those with native-born householders. For example, the foreign-born are much more likely than native-born to live at high densities, in multi-family units, especially those who arrived recently. However, assimilation with increasing duration of U.S. residence substantially reduces these differences by nativity. Figure 5 shows differences by nativity and period of arrival. Note both the monotonic declines in multi-family occupancy with increasing duration in the U.S. and between immigrants and native-born, especially the large drops in multi-family share for 1980-89 arrival cohorts, both Hispanic and Non-Hispanic, between 1990, when they were newly arrived, and 2003 (American Housing Surveys). Similar differences by nativity and duration have been found in the use of public transportation for the journey to work (Myers 1997).

B. Projected Immigration and Impacts on Housing

In order to address potential future impacts of immigration on housing trends we must consider long-term population *projections*, what different assumptions they make about future immigration and what the implications are for the size and composition of the future population and households. Most of our understanding of life cycle changes and generational differences is

¹⁶ This is an approximate measure of central tendency. The mean age of new immigrants on arrival has been in the early 20s. While some form independent households or buy homes immediately, many do not until more than 10 years later. Similarly, 25 years is an approximate average age for household formation and first home purchase by native born cohorts.

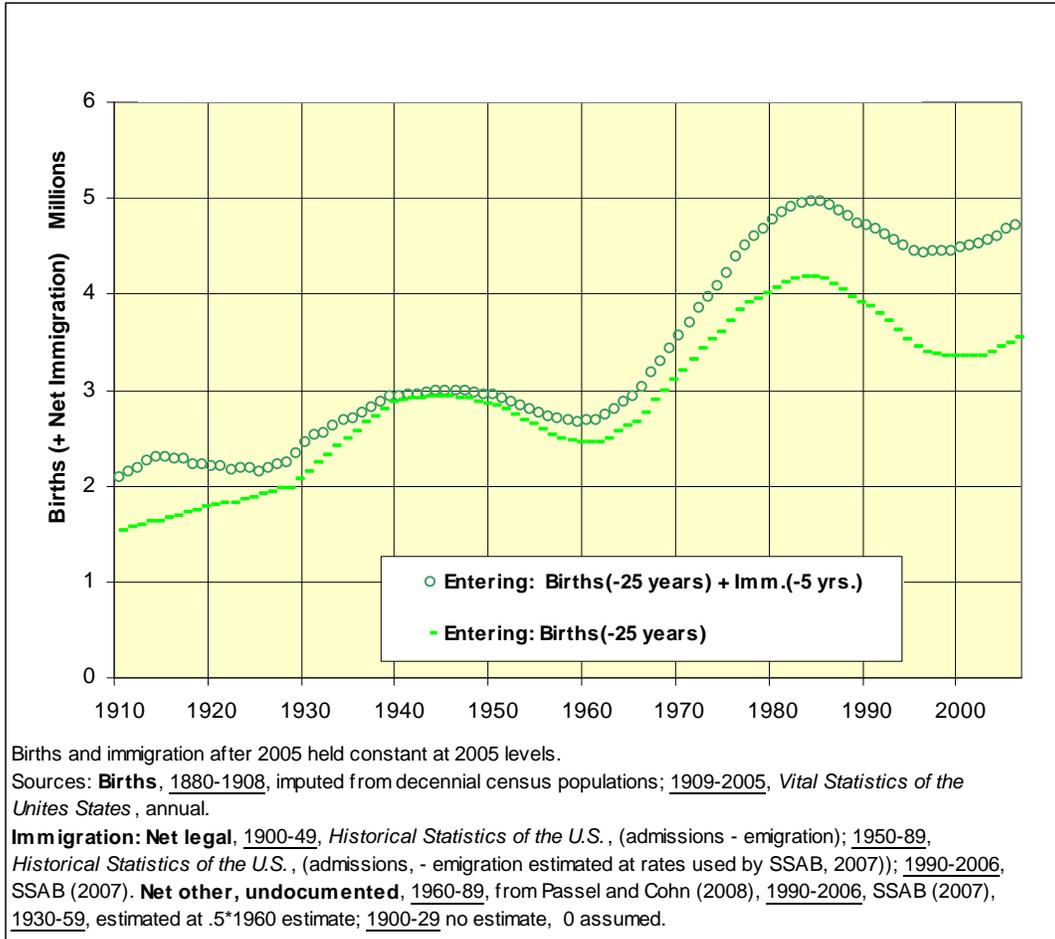


FIGURE 4 Size of cohorts entering housing market, 1910–2040 (11-year annual average).

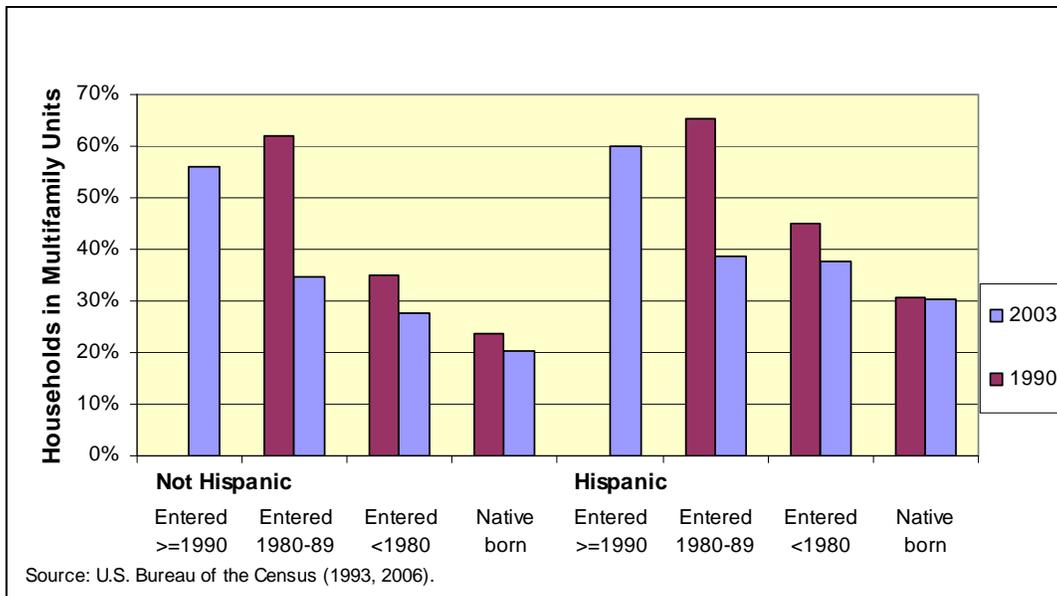


FIGURE 5 Households in multifamily units, by origin and nativity of householder, 1990 and 2003.

based on observations of birth cohorts that are largely comprised of *native born* population. Because the contribution of immigration is increasing so greatly we will also need to consider whether the preferences and incomes of immigrants systematically differ from those of native-born cohorts in ways that affect future choices of either housing types or locations.

Among the more authoritative long-term population *projections* there is not only no consensus about levels of immigration in the distant future, but the range of assumptions about immigration is necessarily wide. The range of projections of immigration for the near future, through 2020, is narrower and centered just below the estimates of recent immigration. These projections are those of the U.S. Census Bureau (2004), Social Security Administration (SSAB, 2007) and the Pew Research Center (Passel and Cohn, 2008). Three other U.S. Census Bureau series (2000) on a 1990 Census population base are also of interest because they separately identify the foreign born population and include separate Low and High variants.¹⁷

Recognizing the uncertainties in the long-range projections (seen in Figure 2), we recommend that the panel focus on a *central range* of population projections, bounded below by the Census Interim series and above by the main Passel-Cohn series, and be aware of an *outer range* of projections bounded by the Census (2000) Low and High series. It should be noted that these projections also incorporate different assumptions about fertility and mortality; however the migration component is by far the largest source of differences for the period of interest. These population projections and the shares of foreign born and Hispanic population in 2030 and 2050 are summarized in Table 6.¹⁸

As we have indicated above, the population's choices of housing types and locations are mediated through households. There are no available projections of foreign-born householders, but the foreign-born share of population provides a benchmark range of 13 to 16 percent in 2030 and 14 to 19 percent in 2050. Historical patterns provide some indication of the implications for numbers of foreign-born householders. In 1960 the foreign-born share of householders greatly exceeded the foreign-born share of population (Figure 3), but the gap has since narrowed and almost disappeared as young, large Hispanic families have succeeded older European immigrants as the dominant foreign-born population segment. As pre-2005 immigrant cohorts age and their

¹⁷ Despite the fairly stable trajectory of five-year average immigration levels since at least the 1965 Immigration Act, there are large differences in the long-term assumptions about future immigration rates in the different central series projections. One alternative assumption, embedded in the Census Interim and SSAB intermediate series is that current policy initiatives in combination with changing demographic conditions in current major source countries will succeed in limiting future inflows moderately below current levels, notwithstanding recent high rates of illegal (undocumented) immigration. In Mexico, a prime example, "fertility registered an average of five children per woman in 1978; then fell to four children in 1985; afterwards decreasing to three children in 1993 until reaching around 2.4 children at the present time." (Tuiran, et.al. 2002) See, e.g., the Census Interim and SSAB range of net projected immigration, Figure 2. A competing assumption, incorporated by Passel and Cohn, responds to repeated previous official underprojections of immigration by assuming that immigration will continue its the long-term average rate relative to the total U.S. population, .0048 per capita per year. By 2030, the resulting immigration levels are well above both recent levels and the highest SSAB variant. (See Figure 2.) Another widely cited shorter-term projection, by the Joint Center for Housing Studies (2006) assumes immigration at 1.2 million per year, a level close to the main Passel and Cohn series.

A further indication of the uncertainties about future immigration is seen in the extremely wide range between high and low variant projections from the same source. Those of the Census Bureau are shown in Figure 2; Passel and Cohn (Pew) use a range of \pm 50 percent. These ranges respond both to the large, albeit continual, increases since the 1960s, on the theory that what goes up might come down, as well as to the historical record of large variations in earlier historical periods.

¹⁸ Different levels of future immigration would have substantial impacts in many areas, including notably on labor markets.

TABLE 6

Population of the United States, by Nativity and Hispanic Origin: 2006 and Projected 2030 and 2050
(In millions except as indicated.)

	2006			2030			2050		
	Population	Foreign Born (%)	Hispanic, Total /3	Population	Foreign Born (%)	Hispanic, Total /3	Population	Foreign Born (%)	Hispanic, Total /3
<i>Observed /1</i>	298.8	12.5%	14.7%	--	--	--	--	--	--
Intermediate range									
Census 2004 Interim /2	--	--	--	363.6	12.8%	20.1%	419.9	13.8%	22.3%
Pew (Passel-Cohn) Main	--	--	--	371.8	16.0%	22.5%	438.2	18.6%	29.2%
Outer range									
Census 2000, Low	--	--	--	311.7	8.7%	18.0%	313.5	7.8%	22.2%
Census 2000, High	--	--	--	409.6	17.9%	21.3%	552.8	20.5%	26.6%

/1. Sources: U.S. Census Bureau, July 1, 2006 estimate; % foreign born from American Community Survey 2006

/2. Foreign-born share inferred from Census 2000 Middle and High series on which the Interim series immigration is based.

/3. Native and foreign-born.

families shed members, we might expect the share of foreign-born householders to rise above the share of foreign-born population, though not nearly by as wide a margin as in 1960, to over 20 % of all householders in 2050.

The one projection of Hispanic householders (in Pitkin 2007) indicates that this group will continue to comprise a slightly smaller share of householders than of population, due to their larger average size of families and households. In 2006 (ACS) they accounted for 10.8 percent of householders and 14.7 percent of the population. However, the difference in shares is likely to narrow as the current cohort of large Latino families ages and is succeeded by those of second and third-generation women with lower average fertility. The share of Hispanic householders implied by the central range of population projections in 2050 is therefore from less than 22.3 percent to less than 29.2 percent.

Choices of type of structure occupied can be expected to be affected by increases in the foreign-born and Hispanic shares of households, as suggested by Figure 5, and effects on metropolitan/central-city/non-metropolitan location can be anticipated as well, based on Figure 7. In combination, these housing and location choices carry strong implications for effects on mode choice, and, therefore, VMT.¹⁹ Recent immigrants who arrived in the U.S. in the previous ten years are about three times as likely to live in multifamily housing as native-born non-Hispanic households. However, this large difference is short-lived, falling by more than half within a decade of entering the U.S.

Smaller but still substantial differentials of about 50 percent greater multifamily occupancy are seen between long-duration foreign-born and the native born population and between native born Hispanics and native born non-Hispanics. These two population groups will increase robustly in both central range projections, so a shift in macro housing and location patterns can be projected. When these differentials are applied to the intermediate range

¹⁹ National Household Transportation Survey could be used to measure differences between Hispanics and non-Hispanics but not differences by nativity or duration of U.S. residence, since this survey does not include immigration status.

population projections (in Table 6), i.e., holding constant the location and structure type profiles at current (2003) rates, they imply an approximate net shift of 2 to 3% of all 2050 households to central city locations, primarily at the expense of rural areas, both non-metropolitan and metropolitan, and a similar 2 to 3% shift of households to multifamily from single-family structures. At most, these projected shifts are equivalent to just over one-tenth of the current 23.6% share of households in multifamily occupancy and up to one-tenth of the current 29.5% of households living in central cities.

6. INCOME AND LOCATION

Two other forces will potentially further modify choices of housing type and location, income growth and changing regional location patterns.

Income growth matters, because Hispanic-non-Hispanic differences in housing types and metropolitan location (see below) appear to be associated with large differences in earnings and incomes rather than to differences in preferences or massive discrimination. There is consensus though not unanimity among studies of immigrant earnings and income that the descendents of the first-wave European immigrants (late 19th and early 20th century) closed most of the original large gaps in educational attainment by the third or fourth generation (Alba, et.al. 2001). However, there is substantial disagreement about whether comparisons of today's first and young second generations with European immigrants 75 years ago are valid (Perlman and Waldinger 1997). The current high incidence of undocumented status may be a substantial, enduring barrier to economic advancement (Portes and Zhou 1993).

Card (2005) concludes from his study of the recent educational progress of immigrants' children (to 2000) that most of the "U.S.-born children [of immigrants] will catch up with the children of natives." Smith (2006) analyzes the generational progress of different race groups from the Census of 1940 forward (including immigrant cohorts born as long ago as the 1860s) and concludes that generational progress of Latinos in education has not lagged substantially behind earlier immigrant groups.

By contrast, based on a detailed longitudinal analysis of high school completion by the cohort of children in high school in 1994-95, Perreira et al. (2006) conclude that the children of immigrants "make significant gains in educational attainment relative to their parents" but that in the third generation these gains stall and are even slightly reversed. This finding suggests that the descendents of Hispanic immigrants will close the gaps in education and, presumably, earnings with the descendents of native-born *Hispanics*, but not with those of native-born non-Hispanics, i.e., the segmented assimilation hypothesis (Portes and Zhou 1993; Rumbaut 1997). Borjas (1994) also finds slow convergence among the descendents of the first wave: "the ethnic differentials introduced...may linger, to some extent...until some 100 years, or four generations, have elapsed since the migration took place."

Alba et al. (2001) conclude that it is too early to know which view is correct. Some attenuation of the Hispanic-non-Hispanic income and housing gaps is possible over the time frame of this study if economic assimilation proceeds rapidly, but at the same time, persistence of gaps for more than 50 years would be consistent with a multi-generational time scale of assimilation (as suggested e.g. by Smith 2006).

Changes in the *regional distribution* of immigration and the foreign-born population may further attenuate macro population shifts to more dense locations. Since 1990, new immigrants,

especially Hispanic immigrants, are locating in the South and Midwest in much greater numbers than previously, and development patterns in these regions are more land intensive than in the Northeast, which was favored before the 1980s, and the West region, the dominant choice of location in the 1980s, where predominant development patterns are comparatively more compact. (See Figure 6.)

However, foreign and native-born Hispanics remain much more likely to locate in central city and other metropolitan areas than non-Hispanics of similar nativity status (Figure 7.), and between 2000 and 2004, 24 percent of the increase in the U.S. foreign-born population was still accounted for by two metropolitan areas, Los Angeles and New York, whose population densities are among the highest (Frey 2006).

7. DISCUSSION OF THE COMING GENERATIONAL SUCCESSION

The foregoing is a summary of relatively well-recognized population trends whose net effect may be appreciable. However, there is another little recognized but foreseeable force that will affect locational choices and patterns in the future, namely generational succession and filtering of the housing stock currently occupied by the baby boom generation. This large cohort, largely non-Hispanic and native born, is disproportionately located in outer suburban and exurban areas (see Figure 6), and their eventual exit from the housing market will unavoidably increase the availability of housing in these areas to successor generations, whether through sale or inheritance.

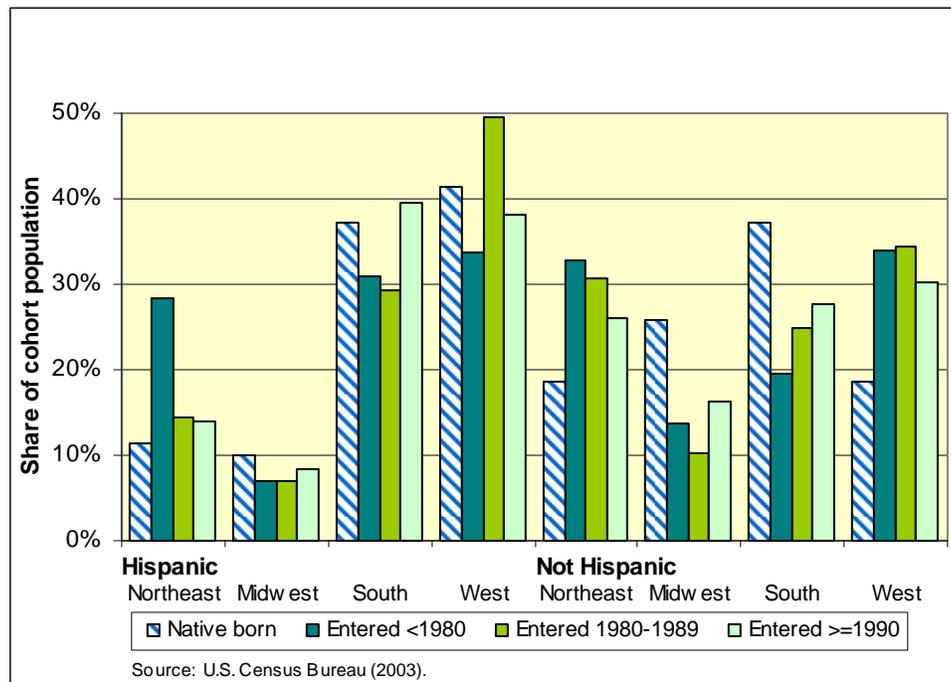


FIGURE 6 Distribution of population among census regions, 2003, by origin, nativity, and period of entry.

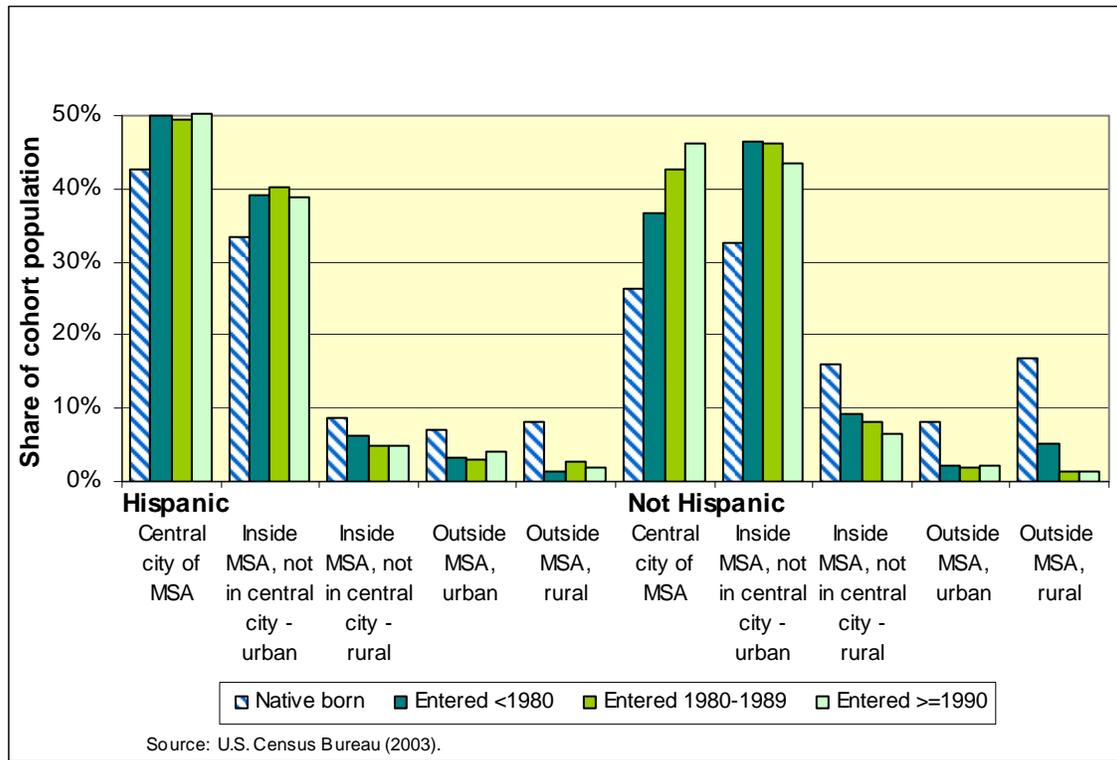


FIGURE 7 Distribution of population among metropolitan locations, 2003, by origin, nativity, and period of entry.

In addition, we may expect impacts of generational change beyond purely demographic effects. Though the largest shifts in tastes and fashions, e.g. for pedestrian-friendly communities and for lower energy costs and greater sustainability, cut across generations, the greatest changes are likely to be *between* generations. These impacts are likely to have cumulative effects but there may also be a tipping point when a new generation becomes the largest source of new market entrants or buyers.

Other drivers of long-term change and sources of uncertainty for future housing and locational choices and trends are climate change, fuel prices, and policies on climate change and energy. Future trends toward higher energy costs could well act to reduce preferred unit sizes and encourage more central locations that reduce the costs of transportation. And we would be closing our eyes to today’s headlines if we failed to mention the possibility that the subprime mortgage crisis and end of the housing price bubble may have long-term repercussions for housing finance and affordability. Yet what may have the broadest implications is the relative shortage of new demand to offset the escalating volume of households leaving the housing market has much broader implications.

These population and housing dynamics are present nationwide, but the growth of population in each age group varies substantially. As a result, we can expect that the relative balance of exiting and entering households will create very different pressures for new housing development. Population projections available at the state level through 2030 provide insight into some important regional differences. Growth is compared for the primary entry-level age bracket

(20-34), a middle age bracket of move-up home seekers (35-64), retirement-age housing adjusters (65-74), and the advanced elderly (75 and older) who will supply homes through their housing exits. (Although immigrants are included in these projections for each state, the data do not break them out separately.) To enable comparison of the 50 states which are of such unequal size, and to calculate a rate of growth, the population change in each bracket is expressed as a percentage of the total number of occupied housing units in the state recorded in 2005. These growth patterns in the 50 states are grouped by broad census region and sorted from highest to lowest rate of growth of entry-level population (see Figure 8 and Table 7).

Substantial losses are anticipated across the Midwest and Northeast in both the entry-level and move-up age brackets. For example, in Ohio, entry-level population will decrease by an amount equal to 4.8% of the number of extant occupied housing units, and move-up population will decrease by another 9.9%, totaling population declines equal to 14.7% of the housing stock. Conversely, there is anticipated to be a 9.1% gain in retirement age population and another 8.0% gain in advanced elderly, totaling population gains equal to 17.1% of the stock. Although these gains appear to roughly offset the losses at younger ages, the older population occupies substantially more housing units per capita (household sizes are lower) and has a higher likelihood of homeownership. Thus, the impacts of growing demand at older ages can substantially outweigh the impacts of declining new households.

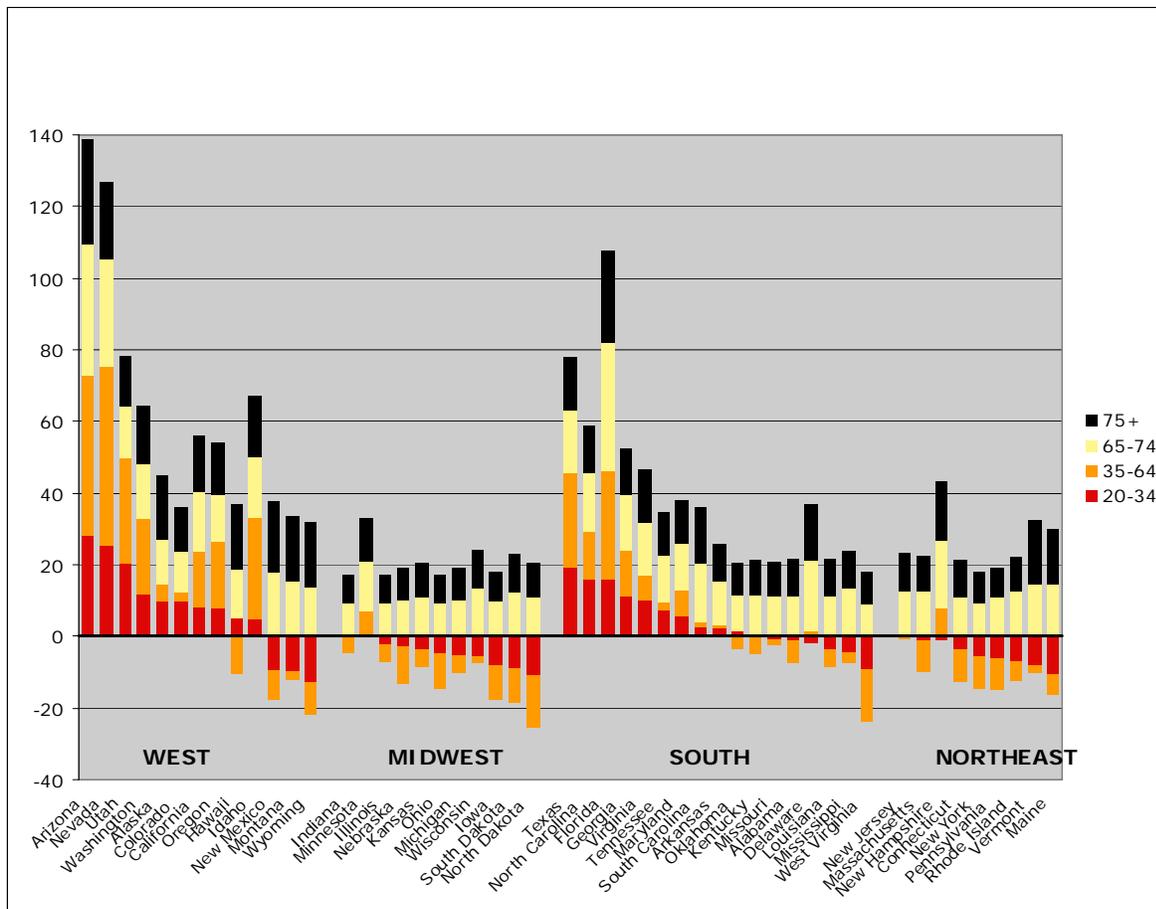


FIGURE 8 Population growth 2010–2030 in each age group as a percent of total housing units occupied in the state in 2005.

Table 7

Population Growth 2010-2030 by Age Group, U.S. and Regions

Growth in Population by Age Group, 2010-30

	Northeast	South	Midwest	West	U.S. Total
20-34	-862,665	3,965,259	-868,573	2,514,120	4,748,141
35-64	-1,455,437	5,020,779	-1,178,229	4,435,738	6,822,851
65-74	2,290,341	7,641,575	2,399,207	4,347,301	16,678,424
75+	1,975,366	6,315,993	2,101,320	4,138,655	14,531,334
Total	1,947,605	22,943,606	2,453,725	15,435,814	42,780,750

Number of Housing Units and Households, 2005 (1000s)

	Northeast	South	Midwest	West	U.S. Total
Units	22,853	49,088	26,028	26,553	124,522
Households	20,583	42,998	23,319	24,192	111,091

Population Growth Relative to Number of Households in 2005, percent

	Northeast	South	Midwest	West	U.S. Total
20-34	-4.19	9.22	-3.72	10.39	4.27
35-64	-7.07	11.68	-5.05	18.34	6.14
65-74	11.13	17.77	10.29	17.97	15.01
75+	9.60	14.69	9.01	17.11	13.08
Total	9.46	53.36	10.52	63.81	38.51

Sources: U.S. Census Bureau 2004 and 2005 American Community Survey

The differential growth by age group carries two major implications. The foremost problem is that the growth is loaded in the oldest age group which is poised to release its housing en masse. When the trickle of housing stock being released by the large Baby Boom generation due to downsizing, moves to retirement facilities, and mortality eventually becomes a flood, the potential for mismatches between the supply and demand of existing units will become widespread, affecting all but the fastest-growing states and metro areas. Analysis of cohort sizes and past exit rates suggests that this will occur soon after 2020 and can destabilize housing markets beyond 2030 and into the middle of the century.

A second implication concerns the systematically different housing preferences of the shrinking numbers of young and growing numbers of old. Close examination is warranted in each state of the types of units typically released by the older, exiting households, and the types of units typically sought by young, entering households. In states with slower overall population growth, large imbalances between the released and desired housing could emerge.

8. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Our central concern addressed by this paper is how and to what degree development trends in the next half century will depart from those of the last. This review has arrived at three broad conclusions.

A. Major Generational Transition Will Remake Housing Markets

In recent speculation about future housing and locational change, we find that too much weight has been given to uncertain changes in preferences and not enough to the more predictable changes in demographics related to housing. Using available data and recent literature, we have sketched the contours of the likely changes ahead, some of which underscore the claims based on preference analysis.

Because of the rise and advancement of the large Baby Boom generation as housing consumers and the somewhat later emergence of the New Immigrant generation as a source of housing demand, since at least 1980 the disproportion between the numbers of younger households demanding housing and the number of older households, either seeking to trade down in the housing market or move to retirement areas, or “supplying” their housing units through dissolution (or death), has had the effect of (1) creating both a sustained upward pressure on housing prices, a generational housing shortage, placing sustained upward pressure on housing prices, and creating a dependable market for new housing construction (which effect occurs in a particular area depends on the elasticity of housing supply) and (2) limiting stock losses through locational or functional obsolescence.

Once the large Baby Boom generation begins to decline in number and scale back its occupancy of housing (starting within 10 years) and immigration flows have leveled off (and possibly decline due to policy changes), *the demographic pressure for price increases and new construction will slacken, and mismatches between housing stock supply and demand will leave substantial portions of the national housing stock subject to increased vacancy, disinvestment, and potential demolition or conversion.*

How households and housing markets will respond to the eventual tidal shift in demographic forces on the housing market we can now only speculate. (The only projected demographic change that might substantially alter it would be a surge in immigration at the upper end of the range of population projections.) In the mean time much might be learned to help guide transportation planners and policy makers to further VMT reduction and other policy objectives. Myers and Ryu (2008) find that some states will soon experience the shift, and their experience can be studied to guide other regions.

B. Substantially Lower Replacement Rates for Housing Are Foreseen

In contrast to estimates by Nelson of a substantial remaking of the housing stock in the coming half century, we foresee lower replacement rates. Our calculation of past rates of housing loss and replacement yield substantially lower rates in the quarter century of 1980 to 2005, approximating 0.4% per year, excluding mobile homes, compared to Nelson’s estimate of 0.6% per year. Looking forward to the next quarter century and beyond, we believe that changing fundamentals will tend to reduce net replacement rates substantially below the recent level. First, higher costs of building materials and reduced capital availability will make the nation’s installed

base of physical capital more valuable and more resistant to being replaced. Second, due to projected rapid increases in one-person households, excess demands for smaller housing units will favor adaptive reuse of existing housing units through conversion (splitting). This is a reversal of the situation in the last quarter century, when trading up by the dominant Baby Boom generation created strong excess demands for larger housing units and raised the rate of demolition (teardown) of smaller, less-desired housing units. Both of these factors will favor reuse rather than wholesale redevelopment or outright abandonment of low-density suburbs. It is reasonable to assume that the average loss rate net of “other additions” will be .2 % per year, which would imply total losses between 2000-2030 of 8.2 million housing units, well below Nelson’s estimate of 20.1 million.

In view of the several recent catastrophic hurricanes, a caveat must be attached to this projection. If severe weather events continue to increase due to climate change, stock losses in the coming decades might be increased above what is otherwise expected.

C. Locational Impacts of Housing Adjustments Depend on Specific Dynamics

It is not possible to describe in general the widespread changes that are likely to result from these specific generational changes and slowing rates of housing replacement. That will depend on unique local dynamics in each supply segment. In general, however, we anticipate less construction targeted for young and middle-aged households. Instead, those households will thrive upon the ample supply of housing being released by the growing numbers of older households that will be exiting the market. This recycling will tend to redirect the young to live in locations currently occupied by the old.

D. A Number of Researchable Issues

This review has identified a number of issues that clearly deserve much more research. Among them are the following:

1. Variations in rates of demographic exit from the housing market over time, adding precision to the national index used here.
2. Variations in rates of demographic exit across states and regions and interactions with migration.
3. Variations in rates of demographic exit across race, origin, and nativity.
4. Impacts of the green architecture revolution and rising energy costs on increased dwelling obsolescence and potential increases in replacement rates.
5. Projections of future households to match the range of population projections with a range of plausible household formation (headship) scenarios.
6. How rates of demographic exit from housing are affected by house prices, financing, income, wealth, housing market conditions and levels of mortgage debt.
7. How rates of demographic exit are affected by elder and healthcare options, costs, and financing.

The critical issue of location cuts across all of these issues: Will future excess vacancies cluster, and, if so, will it be in a particular region or in the outer suburbs?

This list can doubtless be expanded. Some topics would require original research, while others could be studied by collecting the results of relevant research in areas such as migration, mobility, housing finance, real estate economics, urban planning, geography, gerontology, and health care planning and synthesizing their implications for housing exit.

A strong case can be made for conducting some of this research by exploiting methods of the subfield of housing demography. The focus of planning interest is the stage of life when rates of exit for purely demographic reasons, e.g., for care or as the result of a death, far exceed sales or moves for other reasons, and there are strong interactions between the purely demographic events and others that may seem to be caused by preferences, such as moves to live near children or after the death of a spouse. Multi-state life table demographic methods are well suited to making the detailed projections for planning purposes at different geographic levels.

The current situation offers transportation and other planners an opportunity to exercise foresight because of the long lead time and relative precision with which a *societal* need can be foreseen. However, this opportunity carries with it an unusual challenge in that it is one for which there is no true precedent and for which progress may be difficult to measure. That said, planning for “smart reuse” that reduces current and future VMT seems an inherently compelling notion, and there are numerous policy levers that can be used to further such a policy if foresight is exercised, from local zoning and land use planning to provision of home care and transportation and homecare services for the elderly, home finance instruments, and even, potentially, tax incentives, e.g., for “early exit.” Outcomes will be quite different if planning and policy reshape markets (as they did in the New Deal), on the one hand, or if planning remains market-driven, on the other hand.

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