Making Money in the Housing Market: Is There a Sure-Fire System?

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Almost two-thirds of the nation's households own the house in which they live. Although more than half of those houses are mortgaged, homeowner equity constitutes about one-third of all household wealth in the United States. For most people the largest single investment they will ever make is their house. It's not surprising, then, that housing market conditions command a great deal of attention in the media and that economists have devoted considerable effort to examining how well housing markets work.

Prospective buyers shop for houses both as consumers and as investors. As consumers, they are most interested in the characteristics of the house and the neighborhood—the number of bedrooms and baths, the presence of a garage or central air conditioning, and the quality of the schools to which they will send their children. As investors, buyers are interested in the return they are likely to realize on the house when it comes time to sell. The investment aspect of purchasing a house may receive little attention in discussions between prospective buyers and real estate agents, but it is an important concern for the buyer. In surveys of four different housing markets, Karl Case and Robert Shiller (1988) found that, for 44 to 64 percent of buyers, the investment factor was a major consideration in their decision to buy. And in only one of the markets were more than 5 percent of the houses bought

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as rental properties. Less than 10 percent of buyers professed that the investment aspect was not a consideration at all. Prospective buyers, then, should value any information that could help in predicting the return they will realize on their investment. If there is some way to identify houses likely to yield unusually high returns, homeowners or investors could potentially profit by buying and selling simply to reap the better-than-average returns. If someone could exploit publicly available information to earn abnormal returns in housing, the housing market would not be efficient.

THE NORMAL RETURN TO HOUSING

Like the return to any other asset, the return to housing equals the cash flow (actual or imputed) from the asset plus any capital gain or loss, i.e., any increase or decrease in the value of the property.[1] In the case of stocks, the cash flow is simply the dividends earned. In the case of rental housing, the cash flow to the landlord is equal to the rent received minus the expenses incurred. On an annual basis, the pre-tax *rate of return* on rental housing equals the yearly rent minus operating and maintenance costs plus capital gain, all divided by the value of the house at the beginning of the year. Economists think about the return to owner-occupied housing in a similar way, except that there are no actual cash flows for rent or for any repairs that the homeowner performs himself. So, for homeowners, economists impute cash flows for rent and maintenance equal to what they would receive or spend for equivalent rental properties.

Tax considerations further complicate the calculation of the rate of return on rental and owner-occupied housing. A landlord is allowed to depreciate the property for tax purposes and to deduct the cost of maintenance, but he must also pay tax on any capital gains that he has realized on the property when he sells it.[2] Homeowners do not get to deduct housing depreciation on their income taxes, but they do not pay tax on the imputed rent they receive. Moreover, most homeowners are exempt from tax on the capital gains they receive from their primary residence.[3]

In calculating the rate of return on housing the capital gain is difficult to determine for houses that are not sold. For stocks held in one's portfolio, the prices of identical stocks sold in the market provide a precise measure of the capital gain. But houses are seldom identi-

[1]To simplify this discussion we will concentrate on the return on assets rather than the return on equity. We will assume that houses are not mortgaged and the equity of the homeowner or landlord is equal to the value of the asset. For those landlords or homeowners whose houses are mortgaged, their own equity in the property is less than the value of the house, and the mortgage interest payments are part of the annual costs.

[2]Algebraically the *after-tax* rate of return on rental property equals

$$\frac{(1-\tau_i)(R_t-M_t-D_t)+(1-\frac{\tau_g}{(1+r)^{S-t}})(A_t+D_t)}{V_t}$$

where R_t equals rent in period t, M_t equals maintenance costs in period t, D_t equals the depreciation allowance in period t, A_t equals the change in the market value in period t, V_t equals the value of the house at the beginning of the period, τ_i equals the income tax rate, τ_g equals the capital gains tax rate, S equals the period when the house is sold and capital gains taxes are paid, and r equals the discount rate.

[3]Thus, the after-tax return for homeowners is much simpler than that for landlords. It equals

$$\frac{R_t-M_t+A_t}{V_t}$$

where R_t is the imputed rent the homeowner receives in period t, M_t is the maintenance cost including the value of any labor on maintenance by the homeowner in period t, A_t is the change in the market value in period t, and V_t is the value of the house at the beginning of period t.

cal, and they are sold at infrequent intervals. Therefore, analysts regularly use some average measure of housing price increases or decreases in the local market to estimate the capital gain or loss for houses not for sale.[4]

The problems in measuring the rate of return on housing in general and on owner-occupied housing in particular make it difficult to determine the long-run average rate of return to residential real estate. But according to the best estimates, the annual compound rate of return on residential real estate from the late 1940s to the early or mid-1980s was between 7.4 percent and 8.1 percent. The rate of return on stocks over that period was considerably higher—11 percent or more. On the other hand, the rate of return on Treasury bills was lower—less than 5 percent per year.[5] Why should the rate of return on housing differ from the return on other assets? One reason is that the risks for holding different types of assets are not the same. Investors demand a higher average return on those assets that entail more risk. An asset's "normal rate of return" includes the return on a risk-free asset, such as a Treasury bill, plus a risk premium, that is, an additional amount to compensate the investor for the added risk.

A common measure of the riskiness of an asset is how widely its return varies over time. Consider two stocks whose returns move up and down together, one in a range of -2 percent to 6 percent and the other in the range of -5 percent to 9 percent. The first is less risky than the second, and investors would demand a higher average return on the second stock to compensate for the additional risk or uncertainty about the return they will receive. The variation in the annual return to housing has been considerably lower than the variation in stock returns.[6] Consequently, the average long-run rate of return on housing has been lower than the return on stocks. The opposite has been true of the relative return on housing and Treasury bills. Both the variation in the rate of return and the average return have been higher for housing than for Treasury bills, reflecting the fact that housing is a riskier investment than Treasury bills.

Not only does the variation in the return to residential real estate over time differ from the variation in the returns to other assets, but in any one period there is a great deal of variation within the housing market itself. The return on housing varies from market to market and even among houses in the same local market.[7] Of course, the rates of return on different stocks also vary because of the differing fortunes of one company versus another. A stock investor, however, can protect herself against the unforeseen bad fortune of a particular company by diversifying her portfolio, that is, by buying a number of different stocks that reflect the overall market or by buying shares in a mutual fund that diversifies its holdings. Unexpected bad fortune for one company rep-

[4]A sizable literature has been developed on estimating appreciation rates for single-family houses. See Crone and Voith and the special issue of *The Journal of the American Real Estate and Urban Economics Association*, Vol. 19, No. 3 (Fall 1991).

[5]See Ibbotson and Fall, Ibbotson and Siegel, and Goetzmann and Ibbotson.

[6]See Ibbotson and Fall, Ibbotson and Siegel, and Goetzmann and Ibbotson. Ibbotson and Siegel estimated that between 1947 and 1982 the standard deviation (a common measure of variability) of annual returns to a portfolio of stocks on the New York and American exchanges and in the over-the-counter market was four and a half times as great as the standard deviation of the annual return to residential real estate. Goetzmann and Ibbotson estimated that the standard deviation of returns on the stocks in the S&P 500 was more than three times the standard deviation of the return on housing between 1947 and 1986.

[7]For evidence on the variation in returns between markets see Case and Shiller (1987), and for variations within markets, see Kiel and Carson.

resented in the portfolio is likely to be matched by unexpected good fortune for another company in the portfolio. This kind of diversification in the housing market is not available to the ordinary homeowner. Her entire real estate investment is likely to be in one house and subject to the fortunes of a single, local market. There is no mechanism for the homeowner to distribute her equity over a large number of houses in different markets. Theory suggests that this inability of homeowners to diversify their investment raises the rate of return buyers must expect before they are willing to invest in a house.[8]

Besides the inability to diversify their investment in housing, homeowners face another problem that does not confront the holders of stocks and bonds. It is not easy to sell a house quickly; or in the jargon of financial markets, houses are not very liquid. Unlike stocks and bonds that are traded frequently in organized markets with large numbers of buyers and sellers, houses are sold in markets where bids are received rather infrequently and the final price is usually the result of some negotiation between the buyer and the seller. If the seller needs the equity in a house quickly, she may have to sell at a price lower than one she might have negotiated under normal circumstances. Theory suggests this lack of liquidity for housing would tend to raise the normal return expected by a buyer.

Because of the special features of the housing market it is not possible to identify an investment that corresponds exactly to housing in terms of risk. Patric Hendershott and Sheng-Cheng Hu have suggested that the closest alternative to an investment in owner-occupied housing is a portfolio of mortgages. Since some of the features of owner-occupied housing, such as the inability to diversify or the lack of liquidity, do not apply to the mortgage market, housing and mortgages are not exact substitutes in terms of risk. Nevertheless, a comparison of the return to housing with mortgage returns shows periods when housing has earned a higher return than mortgages and periods when it has earned a lower return. Hendershott and Hu compared the return on housing to the after-tax return on mortgages for various overlapping eight-year periods between 1956 and 1979. From 1956 to 1963 a homeowner in the 30 percent tax bracket would have earned 6.53 percent *less* per year after taxes by investing in an owner-occupied home than by investing in mortgages. From 1960 to 1967 the homeowner would have made .05 percent more per year by investing in a house than in mortgages. From 1968 to 1975 the homeowner would have made 7.1 percent *more* per year by investing in a house than by investing in mortgages.

> Can the savvy investor predict when housing will earn a higher-than-normal rate of return?

The return on housing relative to other assets has clearly fluctuated over time. Moreover, in any one period, returns in some housing markets are clearly higher than returns in others. For example, the appreciation rate for housing in the Boston metropolitan area from 1983 through 1985 was 20 percent a year or higher, while in Los Angeles it was less than 7 percent in each of those years. On the other hand, from 1987 through 1989 Los Angeles had appreciation rates ranging from 11.5 percent to 27.9 percent while Boston's rates were 6.2

[8]Case, Shiller, and Weiss have suggested the creation of index-based futures and options markets to offer the homeowner protection against the risk associated with this inability to diversify.

percent or lower.[9] If the relative risks associated with housing in general or with specific housing markets change over time, these fluctuations in returns can be explained as changes in the risk premium investors demand for investing in housing.[10] But if, as most studies assume, the relative risks do not change, these fluctuations indicate that there have been periods of abnormal returns to housing. But can the savvy investor predict when housing in general or certain housing markets will earn a higher-than-normal rate of return?

Most discussions of market strategy, whether by economists or by financial advisors, have focused on the stock and bond markets. For more than 20 years economists have debated whether it is possible to systematically "beat the market," that is, to earn profits above those earned on similarly risky assets by consistently predicting abnormal returns. *Private or insider information* can be used to earn abnormally high returns on stocks.[11] The real question is whether *publicly available information* can be used in the same way. If the current price of a stock fully reflects all publicly available information, the information cannot be used to earn a higher-than-normal return and the market for the stock is said to be *efficient.*[12] Any new information relevant to future earnings is immediately reflected in the price of the stock. Housing markets are different from stock markets, so any conclusions about the efficiency of the stock market do not necessarily apply to the housing market. But the basic questions about the market's efficiency remain the same. Is all publicly available information reflected in housing prices, or can investors systematically make an abnormally high return from this information?

PREDICTING THE RATE OF RETURN ON HOUSING

Before a prospective buyer can make a profit in the housing market from publicly available information, that information must help him forecast future returns. Among the available public information, a buyer might consider past rates of return or appreciation, or population, job, and income growth to forecast the return on his investment. The simplest forecast models in terms of collecting data use only past returns to predict future returns or past appreciation to predict future appreciation. Therefore, researchers draw a distinction between using only past returns or appreciation and using all publicly available information to forecast future returns or appreciation.[13]

What Can Past Rates of Return and Appreciation Tell Us? One clue to the future return on any asset is past returns. For example, most estimates of the normal return to stocks, bonds,

[9]See Case and Shiller (1994).

[10]Unfortunately, Hendershott and Hu do not provide any statistics on the variation in mortgage rates or in the return to housing during the periods they examine. Such a statistic would indicate whether the relative risks between the two assets had changed. Nor do Case and Shiller (1994) give any measure of relative risks in the Los Angeles and Boston housing markets in the 1980s.

[11]See the article by Jaffe.

[12]For an early article on the efficient markets hypothesis see Fama. For a review of the literature see LeRoy. Certainly, market analysts are rewarded for identifying stocks that are undervalued, but any above-average return they may receive from trading these stocks should simply cover the costs of obtaining the necessary information and performing the analysis plus a normal return on the investment. As these informed analysts purchase the stocks and bid up the prices, those who have not borne the costs of obtaining the information and doing the analysis will not share in any extra profits derived from this information. See Grossman and Stiglitz.

[13]If one cannot forecast abnormal returns using only past rates of return or appreciation, the market is said to be *weak-form efficient*. If one cannot forecast abnormal returns using any publicly available information, the market is said to be *semi-strong efficient*.

or housing are based on the long-run average return for these assets. These normal returns are generally expressed in real terms, that is, after taking account of inflation. But knowing the long-run average or normal return to housing is of little help to the home buyer. The opportunity to make a better-than-average profit in the housing market depends on one's ability to forecast above-normal returns from past returns. Depending on the historical pattern of returns, an investor in the housing market might adopt one of two strategies. If local housing markets with abnormally high returns in one year generally experience abnormally high returns in succeeding years, the investor would purchase a house in a market where returns had been abnormally high on the assumption that these higher returns would continue. On the other hand, if abnormally low returns have historically been followed by abnormally high returns, the investor would buy a house in a market that had just experienced relatively low returns. If either strategy worked consistently to produce abnormally high returns for the investor, the housing market could be said to be inefficient because prices do not incorporate all the information available to the buyer and seller.

For homeowners or investors, a higher-than-normal return could come in the form of a higher rent (actual or implicit) or higher-than-average appreciation or both. Some researchers have estimated total returns to housing (rent minus operating costs plus capital gain), but more often researchers have concentrated on the capital gain component of the return, that is, the appreciation.

In a 1987 study, Karl Guntermann and Richard Smith used price data on FHA-financed houses in 57 metropolitan areas to compute a yearly appreciation rate for each market from 1968 to 1982. They also estimated what they consider to be the "normal" relationship between each metropolitan area's housing appreciation and the average for all 57 areas. Yearly appreciation was deemed abnormally high or low depending on how far it deviated from this estimated relationship. The authors then looked for a pattern of abnormally high or low appreciation that was offset after some fixed number of years. They found no significant correlation between abnormal appreciation in one year and abnormal appreciation in each of the succeeding five years, but they did find some offsetting appreciation rates in years 6, 7, 8, and 10.[14]

In contrast to Guntermann and Smith's results, more recent studies have found a positive correlation in abnormal returns over short periods of time. Using information on houses that were sold more than once between 1970 and 1986, Karl Case and Robert Shiller (1989 and 1990) estimated housing appreciation rates for four different metropolitan areas (Atlanta, Chicago, Dallas, and San Francisco). In two (Chicago and San Francisco) of the four areas, yearly appreciation rates were positively related to appreciation rates in the previous year.[15] Case and Shiller also used local rental

[14]While this pattern held in general, for some episodes abnormal appreciation was not offset but rather enhanced in years 7 and 8. Guntermann and Smith also examined patterns of abnormal appreciation after controlling for higher- or lower-than-average rental yields. With these adjustments there is no significant correlation of abnormal appreciation rates for years one through three, but there are significant correlations for years 4, 6, 7, and 8. Because of the statistical technique used to estimate this "normal" relationship between appreciation in each metro area and the national average, positive (negative) deviations from the relationship in one year will necessarily be offset by negative (positive) deviations in other years. There was no necessity, however, for the intervals between the offsetting appreciation rates to be the same across cities as Guntermann and Smith found.

[15]The authors also found a significant positive relationship when the data for all four metro areas were combined. For the San Francisco area, Case and Shiller used data only from Alameda County. In a similar study Dogan Tirtiroglu found that appreciation rates in selected communities in

indexes to develop a measure of excess returns and found that in three of the markets (Chicago, Dallas, and San Francisco), abnormally high returns in one year were positively correlated with abnormally high returns in the previous year.[16] James Poterba confirmed these results using data on 39 metropolitan areas from the National Association of Realtors. The findings of Richard Meese and Nancy Wallace also support the persistence of abnormal returns in the short run. Meese and Wallace found that during the 1970s and 1980s the rate of return to housing in 14 of 16 municipalities in the San Francisco metropolitan area was significantly related to rates of return in the previous three years.

Most studies have looked for higher-than-normal returns in local housing markets over relatively short periods of time, but Joseph Gyourko and Richard Voith examined relative appreciation rates over a longer span of time. For the period between 1971 and 1989 they identified only two markets (San Francisco and San Jose) from among 56 metropolitan areas that had significantly higher-than-average appreciation. Gyourko and Voith also found no consistent pattern of abnormal appreciation within individual markets. Abnormally high or low appreciation rates tended to persist for some time in five of the 56 markets. But in three of the markets abnormally high or low appreciation tended to be offset in the near term.

The evidence on whether future increases in house prices can be predicted by past increases alone is not conclusive. Even when Case and Shiller (1989) found evidence of a positive correlation between price increases in one year and increases in the following year, they also found that information on recent appreciation in the local market was not helpful in predicting the appreciation of individual houses.

Do Other Data Help? Past rates of return or housing appreciation, of course, are not the only information that might help in forecasting future returns or appreciation. There are good theoretical reasons to believe that other demographic and economic variables such as population growth, income growth, or construction costs could influence the appreciation rate or rate of return on single-family housing. Therefore, researchers have looked at the pattern of appreciation rates in combination with other variables.[17] Some of these other factors have often proven to have an independent effect on future appreciation, at least in the short run.

Increases in population, especially in the adult population, clearly increase the amount of housing demanded (see the study by Mills). But how do house prices respond to predictable changes in the adult population? In a widely quoted article, Gregory Mankiw and David Weil argued that house price appreciation in real terms is closely linked to the current growth in the population over 20 years of age. Since the size of this population group is predictable 20 years in advance, Mankiw and Weil concluded that housing price increases or decreases should be predictable many years into the future. But Americans who bought houses in the 1950s and 1960s apparently did not take the post-World War II baby boom into account; they did not bid up the price of housing in anticipation of "predictable" higher appreciation rates in the 1970s. Prices rose only as

the Hartford metropolitan area were positively correlated with the previous year's appreciation in neighboring communities.

[16]These results on total returns indicate that, at least for these housing markets, higher appreciation rates are not offset by reduced cash flow.

[17]They have almost always found that when these other factors are taken into account, recent past appreciation is significant in explaining current appreciation. See Hamilton and Schwab, Case and Shiller's 1990 study, Poterba, DiPasquale and Wheaton, and Abraham and Hendershott.

the baby boomers reached their adult years. Mankiw and Weil cite this episode as evidence that housing markets are not efficient.

But Stephen Holland has questioned the causal connection between the coming of age of the baby boomers and the rise in housing prices in the 1970s. His statistical tests showed that, over the long run, real house prices did not necessarily move together with the growth of housing demand. In another challenge to Mankiw and Weil, James Poterba examined how their measure of housing demand estimated from the size of the population adjusted for the age distribution affected real house prices in 39 metropolitan areas. When per capita income and construction costs were taken into account, no statistically significant relationship emerged between increases in the real price of houses and the demographically determined demand for housing. This is consistent with James Follain's earlier results that, in the long run, the cost of new housing net of land will be determined by the cost of supplying houses, that is, by construction costs.

Just because we can predict future price increases...does not necessarily imply that the market is not working well.

While the long-term relationship between population growth and housing appreciation continues to be debated, two studies have provided evidence that over the short term faster population growth does lead to higher appreciation. In several variations of their model of the housing market, Case and Shiller (1990) found that faster population growth in one year was related to higher appreciation or excess returns for housing in the following year. Bruce Hamilton and Robert Schwab came to the same conclusion in their study of house price appreciation in 49 metropolitan areas. Thus, the evidence for a short-term effect of population growth on house prices is stronger than the evidence for a long-term effect.

The demand for housing is fueled not only by population growth but also by income growth. As incomes rise, more and more individuals or families are able to set up separate households, and people are able to spend more money on housing. But how does this affect the appreciation of a typical house? One fairly consistent result in the literature on housing prices is that greater increases in real income or real income per capita in one year lead to greater increases in real house prices in the following year. Studies by Hamilton and Schwab and Poterba directly support this conclusion. Although Case and Shiller (1990) found little evidence that an increase in real income resulted in a near-term increase in real house prices, they did find evidence that, taking the implicit rent into consideration, real income growth did increase excess returns to housing. A recent study by John Clapp and Carmelo Giaccotto provided indirect evidence of the effect of income growth on house price appreciation. They found that a decline in the unemployment rate in one year was associated with an increase in real house prices in the following year. And usually a decline in the unemployment rate represents an increase in real income.[18]

The weight of the evidence suggests that increases in population and income can result in higher real house prices at least over a one- to three-year period. But the price of housing is

[18]Clapp and Giaccotto did not control for changes in real income. Case and Shiller (1990) found that once income growth was taken into account, employment growth did not affect future price increases or excess returns.

determined not only by factors that affect demand but also by supply considerations such as the cost of building new houses. Are construction costs, then, an indicator of future changes in house prices? Case and Shiller (1990) addressed this question in their study of four major metropolitan areas, and the results were mixed. In many cases, they found that the higher the ratio of construction costs to price, the higher were housing price increases or excess returns in the following year. But this result depended on which metropolitan area was being considered and which other factors were being taken into account.

In trying to identify information that would help predict future increases in house prices, most researchers have looked at the fundamental factors driving housing demand (population and income) or the cost of supplying housing (construction costs). Peter Linneman, however, has taken another tack. Using data from the *Annual Housing Surveys* for the Philadelphia metropolitan area in 1975 and 1978, he identified houses that were undervalued in 1975 based on what their characteristics (number of bedrooms, central air conditioning, etc.) suggested the house should be worth.[19] He found that houses that were undervalued relative to their characteristics in 1975 appreciated more than other houses in the following three years. In many ways, Linneman's experiment mirrors what happens in the housing market. Home buyers shop for the best value based on the features of the house. They purchase the one that has the features they want at the lowest price. Linneman admits that the higher appreciation he observed was not enough to offset any transactions costs that a short-term investor would incur if he tried to buy these undervalued houses and sell them within a three-year period.[20] Thus, the short-term investor could not profit from such a strategy.

Various attempts over the past decade to find indicators of future appreciation of house prices have been at least partially successful. While there is little evidence of any ability to predict abnormal appreciation over the long term, a number of studies have identified indicators of abnormal appreciation over periods ranging from one to three years.

BUT WHO CAN PROFIT FROM THESE PREDICTIONS?

Just because we can predict future price increases from publicly available information does not necessarily imply that the market is not working well. We must also be able to systematically earn an above-normal return from these predictions before we can conclude that the market is not efficient. In February of each year, for example, a gas station operator may be able to predict that the price of gasoline will rise by the Fourth of July. He is not likely to make any abnormal profit from this information, however. If he buys gas for delivery in July, he will have to pay the higher price. If he buys extra gas in February to sell in July, the storage and carrying costs are likely to eat up any extra profit he would have made.

In the housing market, those who already own their homes will profit from any abnormal appreciation whether it is predictable or not. If they can actually predict a higher than normal appreciation over the near term, some may even delay selling their homes to realize

[19]Linneman used the common hedonic regression technique to determine the value of various housing characteristics in 1975. Unfortunately, Linneman did not have market prices for the houses in his sample but only the owners' estimates. He tried to overcome this limitation by redoing his experiment only with houses recently purchased in 1975 on the assumption that estimates by owners of these recently purchased houses would be close to the purchase price. He got the same results with this smaller sample.

[20]Short-term investors who purchase a property based solely on expected capital gain are sometimes referred to as speculators.

that return. But what about those who do not own a house in a market where higher than normal appreciation is predicted over the short term? For these potential buyers, certain features of the housing market make it difficult to earn abnormal returns.

A major difference between buying and selling a house and buying and selling financial investments such as stocks or bonds is the cost associated with the transaction. Discount brokers often charge 0.7 percent or less of the value of the stock to execute a purchase or sell order. For residential real estate the transaction costs include transfer taxes, deed-recording fees, title insurance, loan origination fees, and real estate commissions, and some of these costs can be substantial. For example, loan origination fees are typically 2 to 3 percent of the value of the mortgage, title insurance is usually 0.5 to 1.0 percent of the purchase price of the house, and real estate commissions are typically 6 percent or more of the selling price. For the investor in the housing market these transaction costs may be more of a hurdle than for the homeowner because the investor's after-tax return is likely to be lower. U.S. tax law favors homeowners over investors. Both get to deduct the interest on any mortgage on the property. But homeowners do not have to pay income tax on the implicit rent they receive, and in most cases the capital gain on their primary residence is also exempt from taxes. Therefore, a situation that may present an abnormal after-tax return to a homeowner may not present an abnormal return to an investor. Even for homeowners, however, the prospect of high short-term appreciation may not be enough to induce them to buy a house that is relatively far from where they work or different from the one they prefer. They will want to move to the house of their choice after the period of abnormal appreciation, but the cost of buying and selling a house over a short span of time as well as the cost of moving is likely to wipe out any excess profits the homeowner might have expected.

Besides the costs involved in actually buying and selling houses, the costs of gathering information in the housing market tend to discourage speculation. Housing markets are very localized even within metropolitan areas, and information about one market may not apply to other nearby markets. Information about what is for sale and recent sale prices is available for local markets. However, the prices of otherwise identical houses can differ greatly from one locality to another, and in this sense housing markets are local markets. The cost of gathering information for a small housing market may be almost as great as the cost for a large market, but the number of opportunities to profit from the information on a small market is limited. The investor has to weigh the cost of gathering the information against the profit he can expect to reap from the information. Prospective buyers already in the market for a house might increase their return by shopping around for an undervalued house. Whether they actually increase their return will depend on the costs of searching for the undervalued house, and these costs may vary from buyer to buyer. For example, a person who does not have to travel far to the neighborhood in which he intends to buy will incur lower costs than someone who must travel some distance to search for a house. Search costs may also be lower for someone who can take his time searching because he does not have to move quickly.

CONCLUSION

Most home buyers undoubtedly hope to make a better-than-average return on their investment, and there are even people who speculate in housing, buying units in neighborhoods where they anticipate higher-than-average appreciation. Indeed, some of them may realize abnormally high profits relative to the risk they take on certain investments. Others, of course, lose money on their investment.

But there is no convincing evidence that over the long term speculating in real estate produces abnormal profits relative to the risks involved. Recent economic research has indicated that there are some good indicators of higher-than-average appreciation rates *over the short term.* But the high cost of obtaining that information and of buying and selling houses suggests that investors may not be able to systematically make abnormally high profits in the housing market.

Does this mean that any prospective home buyer wastes his time looking for the "undervalued" house? Not necessarily. The literature suggests he may find such a house. Whether he earns higher-than-average profits depends on the costs of his search.

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