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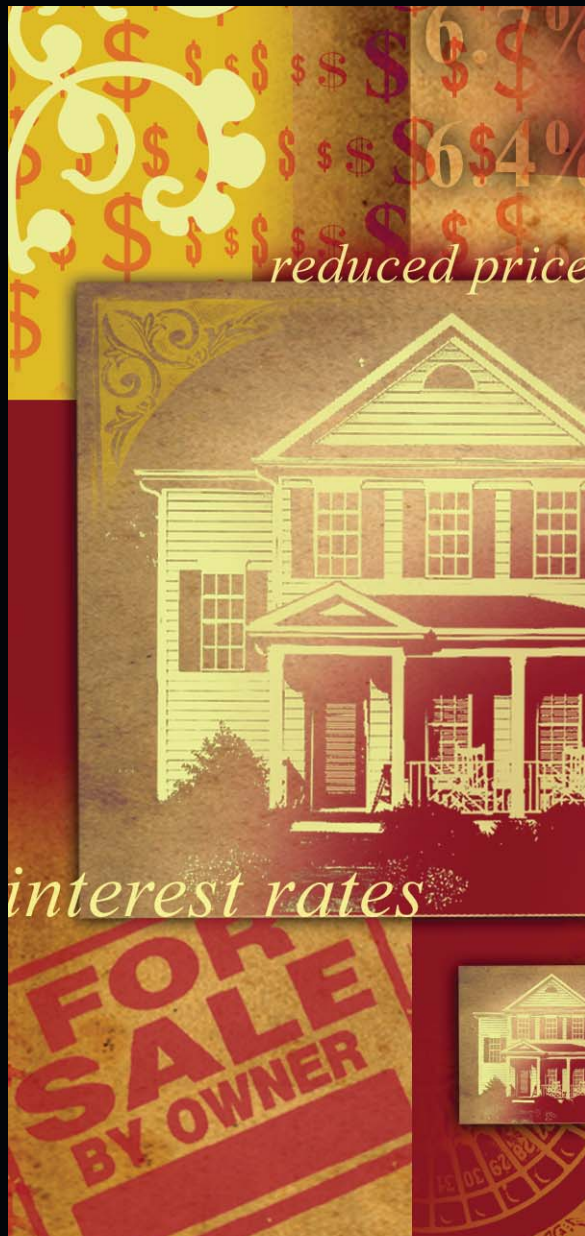
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# IS THERE A BUBBLE IN THE HOUSING MARKET?

KARL E. CASE AND ROBERT J. SHILLER

*While in most instances increases in housing prices are explained by rising incomes, when price growth exceeds income growth, as has been the case in Massachusetts in recent years, the possibility of a “bubble” in housing prices becomes more likely. Professors Case and Shiller investigate the possibility of a housing bubble in Boston and three other cities across the nation, drawing on surveys of home buyers they conducted in 1988 and again in 2003.*

**H**igh and rising housing prices have been a major concern in the metropolitan Boston area since the 1980s. Heightening this concern has been an extraordinary housing-price inflation that started in the mid-1990s and continues up to the present. It has been suggested that the current round of housing-price inflation has the characteristics of a “housing bubble,” and that, like all price bubbles, this one is bound to burst at some point. The popular press is full of speculation that the entire United States, as well as other countries, is in a “housing bubble” that is about to burst. *Barrons*, *Money* magazine, and *The Economist* have all run recent feature stories about the irrational run-up in home prices and the potential for a crash. *The Economist* has had a series of articles with titles like “Castles in Hot Air,” “House of Cards,” “Bubble Trouble,” and “Betting the House.” These accounts have necessarily raised concerns among the general public. But how do we know if the housing market is in a bubble?

The term “bubble” is widely used but rarely clearly defined. We believe that in its widespread use the term refers to a situation in which excessive public expectations of future

price increases cause prices to be temporarily elevated. During a housing-price bubble, homebuyers think that a home that they would normally consider too expensive for them is now an acceptable purchase because they will be compensated by significant further price increases. They will not need to save as much as they otherwise might, because they expect the increased value of their home to do the saving for them. First-time homebuyers may also worry during a housing bubble that if they do not buy now, they will not be able to afford a home later. Furthermore, the expectation of large price increases may have a strong impact on demand: if people think that home prices are very unlikely to fall, and certainly not likely to fall for long, little perceived risk is associated with investment in a home (Case and Shiller 2003).

If expectations of rapid and steady future price increases are important motivating factors for buyers, then home prices are inherently unstable. Prices cannot go rapidly up forever, and when people perceive that prices have stopped going up, this support for their acceptance of high home prices could break down. Prices could then fall as a result of diminished demand: the bubble bursts.

This article has been excerpted from a longer study by the same name, which was published under the auspices of the Brookings Papers on Economic Activity in 2003.

At least one aspect of a housing bubble—the rapid price increases—has clearly been seen recently. A rapid surge in home prices after 2000, as tabulated for example by the Economist Intelligence Service, has been seen in almost all the advanced economies of the world, with the exception of Germany and Japan. In some of these countries, price-to-rental ratios and price-to-average-income ratios are at levels not seen since their data begin in 1975 (*The Economist* 2003).

But the mere fact of rapid price increases is not in itself conclusive evidence of a bubble. The basic questions that still must be answered are whether expectations of large future price increases are sustaining the market, whether these expectations are salient enough to generate anxieties among potential homebuyers, and whether there is sufficient confidence in such expectations to motivate action.

In addition, changes in fundamentals may explain much of the increase. As is shown in the larger report upon which this article is based, income growth alone explains the pattern of recent home price increases in most states. Also, falling interest rates clearly explain much of the recent run-up nationally. However, whereas income alone almost completely explains home price increases in the vast majority of states, Massachusetts is among a small number of states which are characterized by large swings in home prices that exhibit strong inertia and cannot be well explained by income patterns.

To shed light on whether the current boom is a bubble and whether it is likely to burst or deflate, we present the results of a survey conducted in 2003 of people who bought

homes in 2002 in four metropolitan areas: Boston, Los Angeles, San Francisco, and Milwaukee. The survey replicates one we did in these same metropolitan areas in 1988, during another purported housing bubble, after which prices did indeed fall sharply in many cities. The results of the new survey thus allow comparison of the present situation with that one. Our survey also allows us to compare metropolitan areas that have reputedly gone through a bubble recently (Boston, Los Angeles, and San Francisco) with one that has not (Milwaukee).

The notion of a bubble is really defined in terms of people's thinking: their expectations about future price increases, their theories about the risk of falling prices, and their worries about being priced out of the housing market in the future if they do not buy. Economists rarely ask people what they are thinking when they make economic decisions, and some economists have argued that one should never do so (Friedman 1953). We disagree. If questions are carefully worded and people are surveyed at a time close to their making an actual economic decision, then by making comparisons across time and economic circumstances we can learn about how the decisions are made (Bewley 2002).

### The Previous "Housing Bubble"

The period of the 1980s and the declines in housing prices in many cities in the early 1990s are now widely looked back upon as an example, even a model, of a boom cycle that led to a bust. A pattern of sharp price increases, with a peak around

## Housing Supply, Demand, and Affordability in Massachusetts: Some Key Facts

- According to the Office of Federal Housing Enterprise Oversight, between 1980 and 2003 the nation's largest overall percentage increase in housing prices took place in Massachusetts.
- The failure to build enough new housing largely explains why prices increased. Between 1990 and 2000, the number of new households in Massachusetts grew by 8.7 percent, whereas the number of new housing units increased by 6 percent. To keep pace, the state would have needed to produce some seventy thousand more housing units than it did.
- From 1990 to 2000, there was a significant loss of structures for two families, five to nine families, and ten to nineteen families. During the 1990s, 37,563 new multifamily units were created, but 20,236 existing units were lost.
- Between 1990 and 2000, the number of vacant units in Massachusetts declined by nearly forty-eight thousand, mostly in multifamily housing. The supply of vacant single-family homes dropped by 6 percent, whereas the number of vacant units in multifamily buildings dropped by 43 percent.
- From 1990 to 2000, 157,000 single-family homes were built, while only 17,327 new multifamily units were added.
- More land is being used to build fewer houses. From 1971 to 1985, 2 new single-family homes were built per acre used. From 1985 to 2000, single-family housing was built at a density of 1.3 units per acre. This spread of low-density development of single-family housing away from urban job centers contributed to higher amounts of land consumption, and increased the distance that people traveled to work.

Source: Michael Goodman and James Palma, *Winners and Losers in the Massachusetts Housing Market: Recent Changes in Housing Demand, Supply, and Affordability* (Boston: Citizens Housing and Planning Association, 2004)

**Table 1. Change in Average Home Price in Survey Cities during Boom and Bust, 1982–2003 (%)**

Data cover the period 1982 Q1–2003 Q1

Period	Boston	Los Angeles	San Francisco	Milwaukee
<b>1982 to peak</b>	143	128	126	*
Peak quarter	1988:3	1990:2	1990:2	
<b>Peak to trough</b>	–16	–29	–14	*
Trough quarter	1991:1	1996:1	1993:1	
<b>Trough to peak</b>	126	94	129	*
Peak quarter	2003:1	2003:1	2002:3	
<b>Whole period</b>	419	214	325	213
At annual rate	8.2	5.6	7.1	5.6

\* Home prices in Milwaukee displayed no clear peak or trough during the period.  
Source: Fiserv CSW Inc. repeat-sales indexes

1990, followed by a decline in many important cities around the world—including Boston, Los Angeles, London, Sydney, and Tokyo—looks consistent with a bubble.

Housing prices began rising rapidly in Boston in 1984. In 1985 alone, home prices in the Boston metropolitan area went up 39 percent. In a 1986 paper, Case constructed repeat-sales indexes to measure the extent of the boom in constant-quality home prices. The same paper reported that a structural supply-and-demand model, which explained home-price movements over ten years and across ten cities, failed to explain what was going on in Boston. The model predicted that income growth, employment growth, interest rates, construction costs, and other fundamentals should have pushed Boston housing prices up by about 15 percent. Instead, they went up over 140 percent before topping out in 1988. The paper ended with the conjecture that the boom was at least in part a bubble.

### The 1988 Survey

In our 1988 paper we presented the results of a survey of a sample of 2,000 households that bought homes in May 1988 in four markets: Middlesex County, Massachusetts (suburban Boston); Orange County, California (suburban Los Angeles); Alameda County, California (suburban San Francisco); and Milwaukee County, Wisconsin. The four locations were chosen to represent hot (California), cooling (Boston), and steady (Milwaukee) markets. The survey was inspired in part by an article on page 1 of the June 1, 1988, *Wall Street Journal*, which described the current “frenzy in California’s big single family home market” and included colorful stories of angst and activity in the housing market there (Nomani 1988). We wanted to find out what was going on in California and compare it with other places in a systematic way.

The results of that survey provide strong evidence for some parameters of a theory that a housing bubble did exist in 1988: that buyers were influenced by an investment motive, that they had strong expectations about future price changes in their housing markets, and that they perceived

little risk. Responses to a number of questions revealed that emotion and casual word of mouth played a significant role in home-purchase decisions. In addition, there was no agreement among buyers about the causes of recent home price movements and no cogent analysis of the fundamentals.

One additional finding in our 1988 paper lends support to an important stylized fact about the U.S. housing market that has not been well documented in the literature, namely, that home prices are sticky downward. That is, when excess supply occurs, prices do not immediately fall to clear the market. Rather, sellers have reservation prices below which they tend not to sell. This tendency not to accept price declines is connected with a belief that prices never do decline, and with some of the parameters of thinking that underlie a housing bubble.

### Homebuyer Behavior in Four Metropolitan Areas, 1988 and 2003

Before we present the results of a virtually identical survey done in 2003, we describe home-price behavior in the four survey areas. Although the timing was not identical, Boston, Los Angeles, and San Francisco have experienced two boom cycles and a bust in housing prices over the last twenty years. Table 1 describes the timing and the extent of these cycles.

The first boom in California was similar in Los Angeles and San Francisco. Prices in both metropolitan areas peaked in the second quarter of 1990 after a 127 percent nominal (55 percent real) run-up, which began slowly, gradually accelerated into 1988, and then slowed as it approached the peak. The first boom in Boston was also similar, but it accelerated earlier and actually peaked in the third quarter of 1988 after a 143 percent nominal (more than 100 percent real) increase.

The bust that followed was most severe and longest lived in Los Angeles, where prices dropped 29 percent in nominal terms (40 percent in real terms) from the peak to a trough in the first quarter of 1996. Prices in San Francisco dropped

only 14 percent (20 percent real) from the 1990 peak and began rising again in the first quarter of 1993, three years earlier than in Los Angeles. Boston was on the mend two years earlier than that. All three metropolitan areas have seen a prolonged boom ever since, although San Francisco has shown some volatility since mid-2002. Nominal home prices during this boom rose 126 percent in Boston, 129 percent in San Francisco, and 94 percent in Los Angeles, despite very low overall inflation. At the time participants in the second survey sample were buying their homes, prices were still rising in all four metropolitan areas.

The price index for Milwaukee could not be more different. It shows a very steady climb at a rate of 5.6 percent annually, essentially the same rate of growth as income per capita. Interestingly, over the entire cycle, Milwaukee did about as well as Los Angeles, although not as well as Boston or San Francisco. Home prices in Boston increased more than fivefold in nominal terms over the cycle, while prices in San Francisco quadrupled and prices in both Milwaukee and Los Angeles tripled.

Three of the four metropolitan areas—Boston, Los Angeles, and San Francisco—show pronounced cycles. These three might be called glamour cities, in that they

are the home of either international celebrities, or the entertainment industry, or world-class universities, or high-technology industries, and the prices of homes in these metropolitan areas are high as well as volatile.

Table 2 looks at the latest boom cycle in a bit more detail. In all three states, home price increases outpaced income growth. (Note that the price increases are not as great as in the metropolitan area data because the indexes are for the entire state.) All three states had increases in their ratios of home price to annual income, but the changes were dramatically larger in the boom-and-bust states.

### Survey Method

A random sample of 500 home sales was drawn from each of the same four counties as in our 1988 survey, and so we can make comparisons with these earlier results. We also used the very same questionnaire that we used in our 1988 survey, adding only several new questions at the end, so there was no change in the context of any questions. The accompanying letters were essentially similar to those of 1988.

The survey was sent to 2,000 persons who had bought homes between March and August 2002. These dates fall just before the peak in media usage of the term “housing bubble” in October 2002. Questionnaires with personalized letters to the respondents were mailed in January 2003, a reminder postcard was sent in February, and replacement questionnaires with personalized letters were again sent to those who had not responded in March. These dates were just after the peak in media use of the term “housing bubble.” Thus we managed to get our questionnaire survey out at a time when attention to the possibility of a housing bubble must have been close to its maximum. Our respondents had the opportunity to participate in the real-estate market at a time of intense public attention to the possibility of a bubble and had the opportunity to read and think about this experience for some months afterward. This is what we wanted to do, since our purpose was to gauge human behavior during a purported bubble. Just under 700 questionnaires were returned completed and usable in the 2003 survey, for a somewhat lower response rate than in the 1988 survey.

At the time of the 2003 survey, the economy was recovering from the recession that had ended in November 2001, but the

**Table 2. Home Prices, Personal Income, and Mortgage Payments, Selected States, 1995 and 2002**

Current dollars except where stated otherwise

Measure	Massachusetts	California	Wisconsin
<b>HOME PRICES</b>			
1995:1	121,091	158,954	50,557
2002:3	231,994	276,695	73,071
Total change (%)	92.0	74.0	45.0
At annual rate (%)	9.1	7.7	5.1
<b>PERSONAL INCOME PER CAPITA</b>			
1995:1	27,224	24,044	22,203
2002:3	39,605	33,362	30,138
Total change (%)	45.0	39.0	35.0
At annual rate (%)	5.1	4.5	4.1
<b>RATIO OF HOME PRICE TO INCOME PER CAPITA</b>			
1995:1	4.45	6.61	2.28
2002:3	5.86	8.29	2.42
<b>ANNUAL MORTGAGE PAYMENT*</b>			
1995:1	9,253	12,145	3,862
2002:3	13,338	15,908	4,201
<b>RATIO OF MORTGAGE PAYMENT TO INCOME PER CAPITA</b>			
1995:1	0.34	0.51	0.17
2002:3	0.34	0.47	0.14

\* Assumes thirty-year fixed-rate mortgage at 80 percent loan to value at annual interest rate of 8.8 percent (February 1995) or 6.0 percent (August 2002).

Sources: Bureau of Economic Analysis, Economy.com, Fannie Mae, U.S. Bureau of the Census data adjusted using CSW or blended repeat-sales indexes

**Table 3. Characteristics of Respondents' Home Purchases (%)**

	Boston		Los Angeles		San Francisco		Milwaukee	
	1988	2003	1988	2003	1988	2003	1988	2003
Single-family home	39.7	97.5	70.0	95.2	55.9	96.4	71.1	91.6
First-time purchase	51.5	41.6	35.8	31.7	36.2	46.0	56.9	53.1
Bought as primary residence	92.0	97.1	88.4	95.6	72.7	93.3	88.2	90.0
Bought to rent to others	3.0	0.9	3.7	2.8	12.1	3.0	4.1	5.3

recovery was slow, and the National Bureau of Economic Research had not yet announced that the recession was over. In contrast, at the time of our 1988 survey, there had been no recession for several years. In addition, the Federal Reserve had lowered interest rates to historic lows at the time the buyers in our 2003 survey were signing purchase-and-sale agreements. In 1988, in contrast, interest rates were on the rise.

Table 3 describes the sample. A substantial majority of buyers were buying as a primary residence, and only a small minority were buying to rent. First-time buyers were a majority of the sample in Milwaukee. The lowest percentage of first-time buyers was in Los Angeles. We were surprised to see that, in the 2003 survey, more than 90 percent of the homes purchased in all four markets were single-family homes, a much larger share than in the 1988 survey. We have no explanation as yet for this difference.

**Survey Results**

The results of the 2003 survey, presented in tables 4 and 5, shed light on a number of aspects of home-buying behavior that suggest the presence or absence of a bubble in home prices—including investment motivations and the expectation of further price rises, the amount of local excitement and discussion about real estate, the sense of urgency in

buying a home, adherence to simplistic theories about housing markets, the occurrence of sales above asking prices, and perceptions of risk.

**Housing as an Investment.** A tendency to view housing as an investment is a defining characteristic of a housing bubble. Expectations of future appreciation of the home are a motive for buying that deflects consideration from how much one is paying for housing. That is what a bubble is all about: buying for the future price increases rather than simply for the pleasure of occupying the home. And it is this motive that is thought to lend an instability to bubbles, a tendency to crash when the investment motive weakens.

Table 4 presents the responses to questions about housing as an investment. For the vast majority of buyers, either investment was “a major consideration” or they at least “in part” thought of their purchase as an investment. In Milwaukee and San Francisco, investment was a major consideration for a majority of buyers. This tendency to view housing as an investment is similar to what it was in the boom period that we observed in our 1988 survey, although somewhat weaker. Far fewer of the homebuyers in 2003 said that they were buying “strictly for investment purposes.” Thus conditions reported in 2003 would appear to be consistent with a bubble story, although less so than they were in 1988.

**Table 4. Survey Responses on Housing as an Investment, 1988 and 2003 (%)**

	Boston		Los Angeles		San Francisco		Milwaukee	
	1988	2003	1988	2003	1988	2003	1988	2003
<b>In deciding to buy your property, did you think of the purchase as an investment?</b>								
It was a major consideration	48.0	33.9	56.3	46.8	51.8	63.8	44.0	50.3
In part	45.0	56.2	40.3	46.2	34.4	31.7	45.7	42.2
Not at all	7.0	9.9	4.2	7.0	9.8	4.5	10.3	7.5
<b>Why did you buy the home that you did?</b>								
Strictly for investment purposes	15.6	8.2	19.8	7.5	10.6	37.2	18.7	13.8
<b>Buying a home in [city] today involves:</b>								
A great deal of risk	5.1	7.8	3.4	7.9	14.8	4.2	5.9	4.3
Some risk	57.9	62.5	33.3	47.5	51.9	40.1	64.6	57.3
Little or no risk	37.1	29.6	63.3	44.6	33.3	55.7	29.5	38.4



The apparent attractiveness of housing as an investment is further enhanced if the buyer perceives that the investment entails only very little risk. As table 4 also shows, in all cities in both 1988 and 2003, only a small percentage of buyers thought that housing involved a great deal of risk, although the fraction seeing a great deal of risk rose (perhaps not surprisingly) to a fairly high level (14.8 percent) in San Francisco in 2003. In three of the four cities (Milwaukee being the exception), there was more perception of risk in 2003 than there had been in 1988, which is what one would expect given all the media attention to bubbles in 2003. Even so, the perception of risk of price decline is small: one may say that homebuyers did not perceive themselves as in a bubble.

**Exaggerated Expectations, Excitement, and Word of Mouth.** Table 5 gets to the meat of the housing bubble issue: the role of price expectations, the emotional charge, and the extent of talk about real estate. Expectations about the future price performance of homes were high in both 1988 and 2003. In both of these housing booms, roughly 90 percent or more of respondents expected an increase in

home prices over the next several years, and the average expected increase over the next twelve months was very high, even surpassing 9.8 percent in San Francisco in 2003.

But it is the long-term (ten-year) expectations that are the most striking. When asked what they thought would be the average rate of increase per year over the next ten years, respondents in Boston gave an average reply of 14.6 percent; in Los Angeles respondents gave an average reply of 13.1 percent; and in San Francisco they were even more optimistic, at 15.7 percent. In Milwaukee it was 11.7 percent. Note that even a rate of increase of only 11.7 percent a year means a tripling of value in ten years. Thus, although the one-year expectations in the glamour cities were lower in 2003 than they had been in 1988, the ten-year expectations were even higher. (In comparison, the 1988 ten-year expectations were 8.7 percent in Boston, 14.3 percent in Los Angeles, 14.8 percent in San Francisco, and 7.3 percent in Milwaukee.)

Fewer respondents in 2003 said that it was a good time to buy a home because prices might be rising in the future, but in all four cities, at least two-thirds agreed with the

**Table 5. Survey Responses on Price Expectations, Sense of Excitement, and Talk, 1988 and 2003 (%)**

	Boston		Los Angeles		San Francisco		Milwaukee	
	1988	2003	1988	2003	1988	2003	1988	2003
<b>Do you think that housing prices in the [city] area will increase or decrease over the next several years?</b>								
Increase	90.2	83.1	98.3	89.7	99.0	90.5	87.1	95.2
Decrease	9.8	16.9	1.7	10.3	1.0	9.5	12.9	4.8
<b>How much of a change do you expect there to be in the value of your home over the next 12 months?</b>								
Mean response (percent)	7.4	7.2	15.3	10.5	13.5	9.8	6.1	8.9
<b>On average over the next 10 years, how much do you expect the value of your property to change each year?</b>								
Mean response (percent)	8.7	14.6	14.3	13.1	14.8	15.7	7.3	11.7
<b>It's a good time to buy because housing prices are likely to rise in the future.</b>								
Agree	77.8	66.1	93.2	77.0	95.0	82.1	84.8	87.0
Disagree	22.2	33.9	6.8	23.0	5.0	17.9	15.2	13.0
<b>Housing prices are booming. Unless I buy now, I won't be able to afford a home later.</b>								
Agree	40.8	37.1	79.5	48.8	68.9	59.7	27.8	36.4
Disagree	59.2	62.9	20.5	51.2	31.1	40.3	72.2	63.6
<b>There has been a good deal of excitement surrounding recent housing price changes. I sometimes think that I may have been influenced by it.</b>								
Yes	45.3	29.6	54.3	46.1	56.5	38.5	21.5	34.8
No	54.7	70.4	45.7	53.9	43.5	61.5	78.5	65.2
<b>In conversations with friends and associates over the last few months, conditions in the housing market were discussed...</b>								
Frequently	30.3	31.0	52.9	32.9	49.7	37.4	20.0	27.6
Sometimes	55.1	53.7	38.2	50.3	39.0	43.6	50.2	40.5
Seldom	12.1	14.3	8.0	14.7	9.7	17.2	25.1	28.1
Never	2.5	1.0	0.8	2.1	1.5	1.8	4.7	3.8



statement. Many thought not only that now was a good time to buy, but that there was a risk that delay might mean not being able to afford a home later.

The number who admitted to being influenced by “excitement” about home prices was still high, close to 50 percent in Los Angeles, but lower than in 1988. The amount of talk was nearly as high as in 1988, and talk is an important indicator of a bubble, since word-of-mouth transmission of the excitement is a hallmark.

We conclude that these general indicators of the defining characteristics of bubbles were fairly strong in 2003. However, they were generally less strong than in 1988 in the glamour cities and stronger than in 1988 in Milwaukee.

### Is a Housing Bubble about to Burst?

Clearly, one can construct an argument that home price increases nationally since 1995 have been driven by fundamentals. For more than forty states, income growth alone explains virtually the entire increase in housing prices, and falling interest rates have reduced financing costs sufficiently to keep the ratio of annual mortgage payments to income from rising even in the boom states of Massachusetts and California. In the vast majority of states housing is actually more affordable than it was in 1995.

Nonetheless, our analysis indicates that elements of a speculative bubble in single-family home prices—the strong investment motive, the high expectations for future price increases, and the strong influence of word-of-mouth discussion—exist in some cities. For the three glamour cities we studied, the indicators of bubble sentiment that we documented remain, in general, nearly as strong in 2003 as they were in 1988. Some of these are surprisingly high in 2003, notably the ten-year expectations for future price change, where the average expected annual price increase is in the 13–15 percent range for all these cities. Even our fourth city, Milwaukee, is perhaps showing some bubble sentiment, for the expected annual price increase for the next ten years there is 11.7 percent. (This subject is considered in more detail in the original study.)

All of the fundamental measures of bubble activity—the expectations, the sense of opportunity and urgency, the excitement and amount of talk—are generally down from their levels in 1988 in the glamour cities, but up from their levels of 1988 in Milwaukee. (Long-run expectations, however, are generally up substantially from 1988. If long-run expectations matter most, one might say that exuberance in 2003 is just as strong as it was in 1988.) Most people do not perceive themselves in 2003 as in the midst of a bubble, despite all the media attention to the possibility. However, neither did people perceive themselves in a bubble in 1988, after which real prices fell sharply in many cities.

Although these indicators do not suggest such strong evidence of a bubble as was observed in 1988, it is reasonable to suppose that in the near future, price increases will stall, and that in some cities prices will even decline. We have seen that people are not as confident of real-estate prices as they were even before the 1980s real-estate bubble burst, and this lack of confidence may translate into an amplification of any price declines. Real home prices are already flat in Denver and Detroit, following periods of rapid growth. More declines in real home prices will probably come in cities that have been frothy, notably including some cities on both coasts of the United States, and especially those that have weakening economies. This certainly could include Boston.

The consequences of such a fall in home prices would be severe for some homeowners. Given the high average level of personal debt relative to personal income, an increase in bankruptcies is likely. Such an increase could potentially worsen consumer confidence, creating a renewed interest in replenishing savings.

Personal consumption expenditure, which has driven the economy so far in the current recovery, may drop, stalling the recovery. However, judging from the historical record, a nationwide drop in real housing prices is unlikely, and the drops in different cities are not likely to be synchronous: some will probably not occur for a number of years. Such a lack of synchrony would blunt the impact on the aggregate economy of the bursting of housing bubbles. ◀

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