



**Congressional Budget Office**

**Background Paper**

# **The Outlook for Housing Starts, 2009 to 2012**

**November 2008**







# **The Outlook for Housing Starts, 2009 to 2012**

November 2008

---

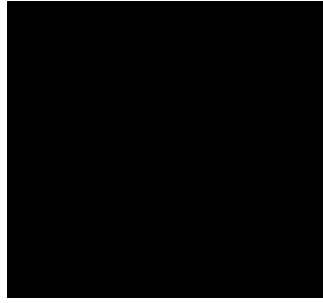
## Notes

Unless otherwise indicated, all years referred to in this report are calendar years.

Numbers in the text and tables may not add up to totals because of rounding.

The figures in this report use shaded vertical bars to indicated periods of recession. (A recession extends from the peak of a business cycle to its trough.)

---



## Preface

The Congressional Budget Office (CBO) is required to prepare economic projections for the Congress twice a year, and the housing market has been—and will continue to be—an important factor in that outlook. Over the past two years, starts of new homes have fallen sharply, and the resulting decline in real residential construction over that period subtracted an average of 1.0 percentage point from the growth rate of real gross domestic product. Looking forward, several alternative paths for residential construction are possible, ranging from a fairly quick turnaround to a severe slump that lasts several years.

This background paper examines the various factors that have determined the number of housing starts in the United States in the past and will continue to determine it in the future. Those factors include the underlying demand for new housing units, especially the role of demographics; cyclical and financial conditions, such as unemployment rates and lending standards; and the number of excess vacant units. CBO expects that housing starts will fall far enough below underlying demand for a long enough period to eliminate the current glut of vacant units and any temporary short-fall of demand due to adverse cyclical and financial conditions; this paper presents three alternative scenarios that could achieve that outcome. In keeping with CBO's mandate to provide objective, nonpartisan analysis, this paper makes no policy recommendations.

Mark Lasky of CBO's Macroeconomic Analysis Division prepared this paper under the supervision of John Peterson and Bob Dennis. David Brauer, Juan Contreras, Douglas Hamilton, Juann Hung, Jonathan Huntley, Kim Kowalewski, Benjamin Page, Frank Russek, and Thomas Woodward provided comments on early drafts. Eric Miller provided research assistance.

Christine Bogusz and Michael Treadway edited the paper, and Sherry Snyder proof-read it. Maureen Costantino prepared the paper for publication. Lenny Skutnik produced the printed copies, Linda Schimmel coordinated the print distribution, and Simone Thomas prepared the electronic versions for CBO's Web site ([www.cbo.gov](http://www.cbo.gov)).

A handwritten signature in black ink, appearing to read "Peter R. Orszag". The signature is fluid and cursive, with the first name "Peter" and last name "Orszag" clearly distinguishable.

Peter R. Orszag  
Director

November 2008

# Contents

---

## **The Underlying Demand for New Housing Units 2**

The Change in the Number of Households Due to  
Population Growth 3

The Change in the Number of Households Due to  
Other Factors 5

Types of Vacant Housing Units 6

Net Scrappage of Existing Housing Units 10

Summing the Factors Determining Underlying Demand for  
New Housing Units 11

## **The Underlying Level of Housing Starts 12**

Placements of New Mobile Homes 12

The Underlying Demand for Completions and Housing Starts 14

## **Cyclical and Financial Influences on Household Formation 15**

### **Excess Vacant Units 16**

The Number of Excess Vacant Units 16

Sources of Excess Vacant Units 18

Will Excess Vacant Units Subtract from Construction? 20

### **Possible Scenarios for Housing Starts 21**

Optimistic Scenario 22

Cyclical Downturn Scenario 22

Pessimistic Scenario 23

## Figures

1.	Housing Starts	2
2.	Household Formation Due to Population Growth	3
3.	Growth of the Population Ages 20 and Over	4
4.	Headship Rates for the Population Ages 44 and Under	6
5.	Headship Rates for the Population Ages 45 and Over	7
6.	Utilized Vacant Housing Units	9
7.	Net Effect of Changes in Headship Rates and Utilized Vacant Units	10
8.	Unutilized Vacant Housing Units	11
9.	Contributions to Growth of the Housing Stock	13
10.	Placements of Mobile Homes for Residential Use	15
11.	Homeowner and Rental Vacancy Rates	17
12.	Vacant Housing Units for Sale and Foreclosure Starts on Subprime Mortgages	19
13.	Actual and Projected Housing Starts	20

## Tables

1.	Vacant Housing Units, by Type, Second Quarter of 2008	8
2.	Housing Units, by Occupancy Status, Selected Years from 1965 to 2008	12
3.	Estimating the Underlying Number of Housing Starts for Selected Years	14
4.	Estimated Housing Starts Under Three Scenarios	21
5.	Number of Excess Housing Units to Be Eliminated by Reduced Construction Under Three Scenarios	22



# The Outlook for Housing Starts, 2009 to 2012

Construction of new homes has fallen sharply over the past two years (see Figure 1). Starts of new housing units peaked at an annual rate of just over 2.1 million in the first quarter of 2006, buoyed by low mortgage interest rates, expectations of continued rapid increases in home prices, and lax lending standards. By the second quarter of 2008, lower expectations of home price increases and tighter lending conditions had combined with a glut of vacant units to cut housing starts by more than half, to an annual rate of barely 1.0 million. The resulting decline in real (inflation-adjusted) residential construction over that period subtracted an average of 1.0 percentage point from the annualized growth rate of real gross domestic product (GDP). Housing starts fell again in the third quarter, to an annual rate of less than 900,000.

The number of housing starts over the next few years will depend on three factors: the underlying demand for new housing units; cyclical and financial conditions, such as unemployment rates and lending standards; and the number of excess vacant units (that is, vacancies exceeding those observed under normal conditions). The Congressional Budget Office (CBO) expects that housing starts will fall far enough below underlying demand for a long enough period to eliminate the current glut of vacant units and adjust to any temporary shortfall of demand due to adverse cyclical and financial conditions. Depending on the number of excess vacant units and the severity of adverse cyclical and financial conditions, several paths are possible, ranging from a fairly quick turnaround to a housing depression that lasts several years. This paper presents three possible scenarios for housing starts:

- An “optimistic” scenario, under which housing starts return to normal underlying levels by the end of 2009;
- A “cyclical downturn” scenario, under which the return to underlying levels does not occur until early 2011; and
- A “pessimistic” scenario, under which the return to underlying levels occurs in the second half of 2012.

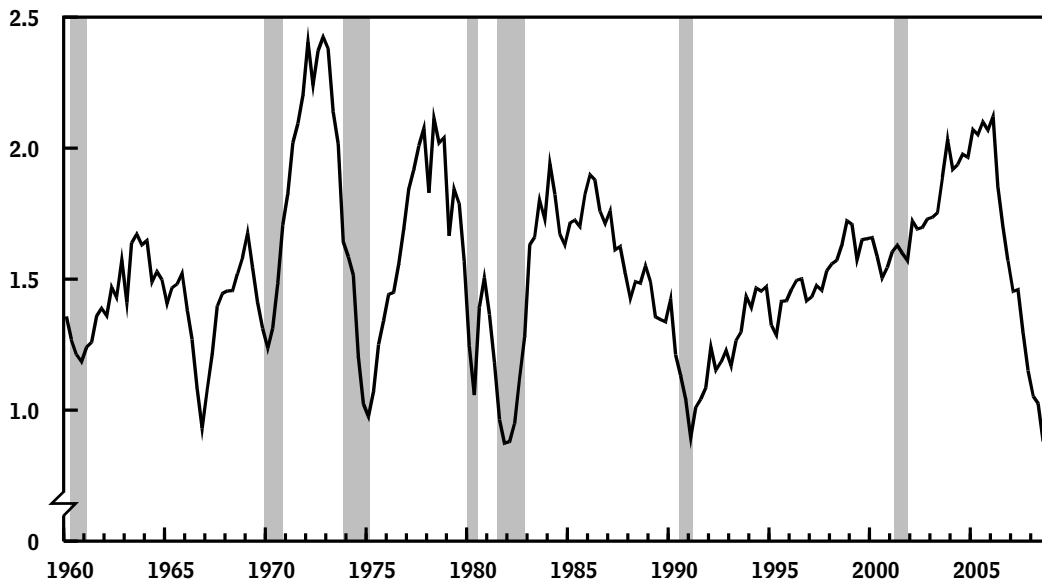
**Figure 1.**

---

## Housing Starts

---

(Millions of units)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are seasonally adjusted annual rates calculated from quarterly data and are plotted through the third quarter of 2008.

---

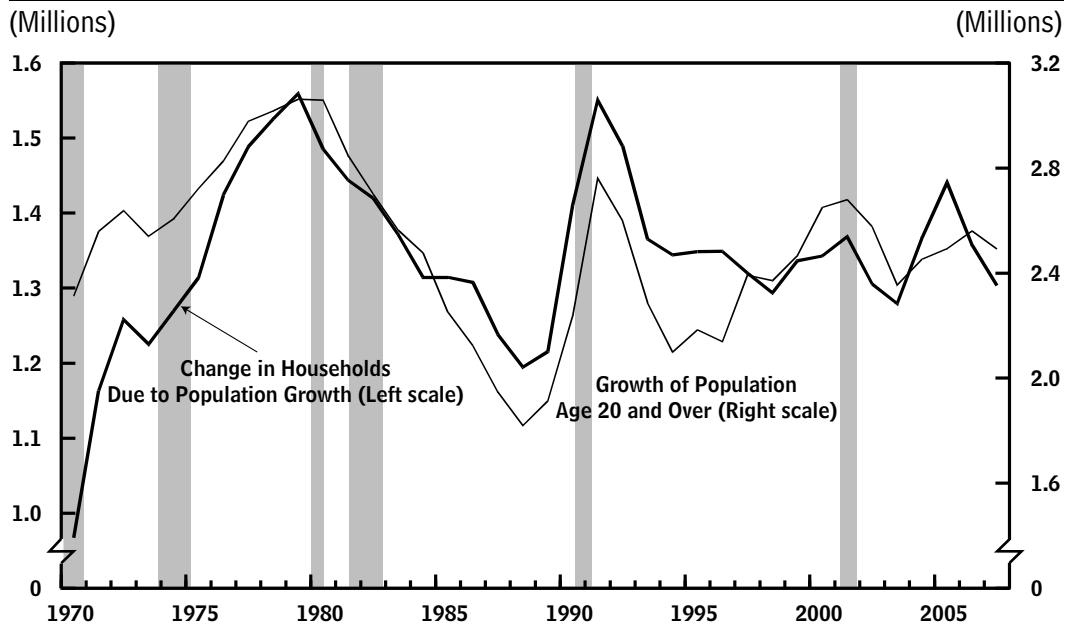
## The Underlying Demand for New Housing Units

The underlying demand for new housing units is the demand that prevails when cyclical and financial conditions are normal and vacancy rates are at long-run levels. Over long periods, that underlying demand is the main factor determining housing starts. It has five components:

- The change in the number of households (that is, occupied units) due to population growth;
- The trend change in the number of households due to other factors;
- The trend change in the number of vacant units for sale or rent;
- The change in the number of other vacant units, such as second homes; and
- The net scrappage (or removal) of existing units.

**Figure 2.**

## Household Formation Due to Population Growth



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are annual and are plotted through 2007.

### The Change in the Number of Households Due to Population Growth

The net change in the number of households can be split into the portion caused by population growth and the portion caused by other factors; the latter is captured by changes in so-called headship rates.<sup>1</sup> For each age group, the change in the number of households due to population growth is the change in the population of that age group multiplied by its headship rate. The change in the number of households due to other factors is the population of the age group multiplied by the change in its headship rate. Population growth accounted for all net household formation between 1967 and 2007. On average, changes in headship rates contributed positively to household formation until about 1980 and negatively after 1990. (The impact of those changes was neutral, on average, between 1980 and 1990.)

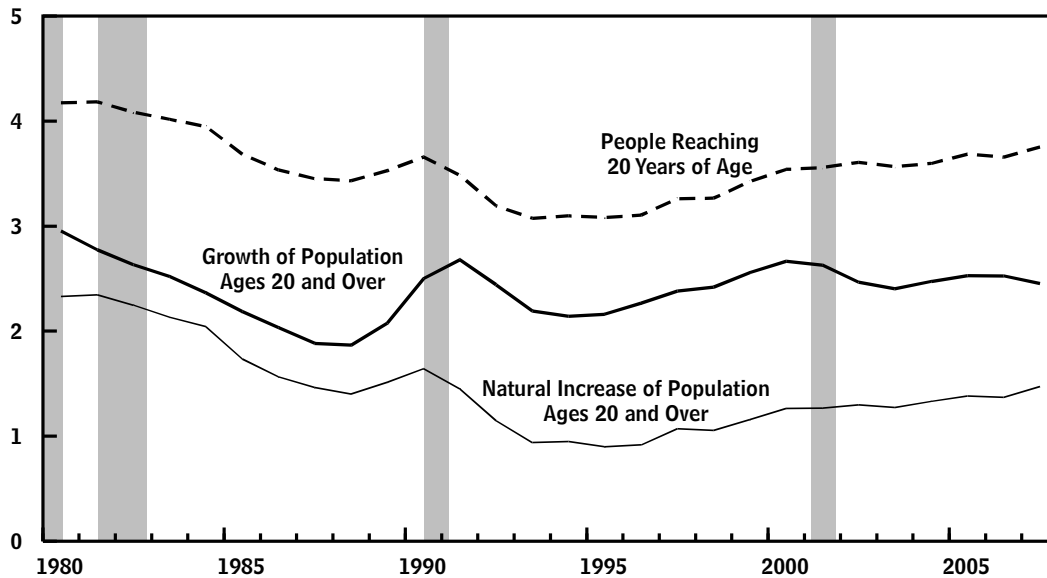
The change in the number of households due to population growth closely parallels the growth of the population ages 20 and over (see Figure 2). The correlation is not

1. A household consists of all people who occupy the same housing unit as their usual residence, whether one person, a family, or a group of unrelated individuals. Each household has one head of household. The headship rate for an age group is the number of heads of households within that age group as a percentage of the number of people in that age group. Higher headship rates imply stronger demand for housing. This analysis uses data from the Census Bureau on the number of housing units and the number of households; CBO adjusted that data for breaks due to revisions and changes in methodology.

**Figure 3.**

## Growth of the Population Ages 20 and Over

(Millions)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census; Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.

Note: Data are annual and are plotted through 2007.

perfect because headship rates vary among different age groups. In general, growth of the population in older age groups contributes more to household formation than does growth of the population in younger age groups. However, growth of the population ages 20 and over as a whole is the single most important factor determining the change in the number of households due to population growth.

Over the past 25 years, the annual change in the number of households due to population growth has trended neither upward nor downward, as a rise in net immigration has offset a decline in the natural increase of the adult population. The natural increase in the population ages 20 and over in a given year is roughly the number of births 20 years earlier minus the number of deaths. The annual number of births in the United States decreased from almost 4.3 million in the early 1960s, during the latter stages of the post-World War II baby boom, to less than 3.2 million in the mid-1970s, before climbing back to about 3.9 million by the late 1980s. That pattern triggered a corresponding decline in the number of Americans turning 20 between the early 1980s and the mid-1990s, followed by a steady increase since then (see Figure 3). The number of people dying each year has risen gradually since 1980, adding to the slowdown of the natural increase in population.

Offsetting that slowdown, net immigration climbed sharply between the 1980s and the 1990s and remains strong in the 2000s, according to population estimates by the Bureau of the Census. (Net immigration of adults can be seen in Figure 3 as the difference between the growth of the adult population and its natural increase.) Net immigration of adults increased from an average of less than 500,000 per year between 1980 and 1989 to an average of nearly 1.3 million per year between 1990 and 1999. After rising to about 1.4 million per year during 2000 and 2001, it fell back to 1.1 million to 1.2 million per year between 2002 and 2006 and 1.0 million in 2007.

Population growth added an average 1.35 million households per year from 2000 to 2006 and 1.30 million more in 2007. If current headship rates by age group remain unchanged, estimates of population growth from the Social Security Administration indicate that that figure will rise somewhat over the next four years, to 1.36 million by 2012.

### **The Change in the Number of Households Due to Other Factors**

Although population growth can explain all of the increase in households over the past 40 years, other factors have also been important over shorter periods. In general, changes in headship rates augmented household formation before 1980 but have restrained household formation since 1990. In addition, the same adverse cyclical and financial conditions that produced housing recessions in the mid-1970s, early 1980s, and early 1990s also slowed household formation during those periods.

Between the mid-1960s and the late 1970s, headship rates rose for every age group (see Figures 4 and 5).<sup>2</sup> That increase probably reflected several factors, including rising real wages and increases in Social Security benefits. In addition, higher divorce rates and a trend toward marrying at a later age during the late 1960s and the 1970s led to higher headship rates but smaller households.

Headship rates have declined since about 1990 for people ages 35 and over, despite a decrease in the percentage of married people in all but the oldest age groups. (Lower mortality among the elderly has increased the chance of both spouses surviving into old age, reducing the number of single-person households and thus headship rates.) The forecast for the trend change in the number of households due to factors other than population growth is discussed below in the section on “Underlying Demand for Utilized Vacant Units.”

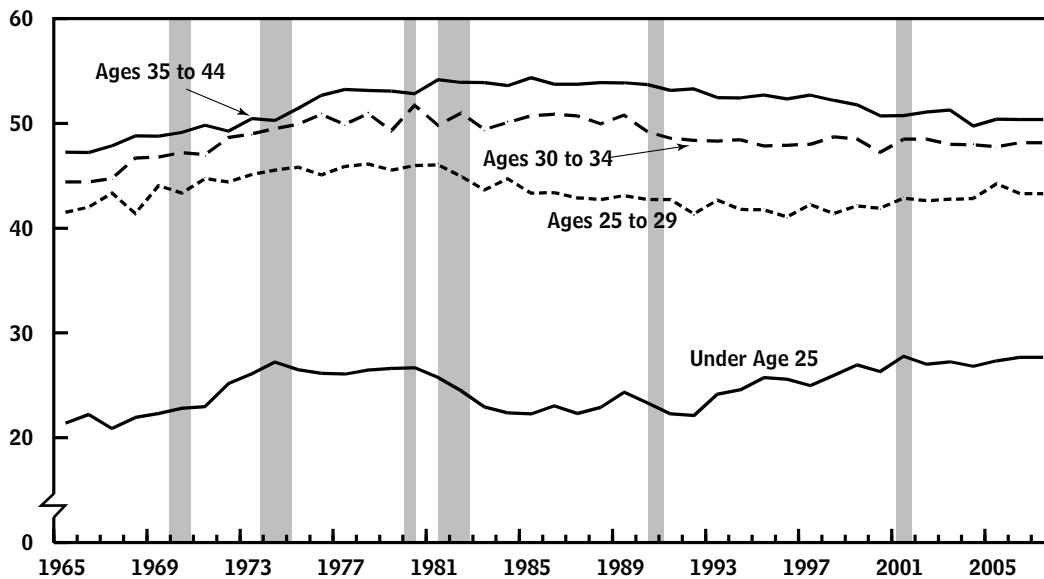
---

2. To adjust for very low headship rates for people under 20 years of age, this analysis calculates the headship rate for people under 25 as heads of households under 25 years of age divided by the population ages 20 to 24 plus 0.15 multiplied by the population ages 16 to 19.

**Figure 4.**

## Headship Rates for the Population Ages 44 and Under

(Percent)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are annual and are plotted through 2007.

### Types of Vacant Housing Units

Vacant housing units can be divided into two broad groups: “utilized” units and “unutilized” units.<sup>3</sup> Utilized vacant units are those that are not occupied year-round but are held off the market for some purpose. Unutilized vacant units are vacant units on the market, whether for rent, sale, or both. The rental and homeowner vacancy rates published by the Census Bureau include only unutilized units.

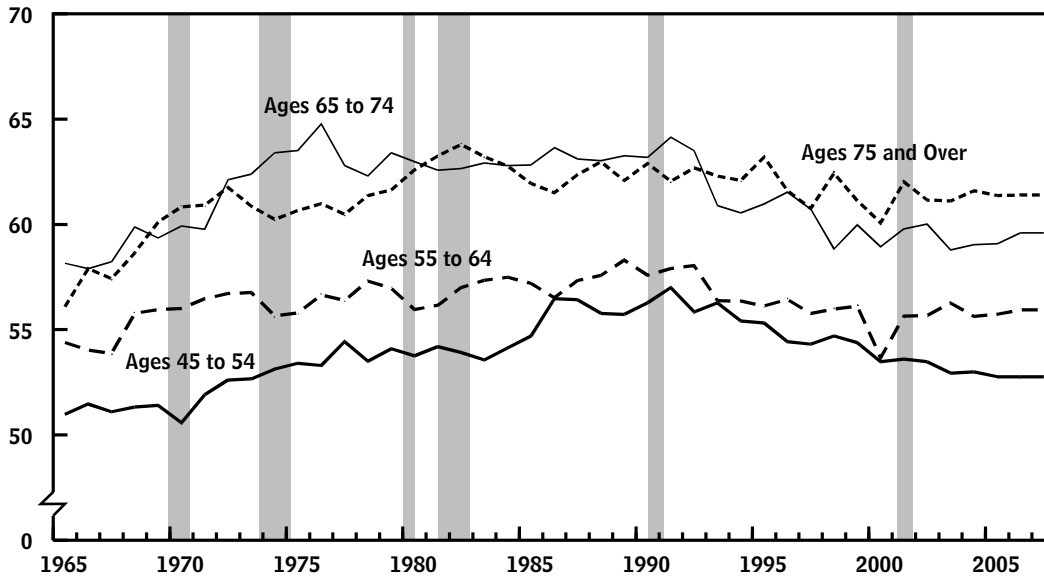
The majority of vacant units (67 percent in the second quarter of 2008; see Table 1) are utilized in some way. The largest category of utilized vacant units is seasonal units—primarily vacation properties but also housing for migratory workers. Seasonal units accounted for about one-fourth of all vacant units in the second quarter of 2008. Various types of other second homes, classified by the Census Bureau as “for occasional use” and “occupied by people with usual residence elsewhere,” make up another 17 percent of all vacant units. About the same number, classified as “other vacant,” are held off the market for various reasons, including occupancy by a caretaker, settlement of an estate, and personal reasons of the owner. Utilized vacant units also include units that have been rented or sold but are awaiting occupancy. Just over one-third of unutilized vacant units (and 12 percent of all vacant units) are for sale

3. Housing units are considered vacant if they are usable but not occupied year-round. Units that have been condemned or have interiors exposed to the elements are not considered part of the housing stock and so are not counted as vacant units.

**Figure 5.**

## Headship Rates for the Population Ages 45 and Over

(Percent)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are annual and are plotted through 2007.

only. The remainder, classified by the Census Bureau as “for rent,” also includes units that are both for rent and for sale.

**Underlying Demand for Utilized Vacant Units.** The share of utilized vacant units in the total housing stock varied around a fairly stable level from the late 1960s until the early 1990s; it has increased steadily since then (see Figure 6). Much of the variation before the early 1990s appears to have been cyclical, with demand for such units rising during economic expansions and contracting during and immediately after recessions. Part of the surge in the number of utilized vacant units since 2006 may actually be units held off the market and used for other purposes because their owners cannot sell them at a price they deem reasonable. If such units are put on the market when conditions improve, they will in fact be excess vacant units that will ultimately subtract from the need for new construction. In addition, utilized vacant units include units tied up in the foreclosure process that have not yet been put back on the market. Such units could also be considered excess vacant units.

From the end of the last housing recession in the early 1990s until the surge in the number of vacant housing units held off the market began in 2006, the positive impact of the upward trend in utilized vacant units on housing demand almost exactly offset the negative impact of the downward trend in headship rates (see Figure 7).<sup>4</sup>

4. Figure 7 shows three-year moving averages because estimates of the number of households can be erratic over shorter periods. For example, the 90 percent confidence interval for growth of households between the first quarter of 2007 and the first quarter of 2008 is 845,000 to 1,295,000.

**Table 1.****Vacant Housing Units, by Type, Second Quarter of 2008**

	Number (Millions)	Percent
<b>Utilized Vacant Units</b>		
Seasonal	4.8	26
For occasional use	2.1	11
Occupied by people with usual residence elsewhere	1.2	6
Rented or sold but awaiting occupancy	1.1	6
Other vacant	<u>3.2</u>	<u>17</u>
Subtotal, Utilized vacant units	12.5	67
<b>Unutilized Vacant Units</b>		
For sale only	2.2	12
For rent	<u>4.0</u>	<u>21</u>
Subtotal, Unutilized vacant units	6.2	33
Total	18.6	100

Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Between 1991 and 2005, the number of utilized vacant units increased by 2.7 million, while declining headship rates reduced growth in the number of households by 2.6 million. It is possible that those two trends are linked, through changes in the distribution of wage income, for example, or through changes in family structure. Whether they are linked or not, it seems reasonable to assume that the two trends will continue to offset each other in the near future. Consequently, this paper's forecast of underlying demand for housing units assumes that trend growth in the number of households from factors other than population growth and trend growth of utilized vacant units sum to zero. (Overall trend growth in the number of households will still be positive, because growth of population will outweigh lower headship rates.)

**Trend Growth of Unutilized Vacant Units.** Just as the unemployment rate remains above zero even when job market conditions are highly favorable, so, too, some housing units will be vacant and for sale or rent even when demand for housing is strong. That frictional level of vacant units for sale or rent during normal housing-market conditions tends to grow with the total number of housing units. That growth is the trend growth of unutilized vacant units and contributes to underlying demand for new housing units.

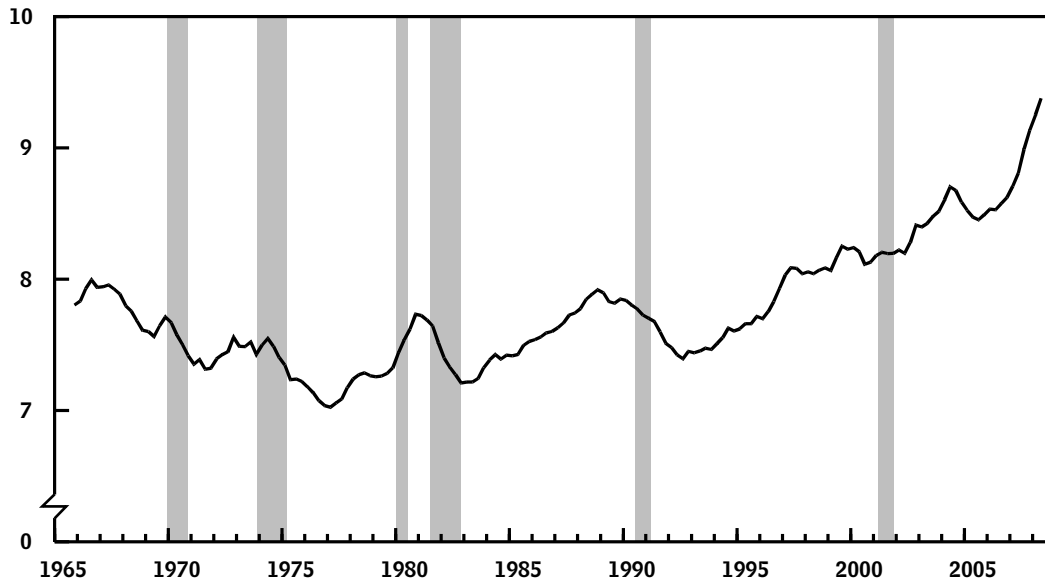
Calculating that trend growth requires an estimate of the number of units that are vacant during normal housing-market conditions. Conditions in the housing market have varied considerably over time, as reflected by the unutilized vacancy rate (see



**Figure 6.**

## Utilized Vacant Housing Units

(Percentage of all housing units)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are four-quarter moving averages and are plotted through the second quarter of 2008.

Figure 8 and Table 2).<sup>5</sup> The failure of construction to keep up with the entry of the baby-boom generation into adulthood pushed the vacancy rate down in the late 1960s. Construction picked up in the 1970s, but vacancy rates remained low until household formation cooled off in the early 1980s. The rental vacancy rate then rose in response to more favorable tax treatment of rental property from 1981 to 1986 and eased somewhat after tax changes removed those incentives in 1987.

Growth of supply and demand appear to have been roughly in balance during the 1990s, as evidenced by a fairly stable vacancy rate and increases in home prices that roughly matched increases in construction costs. During that decade, unutilized vacant units averaged about 3.5 percent of all units. Consequently, trend growth in the number of unutilized vacant units is assumed in this analysis to equal 3.5 percent of the growth of underlying demand for all units, or about 50,000 units per year.<sup>6</sup> After 2000, growth in the number of unutilized vacant units exceeded that measure of

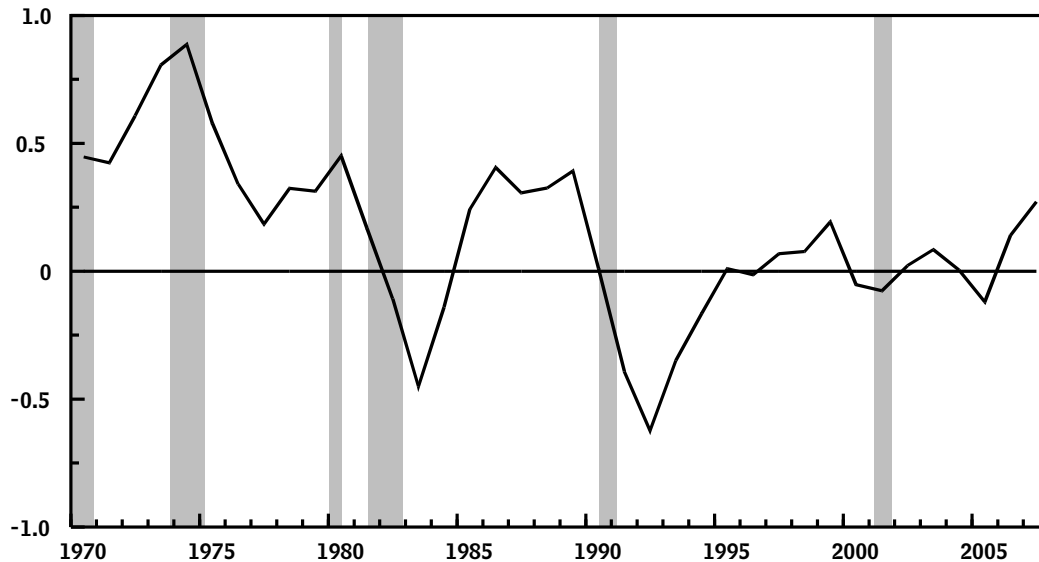
5. The vacancy rate shown in Figure 8 differs slightly from the definition used by the Census Bureau, which divides the number of unutilized vacant units by occupied units plus unutilized vacant units plus units rented or sold but awaiting occupancy. The vacancy rate used in this analysis divides unutilized vacant units by all housing units.

6. Unutilized vacant units are included in both the numerator and denominator in calculating that percentage. Consequently, underlying demand for unutilized vacant units is  $0.035/(1.0-0.035)$ , or about 3.6 percent, of underlying demand for occupied and utilized vacant units.

**Figure 7.**

## Net Effect of Changes in Headship Rates and Utilized Vacant Units

(Millions of housing units)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are three-year moving averages and are plotted through 2007.

underlying demand, as expectations of rapid capital gains enhanced the financial incentive to own homes and rental properties and so boosted the number of housing units relative to the number of households.

### Net Scrappage of Existing Housing Units

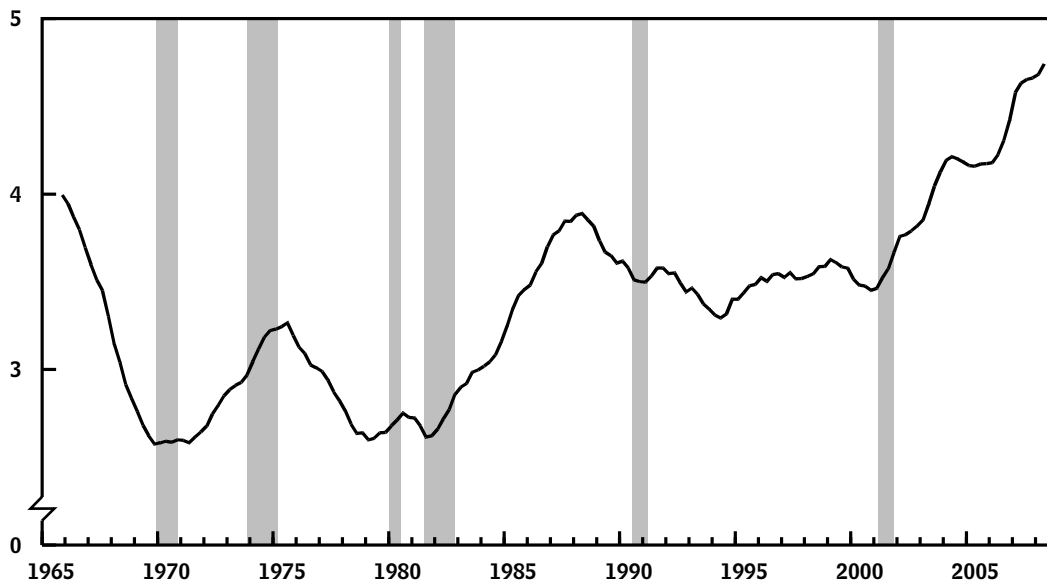
Many housing units are removed, or scrapped, from the housing stock each year through demolition, disaster, dilapidation to the point that the interior is exposed to the elements, or conversion to nonresidential use. At the same time, “negative scrappage” can occur when nonresidential structures, such as schools or commercial buildings, are converted to residential use or when previously condemned structures are rehabilitated.

Net removal of units from the housing stock can be calculated by summing housing completions and placements of mobile homes for residential use and subtracting the change in the housing stock. According to the available data, that net scrappage varies considerably over time, sometimes even becoming negative (see Figure 9), with no apparent cyclical pattern: High removal rates have occurred both in years when housing activity was strong (1973, 1979, 2000) and in years when activity was weak (1981, 1990). Over the short term, estimates of net scrappage are likely to be distorted because of sampling error. (That risk has diminished since a change in survey

**Figure 8.**

## Unutilized Vacant Housing Units

(Percentage of all housing units)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are four-quarter moving averages and are plotted through the second quarter of 2008.

methodology was made in 2003.) To eliminate that volatility, underlying demand for replacement units is calculated using averages of net scrappage over many years.

Underlying demand for replacement units is found by multiplying the stock of homes by the average scrappage rate. In the first quarter of 2008, net removals had averaged 0.19 percent of the existing stock over the previous 10 years. Applying that 0.19 percent average annual rate to the current housing stock of 129 million units implies that about 250,000 new units are needed each year to replace housing units removed from the stock.

### Summing the Factors Determining Underlying Demand for New Housing Units

Underlying demand for new housing units is the sum of the change in the number of households due to population growth, the underlying change in households due to other factors, trend growth of utilized and unutilized vacant units, and net scrappage. That sum is expected to increase moderately over the next four years, from 1.60 million units in 2008 to 1.66 million in 2012 (see Table 3). Increased household formation due to faster population growth will cause most of that increase.

**Table 2.****Housing Units, by Occupancy Status, Selected Years from 1965 to 2008**

	1965	1970	1980	1990	2000	2004	2008 <sup>a</sup>
<b>Number (Millions)</b>							
Occupied	55.8	61.7	78.8	91.1	102.2	106.6	111.0
Vacant							
Utilized	4.9	5.1	6.8	7.9	9.4	10.5	12.3
Unutilized	2.5	1.8	2.4	3.6	4.0	5.1	6.3
For sale only	0.6	0.5	0.8	1.0	1.1	1.3	2.2
For rent	<u>1.9</u>	<u>1.3</u>	<u>1.6</u>	<u>2.6</u>	<u>2.9</u>	<u>3.8</u>	<u>4.0</u>
Subtotal, Vacant	7.5	6.9	9.2	11.5	13.4	15.6	18.6
All Units	63.3	68.6	88.0	102.6	115.6	122.2	129.6
<b>Percent</b>							
Occupied	88.2	90.0	89.5	88.8	88.4	87.2	85.6
Vacant							
Utilized	7.8	7.4	7.7	7.7	8.1	8.6	9.5
Unutilized	4.0	2.6	2.7	3.5	3.5	4.2	4.8
For sale only	0.9	0.7	0.9	1.0	0.9	1.1	1.7
For rent	<u>3.1</u>	<u>1.9</u>	<u>1.8</u>	<u>2.5</u>	<u>2.5</u>	<u>3.1</u>	<u>3.1</u>
Subtotal, Vacant	11.8	10.0	10.5	11.2	11.6	12.8	14.4
All Units	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

a. First two quarters only.

## The Underlying Level of Housing Starts

The underlying level of housing starts yields the number of housing completions necessary to keep the supply of housing units in line with the underlying demand. Translating that demand into the underlying level of housing starts requires two steps: subtracting out the portion of underlying demand for new units that will be satisfied by placements of new mobile homes; and scaling up the result by the proportion of starts that are never completed.

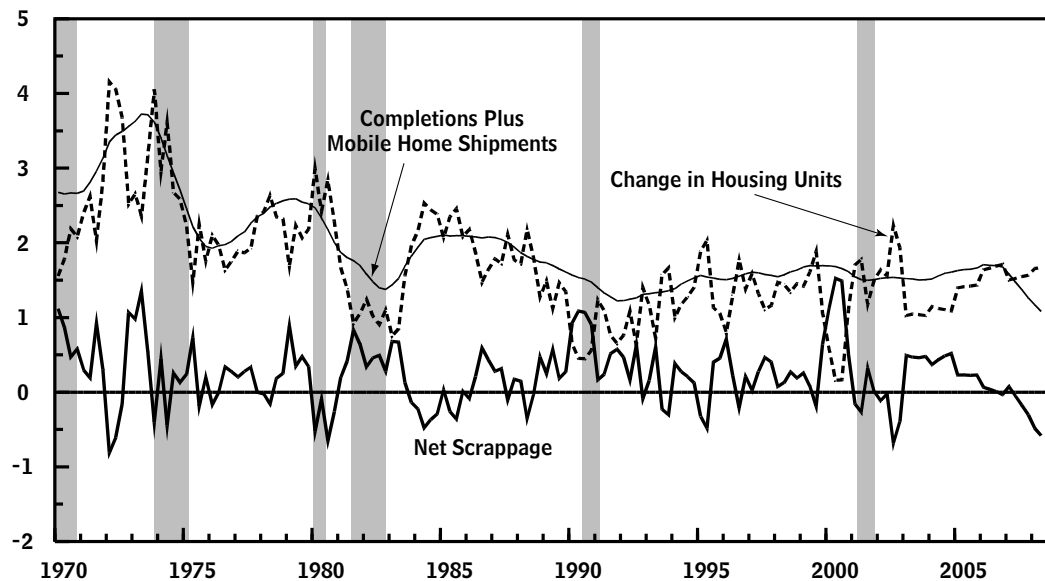
### Placements of New Mobile Homes

The share of mobile homes in all new housing units (placements of mobile homes for residential use plus permanent-site housing completions) declined sharply beginning in 1999, eventually reaching its lowest level in at least 40 years in late 2006 and early

**Figure 9.**

## Contributions to Growth of the Housing Stock

(Percentage of existing stock)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are four-quarter moving averages and are plotted through the second quarter of 2008.

2007 (see Figure 10).<sup>7</sup> A shift in preferences or a different regional distribution of population growth may partly explain that decline. In addition, securitizations of loans for manufactured housing fell sharply after 1999. However, the failure of that market to rebound since then suggests a link with the housing bubble. Some subprime loans for permanent-site single-family homes were undoubtedly made to borrowers who would otherwise have lived in mobile homes.

Placements of mobile homes have continued to decrease since early 2007, but completions of new housing units have declined even faster, resulting in an increase in mobile homes as a share of new housing units. Underlying demand for mobile homes is calculated in this analysis by assuming that the share of mobile homes in the total number of new housing units eventually rises to 8.5 percent, about halfway between the 2001 average of 11.2 percent and the 2007 average of 5.9 percent. That calculation yields underlying demand for about 140,000 new mobile homes per year between 2008 and 2012.

7. Data on placements, as opposed to shipments, of mobile homes for residential use are available only back to 1980. In Figure 10, placements of mobile homes are assumed to equal shipments before that year.

**Table 3.****Estimating the Underlying Number of Housing Starts for Selected Years**

(Millions of units)

	2008	2010	2012
Household Formation Due to Population Growth	1.31	1.34	1.36
Plus: Trend Growth of the Number of Vacant Units for Sale or for Rent	0.05	0.05	0.05
Plus: Net Removals of Existing Units from the Housing Stock	0.24	0.25	0.25
Plus: Underlying Growth of the Number of Units Due to Changes in Headship Rates and Utilized Vacant Units	<u>0</u>	<u>0</u>	<u>0</u>
Equals: Underlying Number of New Housing Units	1.60	1.64	1.66
Minus: Underlying Placements of Mobile Homes for Residential Use	<u>0.14</u>	<u>0.14</u>	<u>0.14</u>
Equals: Underlying Number of Housing Completions	1.47	1.50	1.52
Underlying Number of Housing Starts <sup>a</sup>	1.53	1.56	1.58

Source: Congressional Budget Office.

a. Assumed to equal 104 percent of underlying completions, to allow for units started but never completed.

**The Underlying Demand for Completions and Housing Starts**

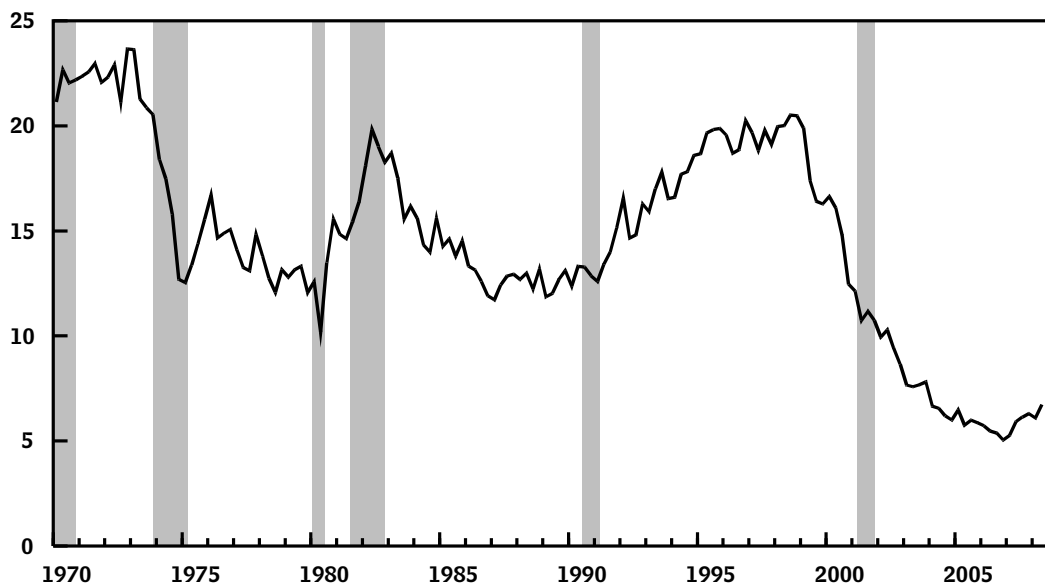
Completions of new permanent-site units satisfy the underlying demand for new units not met by placements of new mobile homes. Excluding the effects of cyclical and financial factors, CBO projects that completions would total 1.47 million in 2008 and rise to 1.52 million in 2012. According to the Census Bureau, 96 percent of units started during the 1999–2004 period were eventually completed. Achieving the desired number of completions thus would require housing starts of 1.53 million in 2008, 1.56 million in 2010, and 1.58 million in 2012.

Several factors could push the actual underlying level of housing starts higher or lower than those estimates. Higher immigration than expected would boost household formation, adding to housing starts, whereas lower immigration would reduce the number of starts. Residential construction would be hurt by decreasing demand for second homes, but it would benefit from higher headship rates. Increased scrappage of existing units would boost housing starts, whereas lower demand for replacements would reduce starts. A bigger-than-expected rebound in demand for mobile homes would subtract from demand for permanent-site units and thus weaken starts, whereas a smaller rebound would increase starts.

**Figure 10.**

## Placements of Mobile Homes for Residential Use

(Percentage of all new housing units)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are quarterly and are plotted through the second quarter of 2008. Before 1980, placements are assumed to equal shipments.

## Cyclical and Financial Influences on Household Formation

Household formation slowed during the housing recessions of the early 1980s and the early 1990s in response to cyclical factors such as high mortgage rates and rising unemployment. Two other factors that slowed household formation in the early 1990s were the tighter standards that banks implemented for residential mortgage loans and expectations of modest growth of home prices. Declines in headship rates relative to their trend level reduced household formation by a cumulative 1.1 million to 1.2 million from 1981 to 1983 and from 1990 to 1992 (see Figure 7 on page 10). Such factors, as well as the impact of foreclosures, will help determine how far housing starts fall below underlying levels in the future.

A decline in headship rates in excess of the downward trend of 1992 to 2005 reduced household formation by almost 400,000 in 2007 and the first half of 2008, more than one-third the total reduction in the two earlier episodes. The recent wave of foreclosures most likely played a role, but the volatility of the data prevents the drawing of firm conclusions. (The biggest quarterly drop in headship rates during the past year and a half occurred in the first quarter of 2007, before the subprime crisis erupted.) To the extent that the recent shortfall in household formation reflects the elimination

of households that were formed only in response to lax lending standards in previous years, the loss of those households will be permanent.

The net impact of foreclosures on household formation is difficult to estimate. A foreclosure reduces the number of households only if the foreclosed unit was occupied and the owner or renter no longer maintains a separate household. If the unit was a rental property owned by an investor, there is no reduction in the number of households if the occupants find a new rental unit. If the home was owner-occupied, there is no reduction in the number of households if the owner rents an apartment. The number of future foreclosures probably overstates the impact of those foreclosures on household formation and construction.<sup>8</sup>

Various cyclical and financial factors—such as high unemployment, tight lending standards, or expectations of further declines in home prices—could also reduce household formation below underlying rates. However, any shortfall of household formation due to those factors would probably be reversed as unemployment rates, lending conditions, and expectations of home price appreciation returned to normal.

## **Excess Vacant Units**

The vacancy rate, or the number of unutilized vacant units as a percentage of all housing units, is a key measure of the balance between supply and demand in the housing market. A low vacancy rate indicates excess demand, which stimulates construction. A high vacancy rate reflects excess supply, which dampens construction. Both homeowner and rental vacancy rates are currently at historically high levels (see Figure 11).

The effect of today's excess vacant units on future housing starts depends on the answers to three questions. First, how many excess vacant units are there? The greater the excess, the further housing starts must fall below underlying demand. Second, is the above-normal number of vacant units really an excess? If the recent increase in vacancy rates is desired by owners, there is no reason for starts to fall below underlying demand. Third, will the excess vacant units subtract from new construction? If today's vacant units are poor substitutes for the type of homes that households desire, they will not reduce new construction.

## **The Number of Excess Vacant Units**

A natural measure of the number of excess vacant housing units is the difference between the actual number of unutilized vacant units and the trend level of unutilized vacant units. In the second quarter of 2008, 6.2 million housing units were unutilized vacant, representing 4.8 percent of the total stock. The trend level of unutilized vacant

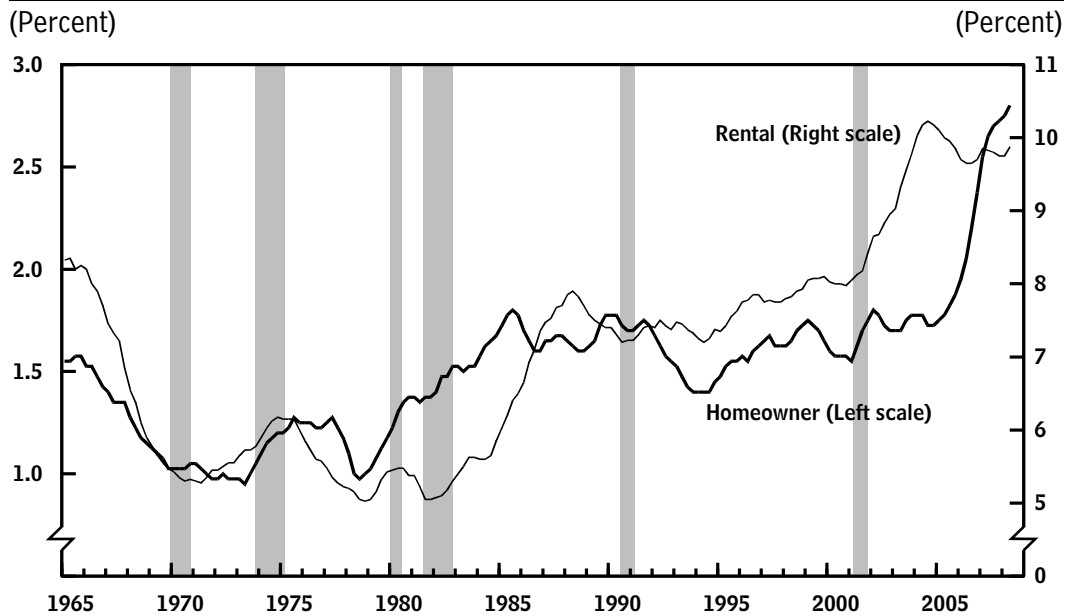
---

8. Although it does not directly examine construction, a recent paper finds that the impact of foreclosures on home prices “is quite small in magnitude.” See Charles W. Calomiris, Stanley D. Longhofer, and William Miles, *The Foreclosure-House Price Nexus: Lessons from the 2007–2008 Housing Turmoil*, Working Paper No. 14294 (Cambridge, Mass.: National Bureau of Economic Research, September 2008).



**Figure 11.**

## Homeowner and Rental Vacancy Rates



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are four-quarter moving averages and are plotted through the second quarter of 2008.

units is 3.5 percent of the total housing stock of 129 million units, or 4.5 million units. The difference between those measures implies 1.7 million excess vacant units at the end of the second quarter.

Builders have already taken steps to eliminate some of that excess inventory. Because of the time lag between start and completion of a housing unit, the shortfall of starts below underlying levels through June will eventually trim 250,000 units from that excess. In addition, the abundance of vacant units will probably hold placements of mobile homes for residential use below underlying levels for some time, removing an additional 150,000 excess units. Thus, beginning in July 2008, housing starts over the next few years would need to total 1.3 million units less than underlying levels during that period to eliminate the remaining surplus of unutilized vacant units.

That estimate of excess supply assumes that underlying demand for unutilized vacant units is currently the same fraction of total units as it was in the 1990s and that there are no excess utilized vacant units. If some factor has permanently increased the willingness of owners to hold vacant units since the 1990s, then excess supply would be smaller than that estimate. For example, if the rise in the rental vacancy rate between 2000 and 2004 resulted from a permanent increase in the willingness to leave rental units vacant, then the 700,000 increase in vacant rental units over that period would represent an increase in the trend level of unutilized vacant units rather than an

increase in excess vacant units. That development would reduce the excess supply of units to be drawn down by below-normal rates of construction to 600,000.

If, on the other hand, the sharp increase in utilized vacant units since late 2006 reflects units in foreclosure and units held off a weak housing market, then excess supply would exceed 1.3 million units. (Units held off the market because of low prices are analogous to discouraged workers in the labor market.) If the number of utilized vacant units had grown 1.1 percentage points per year faster than the housing stock between the fourth quarter of 2006 and the second quarter of 2008, as it had for the previous 15 years, that number would have increased by less than 500,000 units. Instead, there were 1.6 million more utilized vacant units in the second quarter of 2008 than in the fourth quarter of 2006. If those extra 1.1 million units are in fact excess vacancies, the excess supply of housing to be drawn down through below-normal construction is more than 2.4 million units.

The inventory of existing homes for sale, published by the National Association of Realtors and used in calculating the months' supply of homes for sale, is another commonly used measure of the supply of housing units. Over time, that inventory behaves similarly to the number of vacant housing units for sale; between the end of 2005 and the end of 2007, the inventory of existing homes for sale increased by 40 percent, while the number of vacant homes for sale increased by 39 percent. However, the number of vacant homes better captures the downward pressure of excess supply on new construction than does the number of homes for sale, because homes for sale include occupied homes as well as vacant homes. An additional occupied home for sale adds to both housing demand and housing supply, because the residents generally buy or rent another home after the home is sold. An additional vacant home for sale adds only to housing supply.

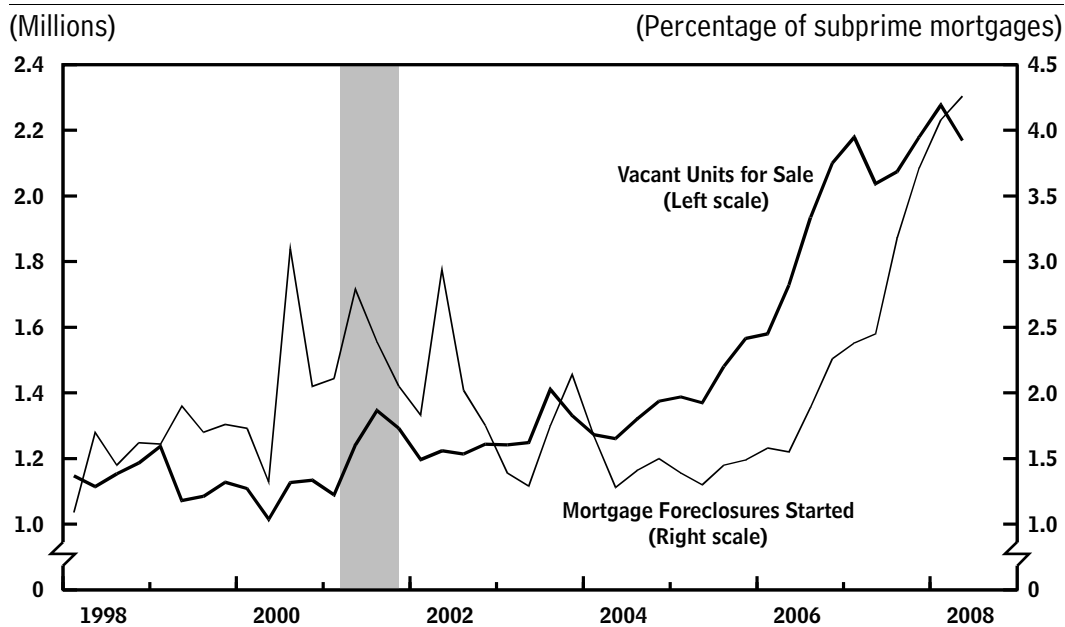
### **Sources of Excess Vacant Units**

A greater number of vacant units puts downward pressure on construction and home prices only if those vacancies are not the result of higher demand for housing units, whether occupied or not. For example, to the extent that investors are willing to accept a lower probability of occupancy of rental units in order to take advantage of high expected price appreciation, then higher rental vacancy rates do not reduce construction. To determine the likely impact of today's vacant housing units on future construction, it is important to understand the sources of those vacancies.

In the period spanning mid-2005 to mid-2008, foreclosure rates rose after vacancy rates did and thus can explain only a portion of the increase in vacant units. The percentage of homes with subprime mortgages on which foreclosures had started remained low through mid-2006 and did not rise above its mid-2000 peak until the second half of 2007 (see Figure 12). Meanwhile, the number of vacant units for sale grew by 730,000 between the second quarter of 2005 and the fourth quarter of 2006 and by just 70,000 over the subsequent six quarters. Thus, 90 percent of the increase in vacant units for sale between mid-2005 and mid-2008 was added when foreclosure

**Figure 12.**

## Vacant Housing Units for Sale and Foreclosure Starts on Subprime Mortgages



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census; Mortgage Bankers Association.

Note: Data are quarterly and are plotted through the second quarter of 2008.

rates were still at normal levels. However, continued high foreclosure rates could spawn new vacancies in the future.

Overoptimism among home builders can explain even less of the increase in vacant units. The number of new completed single-family homes for sale climbed by only 79,000 between the second quarter of 2005 and the second quarter of 2008, less than one-tenth of the increase in vacant units for sale over that period. (Total new single-family homes for sale also include units not yet started and units under construction, which are not included in vacancies.)

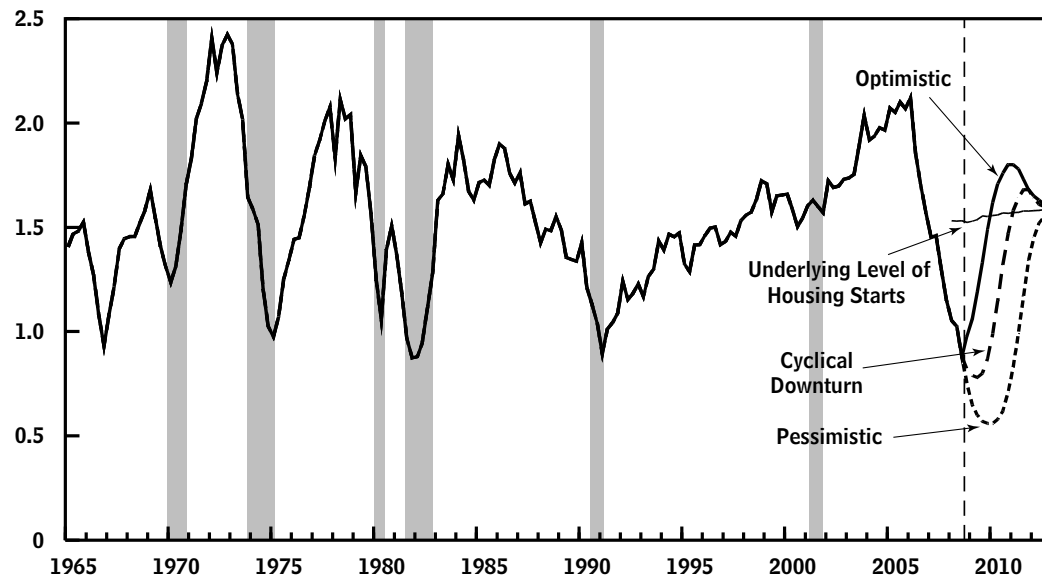
Expectations of above-average rates of price increase most likely explain much of the growth in vacant units. A higher expected rate of increase in home prices increases the incentive of investors to buy real estate to either rent or resell. In the case of rental units, unless rents fall, there is no increase in the number of renters to match the increase in the supply of rental units, so the number of vacant rental units rises. In the case of investors buying homes to resell, those homes are vacant for sale while they are on the market.

To the extent that the increase in unutilized vacant units reflected increased demand for residential property by investors, the net impact on housing starts and prices was

**Figure 13.**

## Actual and Projected Housing Starts

(Millions of units)



Sources: Congressional Budget Office; Department of Commerce, Bureau of the Census.

Note: Data are annual rates calculated from quarterly data and are plotted through 2012. The dashed vertical line separates actual from projected data. (Actual data extend through the third quarter of 2008.)

positive. In the framework presented above, that impact is captured as an increase in the trend level of unutilized vacant units. As expectations of future home price appreciation have retreated to more normal levels, that increase in the trend level of unutilized vacant units has dissipated, leaving a glut of excess vacant units that must be worked off by low rates of new home building.

### Will Excess Vacant Units Subtract from Construction?

Excess vacant units will not subtract from future construction if they are not good substitutes for new homes. For example, vacant homes might be in areas where people no longer want to live. During the 1950s and 1960s, many Americans moved from farms to cities and towns. The farmhouses they abandoned were poor substitutes for new homes in cities and towns and so did not subtract from new construction there. Alternatively, today's excess vacant units could be older homes that people no longer want to live in. In either case, the excess vacant units would eventually be removed from the housing stock, being counted as an increase in net scrappage.

Because of its characteristics, however, the current stock of excess vacant units is a good substitute for new construction. Many of the vacant units are themselves newly constructed. More than 16 percent of the increase in vacant units for sale between the second quarter of 2005 and the second quarter of 2008 consisted of units built after

**Table 4.****Estimated Housing Starts Under Three Scenarios**

(Millions)			
Scenario	2008	2009	2010
Optimistic	0.98	1.27	1.72
Cyclical Downturn	0.94	0.81	1.23
Pessimistic	0.93	0.60	0.62

Source: Congressional Budget Office.

April 1, 2000, many of them unsold new homes. In addition, the increase in the percentage of vacant units for sale during those three years was slightly larger for units built between 1970 and 2000 than for older units. Also, homeowner vacancy rates have risen the most in the South and West, regions that together have accounted for 70 percent of housing starts over the past 20 years. Finally, excess vacancies exist for all types of units that builders might construct: Vacancy rates are high for both rental and homeowner units, and the months' supply of units for sale at current sales rates is high for both single-family homes and condominiums.

**Possible Scenarios for Housing Starts**

Given the uncertainties involved in forecasting household formation and in determining the current number of excess vacant units and how quickly they will be worked off, housing starts could take any of a number of paths over the next several years. This section looks at three possible paths: an optimistic scenario in which the effects of recent adverse cyclical and financial conditions on household formation are completely reversed and the vacancy rate remains permanently above 1990s levels; a cyclical downturn scenario in which cyclical and financial factors have no further net impact on household formation and vacancy rates eventually fall back to 1990s levels; and a pessimistic scenario in which household formation slows as much as in the early 1980s and early 1990s, unutilized vacancy rates fall, and the excess growth of utilized vacant units in 2007 is reversed (see Figure 13 and Table 4).

The scenarios do not consider alternative outcomes in the underlying demand for housing units. Underlying demand could be above or below expected levels if any of the determining factors—net immigration, demand for second homes, headship rates, or scrappage rates of existing units—exceeded or fell below expected levels. Differences in the underlying demand for housing units translate roughly one for one into differences in housing starts and can be added to or subtracted from the scenarios examined below.<sup>9</sup> Alternative levels of demand for mobile homes would also affect housing starts.

9. An increase of 100,000 units in underlying demand would boost starts by about 104,000 units because 4 percent of starts are never completed.

**Table 5.****Number of Excess Housing Units to Be Eliminated by Reduced Construction Under Three Scenarios**

(Millions of units)

	Optimistic	Cyclical Downturn	Pessimistic
Current Excess Vacant Units <sup>a</sup>	0.6	1.3	2.4
Plus: Net Shortfall of Household Formation from Underlying Level	-0.4 <sup>b</sup>	0	0.7
Other Changes	<u>0</u>	<u>0</u>	<u>-0.3</u>
Equals: Required Cumulative Deviation of Housing Starts from Underlying Level	0.2	1.3	2.8

Source: Congressional Budget Office.

a. Adjusts for below-normal level of current work in progress and below-normal future shipments of mobile homes.

b. Household formation is above the underlying level.

**Optimistic Scenario**

The optimistic scenario is based on the possibility that much of the rise in vacant units for rent during the 2000–2004 period—700,000 units—stemmed from a permanent upward shift in the underlying vacancy rate. It is unlikely that all of the increase in the vacancy rate was desired by owners—that is, was a permanent shift—but it is possible that factors that are not yet clearly understood may have caused such a shift. If that occurred, the number of current vacant units that would be considered excess units is reduced from 1.3 million to 600,000. In addition, the nearly 400,000 households lost to adverse cyclical and financial conditions in 2007 and early 2008 return over the next few years. That development reduces to 200,000 the number of excess units to be eliminated by holding starts below underlying levels over the next few years (see Table 5).

Under this scenario, housing starts are already at their trough. Activity begins to rebound late this year and is back to underlying levels by the end of 2009. The return of households temporarily lost in 2007 and early 2008 then pushes starts above underlying levels in 2010 and 2011. The rapid rebound of housing starts under such a scenario resembles that following the recessions of the 1970s and early 1980s.

**Cyclical Downturn Scenario**

This scenario starts from the estimate that there were 1.3 million excess vacant units at the end of the second quarter of 2008 that would not be eliminated by the current low levels of construction in progress or by lower future shipments of mobile homes. The loss of 400,000 households to adverse cyclical and financial conditions in 2007 and early 2008 is assumed<sup>a</sup> to be permanent, but any additional shortfall over the next

year or two is eventually made up. Housing starts must thus remain below underlying rates long enough to work off 1.3 million excess vacant units.

Under such a scenario, housing starts would remain below recent levels through 2009. Construction activity would finally recover during 2010, rising to underlying rates in early 2011. This scenario envisions a more prolonged trough than in past housing recessions because of the large overhang of vacant units. In the mid-1970s and in the early 1980s, there was no such overhang to be worked off, so starts rebounded as soon as the Federal Reserve eased monetary policy.

### **Pessimistic Scenario**

In this scenario, the 1.1 million vacant units resulting from above-normal growth of utilized vacancies since late 2006 are in fact excess vacancies, bringing the number of excess vacant units to 2.4 million. Adverse cyclical and financial conditions reduce household formation by an additional 700,000, bringing the total shortfall due to such factors to that experienced in the housing recessions of the early 1980s and the early 1990s. Because of the length of the downturn, shipments of mobile homes fall a further 100,000 units below underlying levels, partly alleviating the required drop in housing starts. In addition, 200,000 more units than normal are removed from the housing stock—by increased demolitions, for example. Even so, housing starts must fall a cumulative 2.8 million units below underlying levels in this scenario to restore the balance between supply and demand in U.S. housing markets.

Under such a scenario, housing starts would continue to decline until the end of 2009. The rebound in construction would be slow, held back by the huge overhang of vacant units and weak household formation. Starts would remain below an annual rate of 1 million for three years and would not return to underlying rates until the second half of 2012.











**CONGRESS OF THE UNITED STATES**  
**CONGRESSIONAL BUDGET OFFICE**  
**WASHINGTON, DC 20515**

**INSIDE MAIL**