

Illinois Real Estate Letter

Housing Values in the Year 2000

James R. Follain

The economic fortunes of many participants in the US economy are sensitive to changes in the value of the nation's owner-occupied housing. Home owners are affected because housing is the most valuable possession held by the typical household; residential structures account for approximately 25% of the value of all assets in the country. The local government sector is also affected, because property tax revenues are directly related to the value of housing; in 1987 local governments collected approximately \$50 billion through the *ad valorem* tax on owner-occupied residences. Businesses that preserve and enhance the value of improved real estate also are affected; 1989's \$440 billion expenditure on nonfarm private housing represented approximately 9% of our country's total spending on goods and services.

Furthermore, the value of owner-occupied housing, exclusive of land, increased by approximately 23% in inflation-adjusted terms during the 1980s and by more than 30% in the 1970s; its estimated value today is approximately \$4.5 trillion, and the land on which this housing has been built is probably worth another \$1 trillion. The owner-occupied housing sector is, by any reasonable measure, an extremely important component of our economy.

The Mankiw-Weil Hypothesis

What is likely to happen in the next several years to the value of owner-occupied housing? Some analysts have argued that home values will decline substantially during the 1990s. Economists Gregory Mankiw and David Weil have been especially pessimistic, estimating that the inflation-adjusted price of housing may decline by as much as 47% between now and 2010. In their widely-cited 1989 *Regional Science and Urban Economics* article "The Baby Boom, the Baby Bust, and the Housing Market," the twosome argues that the recent past's increase in the demand for owner-occupied housing, seen especially in the late 1970s, came about largely through changes in the age distribution of the population. Mankiw and Weil suggest that a larger population of people in their peak home-buying years may have increased the average per-household demand and, in turn, the asset price for owner-occupied residences.

Because demographic forecasts for the 1990s and the early part of the 21st century indicate substantial declines in the population segments responsible for the home-buying boom of the 1970s and 1980s, Mankiw and Weil predict that demand will diminish and that inflation-adjusted housing prices will fall

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ORER News

Name Dropping

The publication that had been known since 1987 as the *ORER Letter* is now the *Illinois Real Estate Letter*. The Office of Real Estate Research feels that this renaming of its flagship publication emphasizes ORER's status as a unit within the University of Illinois and recognizes support that ORER receives from the state's real estate community. No changes in the nature of the articles or the general content of the publication are planned.

Publishing Schedule

Readers may have noted that there was no Fall 1992 issue of the *ORER Letter*. Volume 6 therefore ended with the Spring/Summer 1992 issue. While current plans call for the *Illinois Real Estate Letter* to be published on a semiannual basis, with Winter/Spring and Summer/Fall issues, unforeseen additional problems could bring about further changes in the production frequency or in the format of the publication. Those who enjoy the *Illinois Real Estate Letter* and other work of ORER are still encouraged to inform the state's policy makers of their concerns over the reallocation of funds pledged for the use of the Office of Real Estate Research.

Alumni Hear Frederick, Beitler

Two luncheons have been organized in recent months for University of Illinois alumni employed in fields relating to real estate. The events were held on November 6, 1992 and April 23, 1993.

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substantially. If this dire forecast proves even remotely true, then there are dark days ahead for the individuals, businesses, and governments that are affected by the value of the nation's housing.

A More Optimistic View

Such a pervasive decline in home values across the US is seen as quite unlikely, however, by many economists. The pages that follow offer the more optimistic estimate that the aggregate stock of owner-occupied housing will rise in value by almost 25%, in inflation-adjusted terms, during the 1990s. An increase of such magnitude would make this decade a better period for home ownership than were the 1980s, though the gain would fall short of the 30% rise in inflation-adjusted values experienced during the 1970s. The discussion below focuses on determinants of housing value and explains why forecasts may disagree.

Market for Owner-Occupied Housing

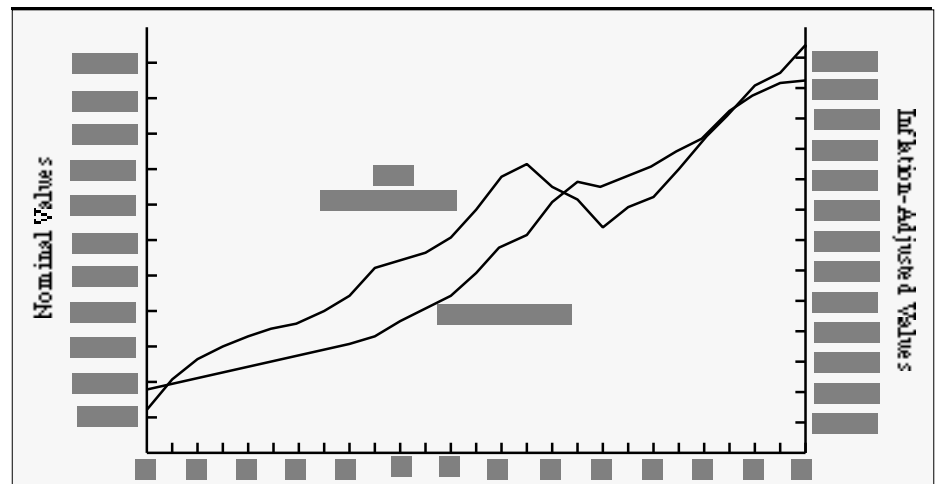
The *nominal* (not adjusted for inflation) value of America's nonfarm owner-occupied housing, exclusive of land, was approximately \$3.56 trillion in 1990, up from \$2.1 trillion in 1980 and \$575 billion in 1970. (The respective inflation-adjusted values, in 1987 dollars, were \$3.26 trillion, \$2.56 trillion, and \$1.83 trillion.) The largest absolute increases experienced during recent decades took place in 1977 and 1978, when \$213 billion worth of new owner-occupied housing was constructed in our country. In order to explain the basis of the

forecasts presented below and the controversies that underlie differences in the forecasts of various housing economists, it is useful to express the inflation-adjusted value of the housing stock as the product of three separate variables. The inflation-adjusted aggregate value of the nation's owner-occupied housing is computed as the number of *units of housing per owner household* multiplied by the *price of a typical housing unit* (with quality held constant) and by the *number of households that own the homes* in which they reside.

Understanding this relationship requires a recognition of the difference between the housing *stock* and housing *services*, a difference that follows from housing's dual nature as both an investment good and a consumption good. At the time a family buys its home, the transaction is most appropriately viewed as an investment in a long-term asset, the housing *stock*. The transaction changes the household's balance sheet to reflect more housing, typically along with a lower cash balance (because of the down-payment) and an increase in secured debt (the amount of the mortgage loan).

During the owner's occupancy, it is possible to define the consumption of housing *services* in terms of the annual flow of benefits generated by the house. The concepts of stock and service are connected in that the price paid for the consumption of housing services relates to the value of the housing stock. The price of housing services is a function of variables that include the interest paid

Figure 1: Trends in the Value of Housing per Owner Household



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on debt, the returns that otherwise could be earned on equity invested in the house, depreciation losses, maintenance outlays, and the effect of home ownership on the income tax liabilities of the household, all of which factors are determined by the value of the housing stock.

Housing per Owner Household

The average value of housing per owner household has grown substantially in nominal dollars, rising from approximately \$10,000 in 1964 to more than \$50,000 in 1990 (see Figure 1). Adjusted for inflation, the growth has been lower but still substantial; housing stock per household grew by 8% in inflation-adjusted terms during the 1970s, by more than 10% in the 1980s, and by more than 30% overall during the period since 1964. (These figures differ from increases in value of the total housing stock because the number of households has changed.)

The amount of housing assets held by a particular owner stems from the household's demand for housing services. Demand for any good depends on the potential buyer's income and on the price of the good in question relative to prices of other goods. In fact, economists have identified a strong positive link between household permanent income and the demand for housing services. As household income rises by a given percentage, the family's expenditure on housing typically rises by a similar percentage; economists would characterize this phenomenon as an *income elasticity of demand* of approximately one.

Economists are not as much in agreement about the *price* elasticity of housing demand as they are about the *income* elasticity. Price elasticity measures the percentage change in demand that accompanies a particular percentage change in price. While studies based on household expenditures have generated conflicting results, we might expect in the long run that demand for housing falls proportionally with increased price, just as it rises proportionally with increased buyer incomes.

Price of the Housing Stock

The asset price of owner-occupied housing measures the value of a particular amount of housing stock, such as

but even in inflation-adjusted terms there has been considerable upward movement, with the housing price more than 20% higher today than it was in 1964. Most of this increase occurred in the 1970s, when inflation-adjusted housing prices rose by more than 23%. (Housing prices adjusted for inflation actually declined by more than 3% during the 1980s despite a rally during the middle of the decade.)

The principal intuition underlying the forces that determine the price of the housing stock is as follows. Assume that builders and developers focus their attention on the gap between the current asset price of housing and the cost of constructing a new unit, as measured along Figure 2's right axis. If the gap is

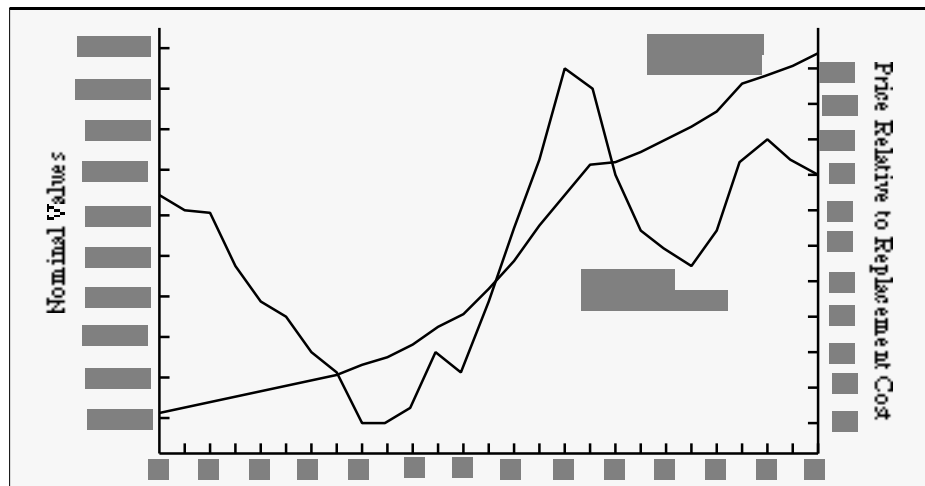
The more optimistic estimate is that the value of the aggregate stock of owner-occupied housing will increase by almost 25%, in inflation-adjusted terms, during the 1990s.

price per square foot of housing in a specified neighborhood. The Bureau of the Census utilizes a newly built, constant size single-family house as its standard for comparison across time and region. The Census price series, plotted in Figure 2, indicates a 1990 nominal value for this "typical" unit of approximately \$110,000, a fivefold increase over 1964's \$22,500 price. The major reason for this increase has been inflation,

positive (as occurred in the late 1970s and early 1980s), then builders have incentives to build new housing and to retain the difference between the selling price and the construction cost as profit. Competition among builders eventually reduces that gap to zero, because the additional construction generated by higher profits expands the supply of owner-occupied housing and reduces the price at which the market clears. The same type of logic also applies in reverse; a negative gap discourages new construction, but if subsequent population growth increases the demand for housing, then selling prices rise and the gap is driven to zero by competition.

If builders are quick to respond to a positive gap, and if there is no shortage of buildable sites, then the asset price of housing should always remain near its replacement cost. Economists label this situation a *perfectly elastic supply of housing*. If supply is perfectly elastic, then the price of housing is largely unaffected by increased demand. The sensitivity of the asset price to swings in demand is a major area of controversy regarding housing value. Although some

Figure 2: Trends in the Asset Price of Owner-Occupied Housing



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evidence suggests that home prices adjust quickly to reflect changes in construction cost, the evidence is not conclusive. Furthermore, land may not be plentiful in supply in a particular area; if land price is affected by movements in the demand for housing, then housing's market price may deviate considerably from replacement cost. Some economists believe that the asset price for housing is largely unaffected by swings in demand, at least in the medium and long run. Others, like Mankiw and Weil, argue that price is quite sensitive to shifts in demand.

Number of Owner-Occupant Households

The final component of the inflation-adjusted price of owner-occupied housing is the number of owning households. This series, plotted in Figure 3, shows considerable and steady growth during the past 25 years. The number of owner-occupant households stands today at slightly more than 60 million, up by approximately 75% since 1964. Only about one third of this growth has resulted from a higher population; another important reason for the increase has been a reduction in average household size from 3.33 to 2.67 persons. A .75% rise in the home ownership rate among households also has contributed, but the increase in this rate has not been steady. Indeed, as the figure shows, the aggregate ownership rate declined during the 1980s.

Explaining the number of owner-occupant households is a task in which analysts encounter considerable difficulty. The principal problem is that the

number of such households is, like the value of the owner-occupied housing stock, the product of two largely independent forces: the decision to own and the decision to form an independent household. Economists have studied the first of these forces in some detail, but work on the latter question is less conclusive. The ownership decision is influenced by a number of factors, including total population, the inflation-adjusted price of owning versus renting, and the ages and incomes of heads of households.

These factors suggest several reasons to expect growth in ownership. The first, and most important, is that US population is expected to rise by approximately 18 million people during the next ten years.

The number of owner-occupant households stands today at slightly more than sixty million, up by approximately 75% since 1964.

If the average household size and the aggregate home ownership rate remain constant during the 1990s, then the number of owner-occupant households will increase in proportion to population growth. Of course, changes in the rate of home ownership, and in the proportion of each group represented by heads of households, are likely to be observed.

One factor that surely will affect future trends in the home ownership rate

is the expected change in the age distribution of the population. We will become an older society during the 1990s. In particular, growth is expected among the 45-64 age group relative to the 25-34 age group. Because the ownership rate traditionally has been higher for older age groups, the number of owner households will likely increase in the coming decade, in contrast to the Mankiw-Weil finding, even if the ownership rate within each age group stays constant. A precise estimate of this aging's effect on the number of owners is, however, difficult to achieve.

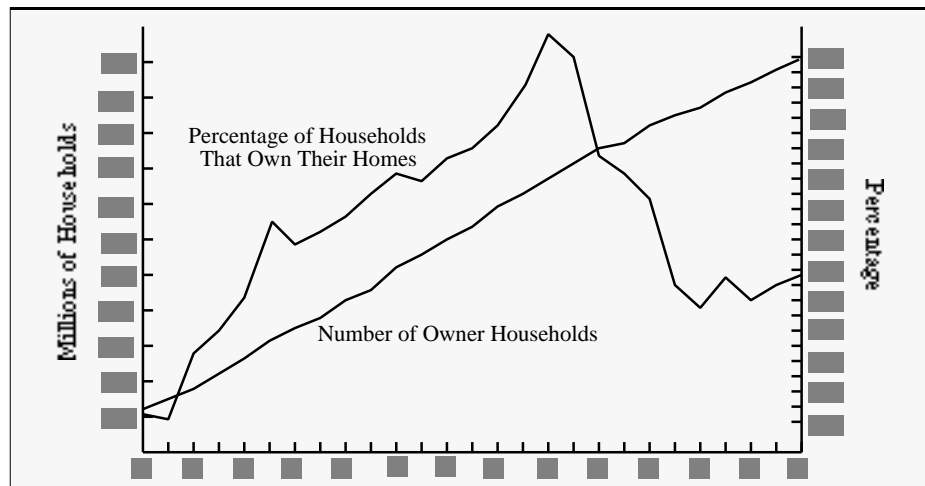
The home ownership rates traditionally observed among age groups may also change during the 1990s, especially if there are changes in average household

incomes and in the price of owning relative to that of renting. In fact, the responsiveness of these ownership rates to changes in income and to the relative price of owning versus renting is an important adjustment mechanism incorporated into the analysis underlying this article. If no other factors change, then a higher average income increases both the demand for housing per household and the number of owner-occupant households in the country. These increases, in turn, place upward pressure on the asset price of housing, and this upward price pressure forces the amount of housing per household and the number of owner-occupant households back downward.

Forecasts for the Year 2000

A statistical model of the housing market based on these considerations has been used in generating forecasts of housing market conditions in the year 2000. Three sets of forecasts are provided: the base case, the best case, and the worst case. The key assumptions of each case pertain to changes expected in the economic and demographic factors that work together to determine the

Figure 3: Trends in Home Ownership



value of housing. Some assumptions are common to the three cases; for example, population in the year 2000 is expected to have increased by 7.2% to 268.75 million people, and the proportion of the population between 45 and 64 years of age is expected to rise from 29% to 31.8% by the end of this decade.

Base Case: The base case provides for no change in the relative price of owning versus renting and for a 5% increase in the inflation-adjusted replacement cost, an outcome consistent with the idea that the housing supply will be more hindered in the 1990s by zoning issues, environmental concerns, and limited availability of land than it has been in the past. The

base case forecast is an increase in the inflation-adjusted value of the owner-occupied housing stock to \$7.38 trillion, a 31.2% increase over the 1990 level, by the year 2000. The base case forecast is considerably more optimistic than is that presented by Mankiw and Weil, even though it incorporates an assumed slowdown in economic growth relative to the two previous decades.

Best Case: An even more optimistic forecast can be generated with a few changes in assumptions. This best case scenario specifies a 16.6% rate of income growth, no growth in replacement cost, and a 9.5% rise in the price of renting relative to that of owning. This last

Growth in the value of the nation's housing stock must be expected if income and population, the principal determinants of housing demand, can be expected to grow.

forecast for this scenario is further based on the assumption that each percentage increase in the population of 45-64 year-olds is accompanied by a .33% increase in the number of home owners. This factor and others that determine ownership rates show the population increase, in this base case, to be accompanied by a projected 17.3% increase in the number of owner-occupant households.

Income, adjusted for inflation, is expected to grow by 14% during the decade, down from growth rates of 18% during the 1980s and 16% during the 1970s. Housing per owner household is projected to rise by 6.7%. This increase is less than the projected 14% rise in income, since a predicted 7.3% upward movement in the inflation-adjusted price of a constant quality housing unit reduces the response of housing consumption to higher income. Most of the rise in the asset price is generated by the 5% increase in replacement cost, while the remainder results from a 24% (6.7% + 17.3%) increase in housing demand, i.e., the sum of the percentage changes in housing services and the number of owning households. The key result of this

assumption reflects the belief of many economists that the full effects of the Tax Reform Act of 1986 have yet to be felt on the rental housing market and that tenants of rental properties will face substantial price increases in the 1990s. The best-case 39.9% predicted rise in the value of the nation's housing stock suggests a year 2000 value of more than \$8 trillion.

Housing service per household increases by 12.9% under the best case conditions, and the number of owner-occupant households rises by more than 23%, reflecting the impact of rising income on home ownership. Like the base case forecast, that for the best case includes an assumption that a .33% rise in the number of US owner-occupant households follows from each percentage increase in the nation's 45-64 year-old population group. The asset price of a standard housing unit rises by 3.6% even though replacement cost does not rise, because supply, in this model, reacts moderately to price changes.

Worst Case: Of course, a worst case scenario, based on some assumptions less optimistic than those incorporated in the

(continued from the first page)

At the earlier of these events, **Joseph Frederick** of Hilton Hotels discussed "International Entertainment Center and Casino: A Vision for Illinois" with sixty alumni and their guests. The more recent event, attended by fifty alumni and guests, featured **Paul Beitler** of Miglin-Beitler Development; his topic was "We Shape Our Buildings; Thereafter They Shape Us." Both luncheons were held at the Chicago Yacht Club. Thanks to Gene Stunard for helping to arrange for use of the Club's facilities.

There have been fifteen luncheons to date. ORER organizes the series to allow real estate alumni to meet informally and to hear outstanding speakers present their views on issues of current importance. The luncheons are open to all University of Illinois alumni who have ongoing interests in fields relating to real estate. Those seeking information on the scheduling of future alumni luncheons should contact ORER at the address or telephone number listed with editorial information on page 2.

Let Us Hear from You

Illinois Real Estate Letter readers sometimes write to share their views on the content of articles appearing in the publication. Some have suggested a "From the Mailbag" column that would contain excerpts from reader mail. The editors are willing to devote space in future issues to a sampling of reader responses. Both critical responses and supportive letters are encouraged.

Policy on Educational Use

The Office of Real Estate Research continues to receive requests from collegiate faculty wishing to assemble course reading packets. ILLINOIS REAL ESTATE LETTER (formerly ORER LETTER) articles are intended to be readily available for student use. Any original article appearing in any past or future ORER LETTER/ILLINOIS REAL ESTATE LETTER issue may be reproduced IN ITS ENTIRETY by a faculty member (or vendor acting at the faculty member's direction) in quantities sufficient to serve student needs. ORER does not hold the copyright to articles identified as reprints from other publications; professors wishing to reproduce such articles should contact the original publishers.

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base case, also can be depicted. As in the base case, one of the assumptions of the worst case is that the price of owning relative to that of renting will not change prior to the end of the decade. In this scenario, inflation-adjusted income grows by only 4.9%, a level characteristic of the slow growth of the late 1980s and early 1990s. The worst case results also show housing replacement cost to fall by 5.1%, a decline predicted to occur if land prices drop substantially during the 1990s because of economic and population growth rates slower than those expected under the less pessimistic scenarios.

Two other aspects of the model are also changed for the worst case analysis. The presumed sensitivity of supply to

case assumptions, since there will almost certainly be increases in population and in the number of people in the 45-64 age bracket. Under the assumption that supply would increase proportionally to offset any potential decreases in inflation-adjusted housing prices, growth in the value of the nation's housing stock must be expected if income and population, the principal determinants of housing demand, can be expected to grow. (Recall that both inflation-adjusted income and population are projected to rise even in the worst case scenario.) The average increase, under the three scenarios, in the inflation-adjusted value of the nation's housing stock is projected to be almost 25% by the end of the current decade.

in excess of \$75,000, and 55% goes to those with incomes averaging more than \$50,000. This benefit to high income home owners, large in both absolute and relative terms, is difficult to justify, and pressure to reduce it is likely to grow. Surely this misdirected subsidy should be examined carefully if, as seems likely, efforts to reduce the federal deficit intensify in the years to come.

The qualifier *high income* must be emphasized in this discussion, because support for the more justifiable subsidy to home ownership among low and middle income households currently is very strong, and it probably will remain strong. Indeed, many voters have come to realize that the tax benefits traditionally received by middle income home owners already have been reduced substantially through the 1986 Tax Reform Act. Among the Act's provisions were an increased standard deduction and a phasing out of deductibility for interest paid on non-mortgage debt (which, together, eliminate the value of itemizing deductions for many who borrow to pay for major purchases but whose mortgage interest payments are moderate), along with a general reduction in marginal tax rates (which decreases the value of any item's deductibility from income). There is no reason to expect that a further and more direct assault on government assistance to this portion of the income distribution would seem appropriate to our policy makers.

The Next Step

The forecasts presented above are based on a very *stylized*, or simplified, view of the market for owner-occupied housing. Its particular assumptions represent one analyst's "best guess" regarding the values of key components of home values, and regarding some key factors (such as income and population growth) that drive value forecasts. Although these guesses are guided by a great deal of research that has been done by housing economists over the last fifteen years, the fact remains that a much better understanding of urban housing markets is needed before forecasts of this type can be offered with much confidence.

Information must be produced on several key aspects of the model. First,

Because the home ownership rate traditionally has been higher for older age groups, the number of owner households will likely increase in the coming decade.

price changes is increased slightly, generating larger effects on the asset price of housing than are realized in the base or best cases. Furthermore, the effect of an increase in the age of the population on the number of owner-occupant households is reduced from .33 to .25. This somewhat arbitrary reduction reflects the possibility that the declining trend in home ownership rates observed among certain age groups during most of the 1980s may continue in the 1990s. The worst case scenario certainly generates a less optimistic forecast than do the base and best cases, though nothing like the Mankiw-Weil outcome. The total inflation-adjusted value of the housing stock still actually increases by a small amount (to \$5.5 trillion), while the asset price of a constant quality housing unit and the amount of housing per household decline only slightly. Steeper declines are not generated because the number of owner-occupant households is shown to increase by the same 7.2% that measures the gain in the population.

It is difficult to generate within this model a truly pessimistic forecast for the nation as a whole, even under the worst-

Policy Issues

A final, and more qualitatively oriented, forecast can be offered with regard to future public policy toward home ownership. Our federal income tax system provides an often misunderstood subsidy through exempting from taxable income the *implicit rents* earned by owner-occupants while permitting the deduction of home loan interest. Non-economists frequently question economists' view that the shelter provided by an owned home is an implicit form of untaxed income. The economic reasoning is similar to the logic that dictates taxing a business owner's personal use of a company car; each case involves non-business use of an item that receives tax benefits available only to investment assets.

This subsidy, with its explicit and implicit features, is designed to encourage ownership among those who otherwise could not afford to buy houses, yet the bulk of the subsidy, estimated to have exceeded \$80 billion in 1989, has been distributed to higher income taxpayers. Approximately 30% of the total benefit now accrues to households with adjusted gross incomes averaging

a better understanding of movements in the asset price of housing is needed. For example, the *national* housing price index adjusted for housing quality, as described above, is widely used by economists in constructing housing forecasts for the entire country. It is unfortunate, though, that similar data for metropolitan housing markets is largely unavailable. Without such data, it is impossible to forecast, with any accuracy, activity for particular cities or regions.

Second, it is important for researchers to gain a better understanding of the supply side of the housing market. We must learn more about the process that generates new housing and the process that brings about alterations in the

issues, but much more work must be completed before reliable information will be available.

An ongoing study of our nation's urban housing, which this author has conducted with Donald Leavens and Orwin Velz of the National Association of Realtors® (NAR), may be a promising source of information about housing in America's metropolitan areas. Preliminary results suggest that NAR's Existing Home Sales Survey Data, in combination with other information, might provide for better forecasting at the regional and local levels. The NAR data may be even more valuable if ways can be found to improve the reliability of reporting and, especially, if more information can be

The bulk of the tax subsidy, which was designed to encourage ownership among those who otherwise could not afford to buy houses, has been distributed to higher income taxpayers.

existing housing stock. More specifically, economists require more information on the sensitivity of supply to changes in the price of housing, known as the supply elasticity of housing, as discussed earlier. Because a wide range of opinion currently exists regarding the value of this measure, researchers working with the same underlying data can generate widely varying forecasts.

Third, we must study more thoroughly the manner in which land prices are affected by changes in the demand for housing. The price of land certainly is an important component of the price paid for housing, especially in large metropolitan areas. Unfortunately, there is virtually no systematic data source available for testing hypotheses proposed by housing economists and others regarding the housing market's impact on land prices.

Finally, we must develop more accurate means of measuring the sensitivity of the demand for owner-occupied housing, and the sensitivity of the decision to form a household, to the price of housing or to the age composition of the typical home-buying household. Economists have begun to study these

provided about the size and quality of each house sold. With such information, market observers could develop better indicators of movements in the constant quality price of housing. Academic researchers should be encouraged to work with real estate boards and other industry representatives to develop even better data sources. Such cooperative efforts can greatly enhance our understanding of the country's housing markets. ■

Dr. Follain is Professor of Economics and Chair of the Department of Economics at Syracuse University. He is also a former Director of the Office of Real Estate Research. Part of the preceding discussion is a summary of "The Outlook for Owner-Occupied Housing in the Year 2000," a longer paper that will appear as a chapter in URBAN FINANCE UNDER SIEGE by Thomas R. Swartz and Frank J. Bonello, M.E. Sharpe Press, 1993. Further information about the article, including a discussion of the economic model on which the analysis is based, is available from the author through the Maxwell School, Syracuse University, Syracuse, NY 13244-1090.

Dear Cynical:

Do you feel that local tax assessors might undervalue land?

Illinois and many other states require assessors to report land and improvement values separately when they assess real estate for *ad valorem* tax purposes. While there are incentives for assessment personnel to value the *total* of land and improvements for each parcel in a way that relates to market value, there are no incentives to assign "correct" values to the components.

Consider, for example, that an income property investor can use the assessments in determining, and later in defending, the basis against which improvements are depreciated for income tax purposes. The IRS states that it would not contest an assessment-based land/building allocation unless the assessment clearly were unreasonable. The assessor, with no direct obligation to the federal government, finds it difficult to ignore the wishes of influential local constituents, particularly when local taxing jurisdictions that the assessor serves are concerned only with total assessed values. Since some among those with power over local officials' political fates prefer for land's stated proportion of value to be as low as possible, assessors face incentives to undervalue developed land somewhat. If they use consistent approaches in valuing all land, be it developed or undeveloped, then effective tax rates on buildings are too high, while land is underassessed.

The result is economically perverse. Nineteenth century economist Henry George proposed a system under which property taxation's burden falls entirely on land, with *no* tax on improvements. George believed such a system to be efficient, in that tax-based decisions would not determine the quantity of buildings constructed. Graded tax systems designed to move toward the Georgist ideal specify that land, not buildings, be taxed at a higher rate. Even opponents of George's ideas do not argue in favor of higher tax rates for buildings. Yet the present system encourages assigning disproportionate shares of property tax burdens to buildings. Such taxation methodology enjoys no theoretical support.