

# Will the Real Price of Housing Drop Sharply in the 1990s?

*By C. Alan Garner*

**H**ome ownership has long been part of the American dream. From the mid-1960s to the late 1970s, the wealth of homeowners rose substantially due to increases in the real price of housing—the price of housing adjusted for inflation. As a result, many people came to believe that buying a home was the safest and highest yielding investment that a household could make. But a drop in the real price of housing in the early 1980s challenged this view, and a further drop during the recent recession has raised concerns that home owners may face declining real home prices throughout the decade.

Analysts differ about the outlook for real housing prices in the 1990s. Some observers argue that real housing prices may drop because the “baby-boom” generation is being followed into the housing market by a smaller “baby-bust” generation (Laing; Mankiw and Weil). The resulting weaker growth in housing demand may put downward pressure on the real price of housing. Other analysts argue, however, that such economic factors as real income growth and reduced home supply will offset these adverse demographic factors (DiPasquale and Wheaton; Downs).

This article argues that economic factors in the housing market are likely to prevent a severe decline of real housing prices in the 1990s. The first section shows why some observers are concerned that the baby bust may depress future housing prices. The second section shows that demand-side economic factors also have important effects on real housing prices. In fact, some of the past increases in the real price of housing that have often been attributed to the baby boom may have been due to such factors. The third section discusses supply-side economic factors and explores the outlook for real housing prices in the 1990s.

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*C. Alan Garner is a senior economist at the Federal Reserve Bank of Kansas City. Carrie Ross, a research associate at the bank, helped prepare the article.*

## *Baby Booms and Busts*

Recent concern about future housing prices has been fueled partly by sharp declines in housing prices in such cities as Boston and San Francisco.<sup>1</sup> But changes in metropolitan housing prices often reflect unique local factors in addition to national economic conditions. Fears of a prolonged fall in real housing prices at the national level are more realistically based on demographic factors, particularly the effect of the baby bust on future housing demand. Postwar experience shows that baby booms and busts have an important effect on the housing market.

The real price of housing has fluctuated significantly over the postwar period. The real price of housing can be measured by the GNP deflator for residential investment divided by the GNP deflator for all goods and services (Chart 1). Because this measure represents the price of housing relative to the general price level, the real price of housing falls if observed housing prices increase more slowly than the prices of other goods and services.<sup>2</sup> Although the real price of housing has fluctuated over the postwar period, Chart 1 shows no evidence of a persistent upward or downward trend.

Changes in the real price of housing can be interpreted in a simple supply and demand model of the housing market (Figure 1). The real price of housing is measured on the vertical scale, and the quantity of housing on the horizontal scale. The upward-sloping line *S* represents the supply curve of housing.<sup>3</sup> In the short run, changes in the price of housing induce only small changes in the quantity of housing offered on the market. The downward-sloping line *D*<sub>1</sub> represents the initial demand curve for housing. The demand curve is downward sloping because a rise in the real price of housing reduces the quantity of housing demanded, other factors held constant.

A change in the birth rate influences the real price of housing by shifting the demand curve. After a period of years, a baby boom increases the quantity of housing demanded at any given real price of housing. As a result, the housing demand curve shifts to the right—for example, from *D*<sub>1</sub> to *D*<sub>2</sub> in Figure 1. The supply and demand model implies that such an increase in housing demand bids the real price of housing upward from *P*<sub>1</sub> to *P*<sub>2</sub>. Similarly, a baby bust shifts the housing demand curve to the left after a period of years, reducing the real price of housing.

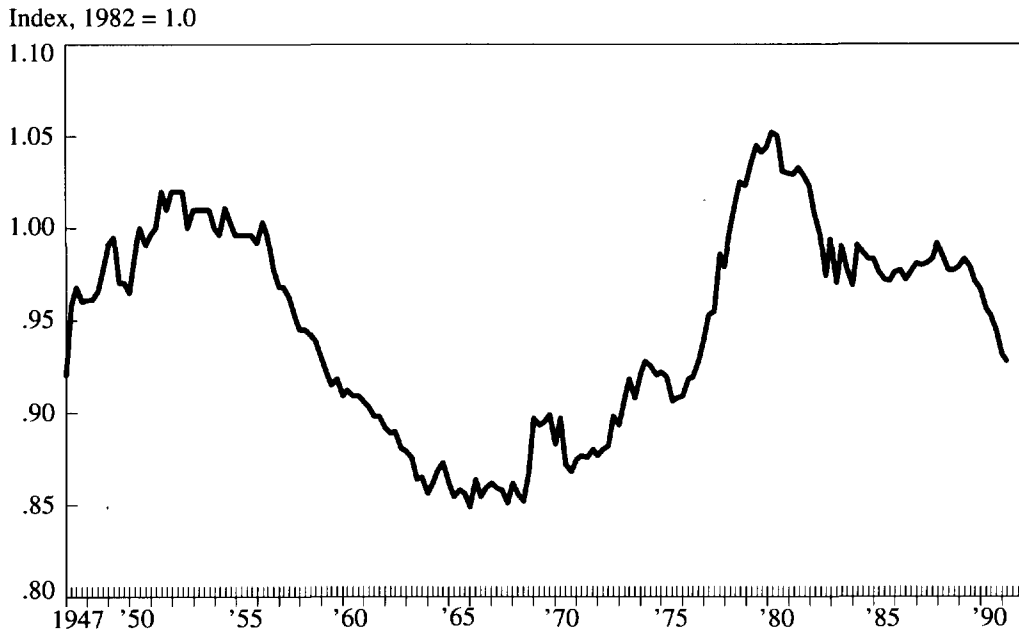
This simple supply and demand analysis of how baby booms and busts affect the housing market accords well with movements of real housing prices over much of the postwar period.<sup>4</sup> A drop in the real price of housing in the 1950s and the early 1960s can be blamed partly on fewer young people entering the housing market in these years. Changes in the population aged 25-44 years and in the real price of housing are presented in Chart 2. Many people form households and buy their first home while they are between 25 and 44 years of age. The population aged 25-44 years fell slightly in the late 1950s and the first half of the 1960s. The population decline in this age group reflected lower birth rates during the depression of the 1930s.

The entry of the baby-boom generation into the housing market coincided with a rebound in the real price of housing in the 1970s. Birth rates rose sharply in the United States from the late 1940s to the early 1960s. As a result, the first wave of the baby-boom generation began entering the housing market in the early 1970s. Over the course of the decade, the number of people between 25 and 44 years of age grew at a 2.5 percent average annual rate.

But the close relationship between population growth and real housing prices weakened somewhat in the late 1970s and the 1980s. For

Chart 1

## The Real Price of Housing



Source: U.S. Department of Commerce, Bureau of Economic Analysis.

example, the sharpest gains in real housing prices occurred at the end of the 1970s, well after the baby-boom generation began entering the market. The timing of these large increases in real housing prices suggests that factors other than the baby boom were exerting a major influence on the housing market.

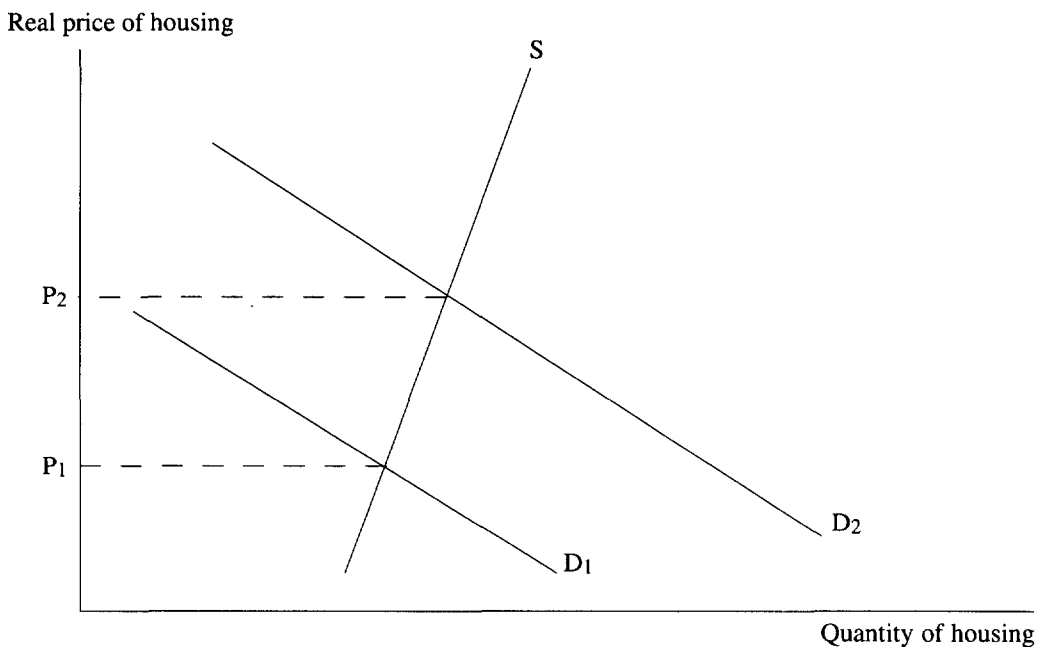
Other factors apparently also dominated the effect of the baby boom on the real price of housing in the 1980s. The real price of housing reached a peak around 1980 but dropped as the economy experienced back-to-back recessions in the early 1980s. The real price of housing then remained on a plateau in the mid-1980s before declining recently. Yet the number of people between 25 and 44 years of age grew at a 2.8 percent annual rate in the 1980s, slightly faster than in the 1970s. The growth of this age

group slowed at the end of the decade, reflecting declining birth rates in the 1960s. But despite this slowdown, the population aged 25-44 years was still growing about as fast as in the early 1970s, a period when the real price of housing was rising.

Why did the relationship between population growth and real housing prices weaken in the late 1970s and the 1980s? Other demographic factors may have played a role by increasing the number of households relative to the population, raising the demand for housing.<sup>5</sup> During most of the postwar period, the number of single-person households increased dramatically because of a later average age for first marriages, a rising divorce rate, and a greater tendency for elderly people to live alone (Miller). Young adults also became more likely

Figure 1

**An Increase in Housing Demand**



to live outside their parents' homes.<sup>6</sup> But such factors are probably not an adequate explanation for the unusual strength of housing prices in the 1970s; nor, of course, can they explain the weakness in the 1980s. Accordingly, the next section explores another important set of factors, demand-side economic influences.

***Demand-side Economic Influences***

While demographic factors clearly have been an important influence on the housing market, demand-side economic factors have also been important. Much of the increase in real housing prices in the late 1970s, as well as the relative weakness since then, was caused by demand-side economic factors.

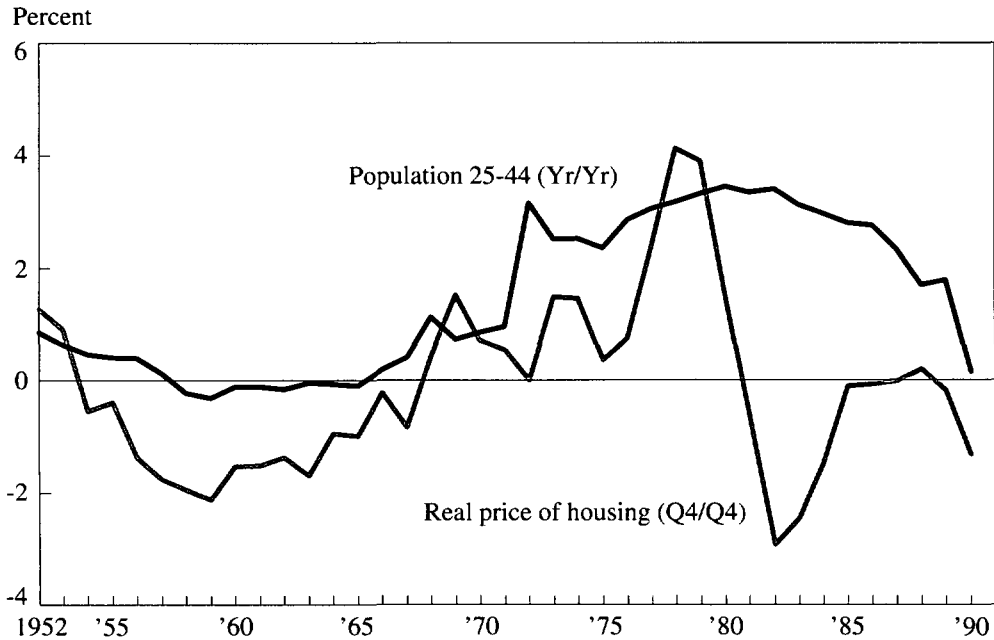
Two demand-side factors play an important

role in shifting the housing demand curve. The first factor is real income movements. An increase in real income raises people's ability to afford housing, shifting the housing demand curve to the right. Real disposable income is the after-tax spendable income of the household sector. An increase in real disposable income makes it easier for households to afford mortgage payments and the other expenses of home ownership. Higher real disposable income also makes it easier for households to save for the downpayment on a house.

Real income growth helps to explain some fluctuations in the real price of housing in the postwar period. Because housing prices reflect many factors, real disposable income and real housing prices have not always moved together. For example, the real price of housing rose

Chart 2

**Changes in the Population Aged 25-44 Years and in the Real Price of Housing**



Source: U.S. Department of Commerce, Bureau of Economic Analysis, and Bureau of the Census.

faster in the 1970s than in the 1960s even though real income growth slowed over this period. But real disposable income provides a better explanation for real housing prices in the 1980s. Real income growth slowed from the 1970s to the 1980s, helping explain the relative weakness of housing prices in the 1980s. And weak real income growth in the latest recession, as well as the recessions in the early 1980s, contributed to recent declines in the real price of housing.

The second demand-side factor is the real user cost of housing. An increase in the cost of owning and maintaining a house shifts the demand curve to the left. The real user cost of housing is the out-of-pocket expenses and foregone income associated with owning or renting a home. The user cost of housing reflects such

factors as mortgage interest expenses, depreciation, and expected capital gains or losses from home ownership.<sup>7</sup> Changes in the real user cost of housing help explain fluctuations in the real price of housing in the 1970s and 1980s.

Several economic factors in the 1970s contributed to the increase in housing prices by reducing the real user cost of housing. Low real interest rates, interest rates adjusted for expected inflation, pushed down the user cost of housing and shifted the housing demand curve to the right. Although interest rates rose substantially in the 1970s as inflation accelerated, real interest rates were low—sometimes, even negative. As a result, homebuyers had a strong incentive to borrow to purchase a home.

Inflation and the U.S. tax system interacted in the 1970s to reduce the real user cost of

housing. Inflation raised the current-dollar incomes of households and often lifted them into higher tax brackets.<sup>8</sup> For such households, "bracket creep" increased the marginal tax rate, the tax rate on an additional dollar of income. The higher marginal tax rate cut the user cost of housing by increasing the value of the mortgage interest deduction to home owners. Thus, the housing demand curve shifted to the right.

The expectation of large real capital gains on housing also lowered the user cost of housing in the 1970s. With home prices increasing because of various demographic and economic factors, many Americans came to expect continuing large gains in the real price of housing. And sharp gains in real housing prices in particular regions, such as California, were widely reported in the nation's press. Thus, the expectation of continuing capital gains from home ownership shifted the housing demand curve to the right.

Many of these same economic factors helped drive down the real price of housing in the 1980s by increasing the real user cost of housing. Mortgage rates declined more slowly than the general inflation rate in the 1980s, keeping real interest rates high by historical standards. Large cuts in personal income tax rates also raised the real user cost by reducing the value of the mortgage interest deduction.<sup>9</sup> And expectations of large capital gains from home ownership were dampened because the real price of housing slipped over much of the decade. Such economic factors in the 1980s raised the user cost of housing and shifted the housing demand curve to the left.

The previous discussion has shown that fluctuations in real housing prices depend on both demographic and economic influences. The baby bust will clearly be exerting downward pressure on the real price of housing in the 1990s. Are there likely to be any offsetting factors?

### *Outlook for the 1990s*

One reason the real price of housing may not drop sharply in the 1990s is that other demand-side influences could partly offset the effects of the baby bust on housing demand. A second reason is that supply-side economic influences may gradually reverse any decline in the real price of housing caused by the baby bust. This section develops these reasons in greater detail and then presents formal forecasts of real housing prices over the decade.

### *Housing demand in the 1990s*

The outlook for real housing prices is clouded by the impending entry of the baby-bust generation into the housing market in the 1990s. The Census Bureau projects that the number of people between 25 and 44 years of age will grow at a sluggish 0.4 percent annual rate in 1991-95 and drop at a 0.5 percent rate in 1996-2000 because of the baby bust. The decline of this age group in the latter period will be more severe than in 1960-64, when real housing prices fell. The imperfect historical relationship between the real price of housing and population growth suggests, however, that other influences must be considered.

Other demographic influences may partly offset the effect of the baby bust on housing demand. In particular, the number of single-person households may continue to grow in the 1990s, as it has throughout the postwar period. Young adults and the elderly are likely to continue living apart from their families if economic conditions permit. If real disposable income grows as expected over the next decade, the number of single-adult households will probably rise. In addition, advances in medical care and longer life expectancies may increase the number of elderly people living alone.

Increasing real disposable income in the

1990s should encourage greater household formation and raise the amount of housing demanded by the typical household. Although real disposable income has fallen during the recent recession, it has an upward trend because of long-run increases in employment and labor productivity. The baby bust may lead to a slowdown in employment growth since fewer young people will be entering the labor force. But real disposable income per person will probably increase in the 1990s because higher labor productivity will allow employers to pay higher wages.<sup>10</sup> Although the gains in real disposable income may be weak by postwar standards, such gains should partly offset any effect of the baby bust on housing prices.

The outlook for the real price of housing in the 1990s should also consider possible changes in the user cost of housing. Inflation is likely to stay relatively low in the 1990s, which may eliminate much of the inflation-induced incentive to buy a home. But real interest rates also may slip from the unusually high levels of the 1980s if the federal government cuts the budget deficit later in the decade. And if income tax rates are raised to cut the deficit, higher marginal tax rates will increase the tax advantages of home ownership. Thus, movements in the real user cost of housing may deter home ownership less than in the 1980s, when a rising user cost often discouraged home purchases.

### *Supply-side influences*

Changes in other demand-side influences are therefore likely to moderate the effects of the baby bust on housing demand. The entry of the baby-bust generation into the housing market may, nevertheless, shift the housing demand curve to the left and reduce the real price of housing. But Chart 1 suggested there has been no trend in the real price of housing in the postwar period. Although past shifts in the

housing demand curve initially changed the real price of housing, some other influence apparently reversed the price changes over the long run. The explanation lies in supply-side economic factors that moderate and largely reverse swings in the real price of housing over time.

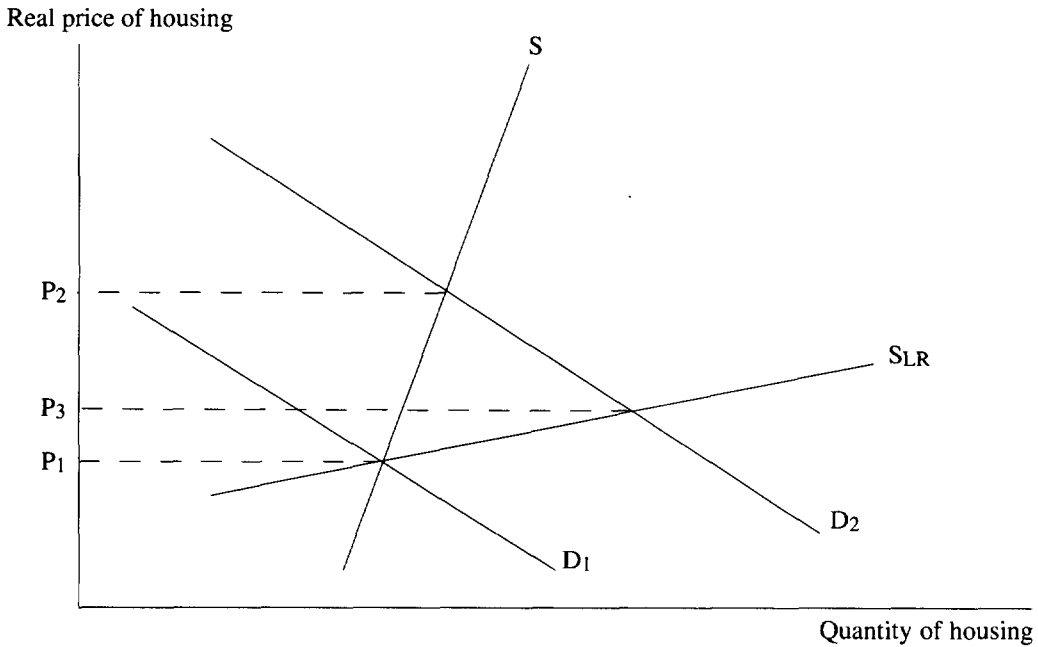
*The housing supply curve.* The real price of housing may change substantially in the short run when the housing demand curve shifts. The housing supply curve appears in Figure 1 as a steep upward-sloping line, reflecting the limited scope for increasing the quantity of housing in response to a rise in the real price of housing. It takes several years to make large adjustments in the housing stock because, even in a year when housing starts are strong, the net addition to the quantity of housing is a small fraction of the existing stock. As a result, a shift in the housing demand curve primarily affects the real price of housing in the short run.

Over a longer time horizon, the supply of housing can expand more in response to an increase in the price of housing. As the real price of housing rises, home builders can afford to pay higher wages to construction workers. Construction workers may, at first, be bid away from nonresidential construction projects. If construction wages are high enough, some workers may even quit jobs outside the building industry to become construction workers. A higher real price of housing also allows home builders to bid more aggressively for construction materials and equipment. The flow of resources into the construction industry ultimately permits a substantial increase in the quantity of housing in response to a higher real price of housing.

As a result, the supply curve for housing is likely to be much flatter in the long run. Figure 2 shows how important the slope of the supply curve can be in analyzing the effects of a shift in the demand curve on the real price of hous-

Figure 2

**Short-Run and Long-Run Supply Responses to an Increase in Housing Demand**



ing. Supply curve  $S$  is the same steeply sloped curve as in Figure 1. But suppose the long-run supply curve is the flatter line  $S_{LR}$ . In this case, a shift of the demand curve from  $D_1$  to  $D_2$  caused by a baby boom or an increase in real disposable income would produce a smaller long-run increase in the real price of housing. Instead of rising to  $P_2$ , the real price of housing would increase modestly in the long run to  $P_3$ .

A relatively flat long-run supply curve also implies that the baby bust would have little long-run effect on the real price of housing. The entry of the baby-bust generation into the housing market would, holding all other factors constant, shift the housing demand curve to the left. Such a shift in the demand curve would reduce the long-run quantity of housing and could have

a large effect on the home building industry. The real price of housing could also be reduced temporarily because of the steepness of the short-run housing supply curve. But if the long-run supply curve is relatively flat, the real price of housing would not fall sharply over a period as long as a decade.

*Empirical evidence.* Recent empirical studies support the view that the long-run supply curve for housing is relatively flat. In one study, for example, Follain assumes that the housing supply curve is a function of the price of housing, a price index of construction materials, the wage rate of construction workers, and the interest rate. The interest rate is included in the supply function because builders often borrow to undertake new con-



struction, making the level of interest rates a determinant of construction costs. Estimates obtained by Follain using a variety of statistical techniques imply that the long-run supply curve has been nearly flat in the postwar period.<sup>11</sup>

A forthcoming article by Holland also shows empirically that the long-run housing supply curve is flat. Holland tests for long-run relationships between the growth in housing demand, real residential investment, and the real price of housing.<sup>12</sup> He finds that the growth of housing demand caused by the baby boom “appears to be the major factor behind increased real residential investment, but does not appear to be the major factor behind increased real housing prices.” Such results are exactly what would be expected with a long-run housing supply curve that is flat—shifts in the housing demand curve would, in the long run, change the quantity of housing but not the real price.

Finally, a recent study by DiPasquale and Wheaton also finds that the long-run housing supply curve is relatively flat. This study develops a supply and demand model of the aggregate housing market in which the quantity of housing adjusts slowly to changes in demand. Unlike Follain, DiPasquale and Wheaton find some upward slope to the housing supply curve. But the supply curve is still flat enough that sizable changes in the level of new home construction moderate changes in the real price of housing over the long run. As a result, the baby bust would be expected to have little long-run effect on the real price of housing.

### ***Formal forecasts***

The flatness of the housing supply curve clearly has strong implications about long-run changes in the real price of housing. But it is also useful to examine formal forecasts of housing prices in the 1990s, because such forecasts take account of both demand-side and supply-

side influences.

A prominent study by Mankiw and Weil is often cited to justify concerns about a sharp decline in the real price of housing. Mankiw and Weil develop a housing demand measure based on the age distribution of the adult population. This measure is projected to grow 0.7 percent annually in the 1990s, down from 1.3 percent in the 1980s and 1.7 percent in the 1970s. An equation is then estimated relating the real price of housing to the housing demand measure, real GNP, the after-tax interest rate, and a time trend. Forecasts with this equation imply the real price of housing could drop 3 percent annually over the next decade, producing a cumulative drop of 30 percent in the 1990s.

Mankiw and Weil’s predictions have been widely criticized, however. In a special report by the National Association of Home Builders, Apgar argues that Mankiw and Weil’s single-equation model of real housing prices ignores the long-term links between housing prices and construction costs. He states that “it is unlikely that the asset price of the existing housing stock will fall substantially in the years ahead since it is unlikely that housing construction costs will decline significantly.” And Holland argues that Mankiw and Weil’s empirical results may be spurious because of the statistical properties of their housing demand and real housing price series.<sup>13</sup>

Statistical models, called Bayesian vector autoregressions (BVARs), forecast a smaller decline in the real price of housing than do Mankiw and Weil. Such models forecast housing prices on the basis of past statistical relationships. For purposes of this article, the real price of housing was predicted with two BVARs using different measures of the adult population (see box). The first BVAR predicted a 17 percent cumulative drop in real housing prices in the 1990s. Although such a drop would be considered severe by most home owners, a

similar fall occurred from 1956 to 1964. The U.S. economy was able to adjust to this decline and entered a prolonged expansion in the 1960s. The second BVAR predicted relatively stable real housing prices in the 1990s, with a cumulative decline of only 2 percent over the decade.

Although such forecasts suggest real housing prices will not fall as sharply as predicted by Mankiw and Weil, the BVAR forecasts leave substantial uncertainty about future real housing prices. Additional evidence can be obtained by looking at forecasts from other economic models.

Using such a model, DiPasquale and Wheaton reject the view that the real price of housing will fall sharply in the 1990s. Their model of the national housing market contains a more complete demand equation as well as an explicit housing supply equation. Assuming smooth but slow economic growth in the 1990s, DiPasquale and Wheaton forecast a small increase in real housing prices through 1993, followed by a slight decline through 1999. In 1999, the real price of housing is projected to be 0.6 percent higher than in 1989. An alternative cyclical forecast projects real housing prices will fall 2 percent by 1993 but then rise 7 percent from 1993 to 1999.

DRI/McGraw-Hill also forecasts that the real price of housing will be relatively stable in the 1990s. Because of the recession and past increases in mortgage rates, the real price of housing is projected to fall in 1991. But the real price of housing is expected to recover because of declining interest rates and future growth in employment and income. As a result, DRI/McGraw-Hill predicts a cumulative increase of about 1 percent in the real price of housing over the course of the decade.

## *Conclusion*

The real price of housing is an important economic variable because it affects the wealth of home owners. Some observers have become concerned that the baby bust will cause the real price of housing to drop sharply in the 1990s. Indeed, the entry of the baby-bust generation into the housing market will reduce housing demand. But other demographic influences, such as the growing number of single-person households, and economic influences, such as growing real income, may partly offset the effects of the baby bust.

Empirical evidence shows, moreover, that supply-side influences play a crucial role in determining the real price of housing over the long run. Falling housing demand may reduce the real price of housing temporarily, but the quantity of housing adjusts over time to keep prices in line with construction costs. The long-run supply curve for housing is relatively flat, implying that a decrease in housing demand has little long-run effect on the real price of housing.

Forecasts for the 1990s also suggest that any drop in the real price of housing is unlikely to be sharp or prolonged. A study by Mankiw and Weil predicts severe declines in the real price of housing as the baby-bust generation enters the housing market. But other researchers dispute their results. Alternative forecasts from BVAR models presented in this article predict less severe declines in the real price of housing. And other forecasters predict relatively stable real housing prices over the decade. Thus, although housing prices may experience short-term downward pressures, a sharp drop in the real price of housing in the 1990s seems unlikely.