Home Price Appreciation in Low- and Moderate-Income Markets

by Karl E. Case and Maryna Marynchenko

At the turn of the millennium, fully two-thirds of American households were homeowners. In addition, through the middle of 2000, real home prices were rising in all but a handful of major metropolitan areas in the United States. In such a climate, the benefits of homeownership seem obvious. Owners whose property appreciates accumulate wealth, and most are protected from rising out-of-pocket housing costs by fixed or slowly adjusting mortgage rates. Renter households, on the other hand, are hurt by rising real rents, and they see the dream of homeownership becoming ever more elusive.

But is homeownership the solution for all? Clearly, there are periods of time and locations where owning a home has been a liability. Examples of substantial decreases in home values have occurred in recent years in Texas, New England, California, Alaska, and Hawaii. Homeowners are also leveraged, and a home purchase is the biggest investment that most households ever make. A household that puts 10 percent down to purchase a home doubles its money if the home appreciates 10 percent. That same household sees its investment wiped out if home prices fall 10 percent.

Clearly, home price appreciation is only part of the return to investing in a home. The bulk of the return to owning accrues to the owner household in the form of valuable housing services. In addition, there are costs to be considered. The physical structure must be maintained, and even with maintenance, systems become obsolete; property taxes must be paid; mortgage interest rates and origination fees vary with time and by borrower; heating bills and insurance costs can be substantial; and, of course, there may or may not be income tax advantages to owning. Nonetheless, whether or not home prices rise or fall over time will determine to a large extent whether the investment was a good one.

This article, which is adapted from a longer paper available from Harvard University's Joint Center for Housing Studies, shows that metropolitan area housing markets have exhibited substantial differences in their patterns of price appreciation. While some areas have experienced dramatic boom and bust cycles, other areas have experienced relatively steady appreciation. The article shows neighborhood level price changes (measured by zip codes) over a period of 17 years in three major metropolitan areas: Boston, Chicago, and Los Angeles. The three metropolitan areas do not represent a random sample of the U.S. housing market. In some ways they were chosen because their housing markets have behaved very differently over time. While the experiences in three metropolitan areas cannot be generalized to the nation as a whole, we believe much can be learned from studying patterns of price movement across neighborhoods within cities.

at right: Boston, Chicago, and Los Angeles —— the three markets discussed

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Appreciation in Boston, Chicago, and Los Angeles

The Boston market experienced a dramatic boom between 1983 and 1988, with home prices rising at a nominal rate (not adjusted for inflation) of 18 percent annually and at a real rate (adjusted for inflation) of 13.8 percent over the five-year period. During the Boston boom, the low-income portion of the market experienced the highest rates of appreciation. The bottom 10 percent increased at a nominal annual rate of over 20 percent, while the top 10 percent increased at a rate of 17.4 percent. What was remarkable and telling about the price increases in Boston was how uniform and widespread the phenomenon was. Over the period, the average house in eastern Massachusetts appreciated nearly 140 percent, while housing in the poorest 10 percent of zip codes increased more than 165 percent. As a result, over $100 billion was added to household net worth over the five-year period.

Over the next four years, however, Massachusetts and New England as a whole experienced a severe recession. Homeowners who bought near the peak in late 1988 experienced substantial declines in value. In real terms, the total decline was close to one-third. Finally, prices turned around early in 1992 and rose steadily through the end of the observation period in 1998. During this period, the high end of the market substantially out-performed the low end. Nominal price increases in the highest income group of zip codes were three times greater than price increases in the lowest income group of zip codes. In fact, in the bottom decile, real prices actually declined at a rate of 0.5 percent annually over the six-year period.

Figure 1 shows the pattern for the entire period for the top and bottom quintiles. Over the entire boom-bust-recovery cycle, the high-end market did somewhat better than the low-end market but the differences were relatively minor. The highest quintile appreciated in real terms at a rate of 3.7 percent annually; the lowest quintile appreciated in real terms at a rate of 3.0 percent annually.

In Chicago, the pattern is completely different (see Figure 2). Real rates of appreciation were generally steady. Between 1987 and 1992, as in Boston, the top end of the distribution lagged the bottom. The same pattern continued although at a somewhat slower rate between 1992 and 1998. Overall, for the eleven-year period, the poorest neighborhoods did substantially better than the more wealthy neighborhoods. Real appreciation averaged 5.1 percent annually in the bottom decile while averaging only 1.4 percent annually in the top decile.

Los Angeles experienced a substantial boom between 1983 and 1990. The pattern of appreciation was remarkably uniform; virtually all of the 109 zip codes appreciated at approximately the same rate. Between 1990 and 1993, real home prices declined by more than one-third in Los Angeles with the largest drop occurring at the high-end of the distribution. Between 1993 and 1998, home prices in all but the top quintile stagnated in real terms.

Figure 3 shows the pattern in Los Angeles for the top quintile and bottom quintile over the 15 years.

Figure 1 House Appreciation in Boston
Low-End versus High-End Markets

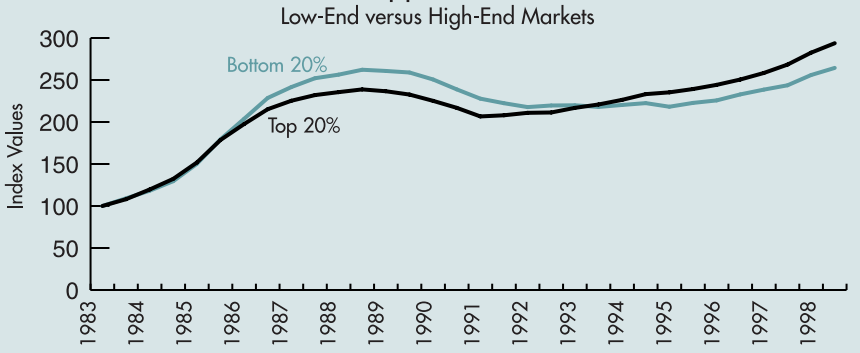


Figure 2 House Appreciation in Chicago
Low-End versus High-End Markets

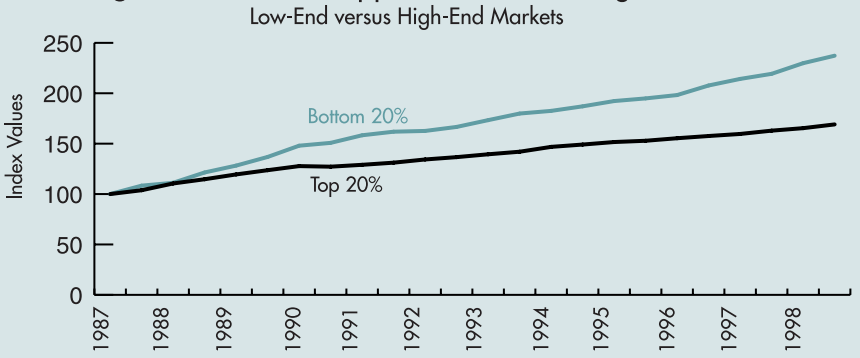
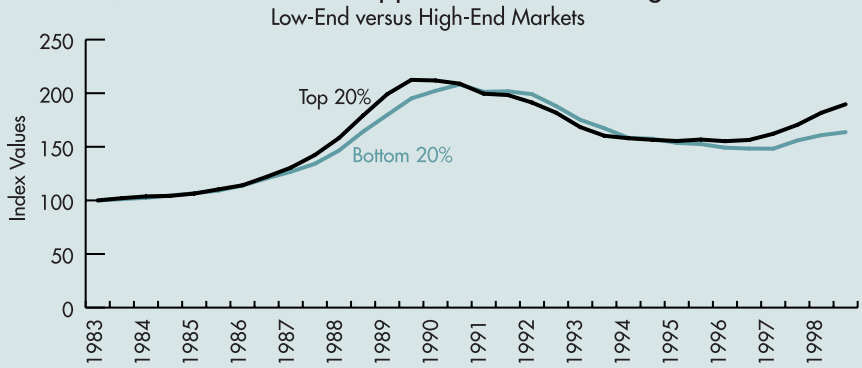


Figure 3 House Appreciation in Los Angeles
Low-End versus High-End Markets



Note: Figures 1 through 3 show nominal values.

During the first seven years of the cycle, top and bottom quintiles experienced similar booms; during the bust, the low-end fell the least; over the last five years of the observation period, the high-end did somewhat better than the low end.

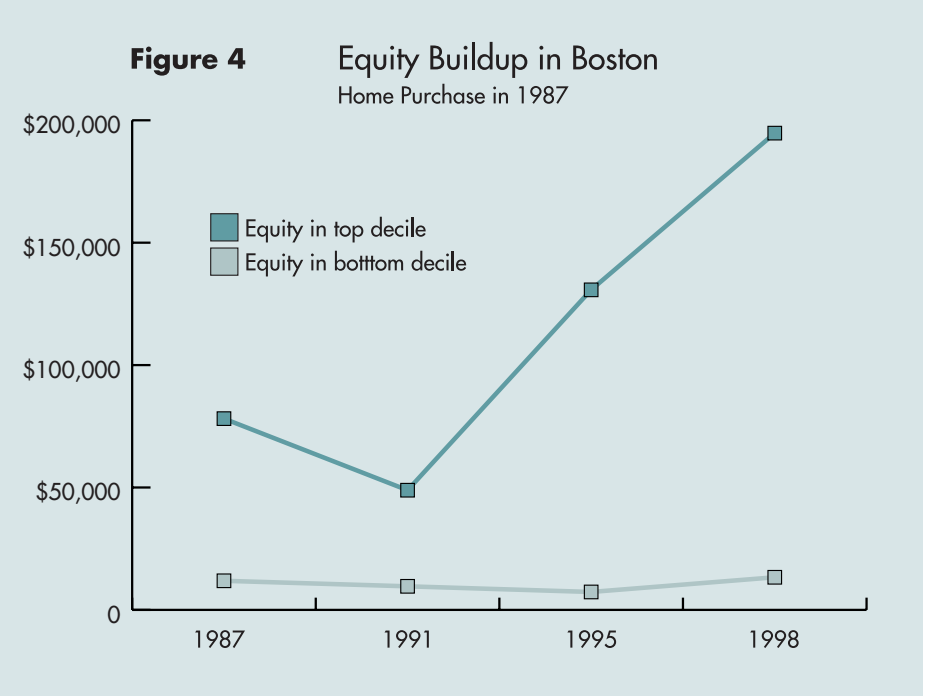
To summarize, while substantial differences in the pattern of home price appreciation and depreciation can be observed across time and across the three metropolitan areas, by and large, lower-income neighborhoods have done reasonably well in comparison with higher-income areas of the same cities.

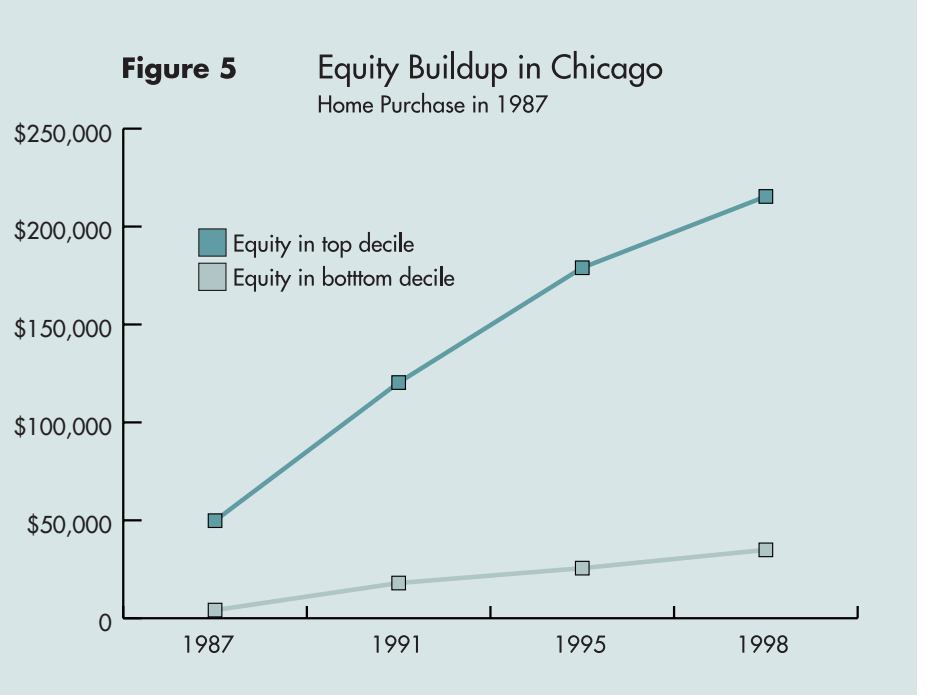
Equity Accumulation in Boston, Chicago, and Los Angeles

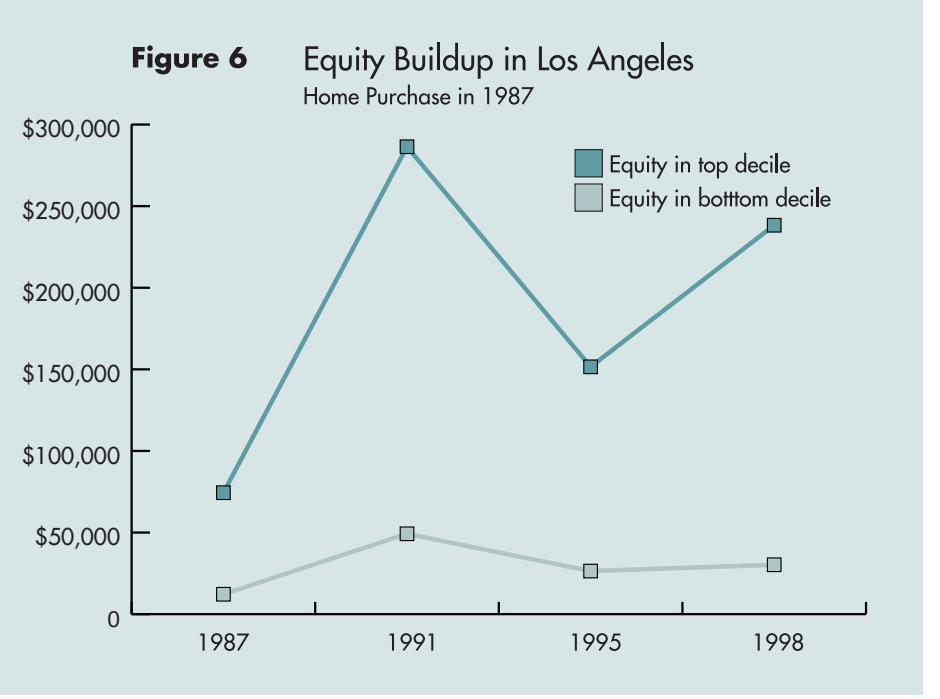
Next, we designed an experiment to estimate the potential wealth accumulation of ownership during different time periods in the three metropolitan areas (see sidebar on page 12). Figures 4 through 6 show equity buildup, assuming an 80 percent mortgage, for the median homebuyer in the top and bottom deciles of zip codes who purchased a home in one of the three markets in 1987.

For example, the median value of houses in the top decile of zip codes in Boston was estimated to be $390,642 in 1987. A household purchasing that house in 1987 would begin with equity of $78,028. By 1991, that equity would have fallen by nearly 40 percent to $48,889. By 1995, however, the household equity would have risen to over $100,000, and by 1998 to nearly $200,000. At the other end of the income distribution, the median value of houses in the bottom decile in Boston was estimated to be $59,426 in 1987. A household purchasing that house would begin with equity $11,885. By 1991, that equity would have eroded to $9,630, and by 1995 it would stand at just $5,518. Finally, by 1998, the investment would have increased to $13,323, producing a nominal leveraged rate of return of just 1 percent.

In Chicago, rates of appreciation have been more steady, and lower-income neighborhoods have consistently outperformed higher-income neighborhoods. Equity would have grown at 14.2 percent annually at the high-end, but equity growth in the lowest decile averaged over 20 percent annually.







Where the Numbers Come From

Broad Trends of Home Appreciation

The patterns of change in home value described in the article are estimated with repeat sales price indexes. Case-Shiller weighted repeat sales indexes were used where available. In addition, the Office of Federal Housing Enterprise Oversight (OFHEO) makes available state level repeat value indexes produced using Fannie Mae and Freddie Mac data. While OFHEO uses a similar index construction methodology, their indexes are in part based on appraisals rather than exclusively on arms-length transactions. Case-Shiller indexes are estimated only with arms-length transactions and use controls, to the extent possible, for changes in property characteristics. Nonetheless, to capture broad movements over long time periods, the indexes tend to track each other quite well.

On average, house prices in the United States have risen 137.8 percent since 1980, while prices in general (measured by the consumer price index) increased 105.9 percent. In addition, house-price increases have exceeded inflation in eight of the nine census regions. Over 20 years, the largest increases have been in New England, the Mid-Atlantic, and the Pacific regions. Only in the West South Central region have house prices fallen in real terms since 1980. During the last year and the last five years, real house prices have increased in all nine census regions.

Comparing Poor and Wealthy Neighborhoods Within a City

To explore appreciation variations within a city, we used zip code level indexes produced by Case Shiller Weiss Inc. We also used the 1990 Census to break the zip codes into groups based on income. This allowed us to compare appreciation among the wealthiest 10 percent of zip codes and the poorest 10 percent of zip codes.

A total of 428 indexes were available from the three metropolitan areas chosen. The Boston data are made up of 235 zip code indexes with observations between the first quarter of 1983 and the second quarter of 1998. The Chicago data represent 84 zip codes with observations between the first quarter of 1987 and second quarter of 1998. The Los Angeles data contain information on 109 zip codes between the first quarter of 1983 and the second quarter of 1998.

Estimating Equity Accumulation

For the second part of the article, we estimated median home value for each zip code grouping from the American Housing Survey. The data contain cross-tabulations of house value and income, which were smoothed together using economic formulas. The most recent releases of data were for 1993 in Boston and 1995 in Los Angeles and Chicago; these figures were then inflated/deflated with Case Shiller Weiss zip code indexes back to 1987 and forward to 1998.

During the same period, a 1987 Los Angeles homebuyer with an 80 percent mortgage would have experienced quite a ride. In the top and bottom deciles between 1987 and 1991, equity roughly quadrupled. For the same homebuyers, the gains from the boom were roughly cut in half by the bust. Gains in equity over the last three years of the observation period in Los Angeles were largely concentrated in the upper-income brackets.

Conclusion

Despite the complex pattern of house-price changes, several things can be concluded. First of all, whether homeownership is a good or bad investment clearly depends on the time of purchase, conditions in the regional economy, and the dynamics of supply and demand at the local level. Second, since home purchase is almost always leveraged, particularly among low-income households, effects of price changes on equity accumulation over particular periods of time can be dramatic.

Among low-income households, homeownership has been an excellent vehicle for asset accumulation since the early 1980s in Boston. The same can be said for low-income homebuyers who purchased in Chicago in 1987 and for homebuyers who purchased in 1995 in any of the three cities. However, significant periods of decline have led to substantial losses for low-income households in Boston and Los Angeles.

Clearly from these data, one cannot conclude that homeownership for low-income households is in general a good or bad strategy for accumulating wealth. As we argued above, home appreciation is but one component of the overall return to an investment in housing. But appreciation is an important component, and the results presented here are at least somewhat encouraging.

About the Authors

Karl E. Case is the Katherine Coman and A. Barton Hepburn Professor of Economics at Wellesley College where he has taught for 25 years. He is also a visiting scholar at the Federal Reserve Bank of Boston. He is a founding partner in the real estate research firm of Case Shiller Weiss, Inc. and serves as a member of the Boards of Directors of the Mortgage Guaranty Insurance Corporation (MGIC), Century Bank, The Lincoln Institute of Land Policy, and the New England Economic Project.

Professor Case received his B.A. from Miami University in 1968, and his Ph.D. in Economics from Harvard University in 1976. He is author or co-author of five books including *Principles of Economics*, *Economics and Tax Policy*, and *Property Taxation: The Need for Reform*, and has published numerous articles in professional journals. For the past 15 years, his research has focused on real estate markets and prices. He has authored several studies that attempt to isolate the causes and consequences of boom and bust cycles and their relationship to regional economic performance.

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