

Asset Prices, Monetary Policy, and Bank Regulation¹

By Robert J. Shiller²

We are living in an economy that is influenced by asset price speculation as never before. In the 1990s the US stock market saw its biggest price increases since the 1920s, followed by a sharp downward correction after 2000. After 2000, the US housing market appears to be showing its biggest price increases ever, or at least since 1890, and now is apparently showing signs of slowdown or possible reversal.

The wealth effect of these successive booms has substantially driven the US economy over these years. The undoing of these booms could mark the beginning of the next economic downturn. Every recession is different, and with the highly speculative nature of the economy now, the next recession may be spurred by speculative price changes in a pattern that is unfamiliar to those who read business cycle history.

These booms cannot be explained well by the recent declines in interest rates. Nominal rates had been declining since the 1980s, and not suddenly in the late 1990s or early 2000s. Moreover, the correlation since 1880 of price-earnings ratios with nominal long-term interest rates has been very weak overall. The same is true of long-term real rates: virtually no correlation with price-earnings ratios. No one has ever shown a convincing explanation of the ups and downs of the stock market or housing market in terms of economic fundamentals.

We are left with human psychology as a major driver. The recent booms in the real estate market and the housing market have been boosting demand for these investments and thus their prices, at least for now. Part of this psychology is excitement at seeing people make a lot of money. Part of it is envy of others' successes. Part of it is a sense of weakening lending standards and weakening sense of responsibility of financial companies to encourage the public toward sensible, and not exaggerated, aspirations.

At a time of a speculative boom in real estate, market participants find themselves in a moral dilemma: lenders cannot easily maintain their high lending standards and stay competitive when other lenders are weakening standards. At this time, regulators of lending institutions have some of their most important work to do, and, at the same time, it is especially difficult for them to do it.

At a time of a speculative boom, a conventional wisdom tends to take hold that is influenced by the financial concerns of business economists. Economists who are supported by the construction industry, the real estate brokerage industry and the

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mortgage industry may well be told by their superiors not to issue any dire warnings about the possible deflation of housing prices. By sheer repetition, their conventional view becomes established.

Speculative booms and busts pose exceptional problems for regulators because the very existence of a boom will always be controversial. Speculative bubbles appear to be irrational only in the sense that most people have not done a careful study of data and historical events which might give them a better intellectual perspective, and because the experts who advise them are not doing that either, or are not disinterested.

A speculative bubble is a bit like an optical illusion. In his book *Inevitable Illusions*, the psychologist Massimo Piattelli-Palmarini documented that there are a wide variety of mistaken impressions—like optimal illusions that psychologists have documented, but not just of the visual anomaly variety—that most people are vulnerable to. He gives an example: while most people know at some level that the peninsula that constitutes Italy does not run exactly due north and south, very few really comprehend that it in fact runs northwest-Southeast, at very nearly a 45 degree angle from a north-south line. People will make gross errors when asked about relative positions of cities, for example, thinking that Brussels lies due north of Naples, when in fact Budapest does. It is significant that *most* people make the same mistake. Nobody thinks that Italy runs due east-west, even though that is just as good an approximation as due north-south is. This means that the errors people make can potentially have aggregate significance because the mistakes do not average out across people.

By analogy, it has increasingly seemed to many or most Americans in recent years that economic growth is inevitable and that either the stock market or real estate will make us wealthy. This intuitive feeling is part of the reason for the highly anomalous behavior of the personal savings rate, now in negative territory. People feel little impetus to save if they are about to make so much money in the appreciation of their homes.

A 2006 survey by the National Association of Realtors concluded that a quarter of all Americans born from 1946 to 1964—the baby boomers—each own more than one real estate property. In some booming areas the fraction is even higher, motivated obviously by the expectations of further price increases.

These same boomers do not seem to have put together in their minds the kind of changes in demand their own retirement will have on the urban property markets where their primary real estate investment tends to be. Since 60% of the boomers indicate that they want to retire to a rural place or small town, and only 12% will stay in an urban environment, there may be massive future sales of urban properties.

Despite these facts, people in US cities have generally accelerating—and exaggerated—expectations for future home prices. In an annual survey that Karl Case and I have been conducting under the auspices of the Yale School of Management, we ask the following question: “On average over the next ten years, how much do you expect the value of your home to change each year?” In the boom city Los Angeles, the average answer rose from

13.0% in 2003 to 22.5% in 2004 and 22.7% in 2005. This is in contrast to the expectations in the historically stable and, and apparently relatively unexciting, city Milwaukee, where price expectations rose from 11.4% in 2003 to 13.4% in 2004 and to 13.6% in 2005. The price expectations are increasing there too, but less dramatically.

All these expectations are way out of line with historical experience. Real (inflation-corrected) US home prices have increased only 0.4% a year, after correction for inflation, between 1890 and 2004.

Prof. Piet Eichholtz of the University of Maastricht has derived repeated measures indexes of both home prices and of apartment rents in the city of Amsterdam going back to the year 1628. He finds no significant uptrend in either series. Both series appear to be mean-reverting, though only slowly. Major price increases are eventually reversed, but by no means rapidly. The home price series is significantly more volatile than the rent series, paralleling results that I found for the U.S. stock market when dividends or earnings are compared with prices.

Why do people have the mistaken impression that home prices are sure to increase? Perhaps it is due to a kind of intuitive extrapolation from recent price increases. Whatever the reason is, such expectations have become engrained into people's thinking.

There seems to be no public recognition of the fact that real home prices in major US cities have been significantly more volatile than real rents through time. That this is so can be seen by comparing the S&P/Case-Shiller Home Price Indexes, deflated by the Consumer Price Index, with Rent on Primary Residence, also deflated by the Consumer Price Index. The home price series is much more volatile than the rent series, especially recently. Las Vegas and Miami are conspicuous examples: real rents have hardly fluctuated there, while home prices have taken off like rockets in the past few years.

There is reason to expect that the Price-Rent ratio should be mean reverting, just as the price-earnings ratio in the stock market has been. With record highs for this ratio now, there is a worry that it will collapse in the future.

It is peculiar that so many people think that home prices can only rise, and rise significantly. It is peculiar that people have such an illusion when there were sharp falls in home prices in the United States in the early 1990s in many cities. Why would so many people forget this? It is apparently the same kind of illusion that Piattelli-Palmarini described. An expert, or anyone who just takes the trouble to look at a map, can know what the slope of the Italian peninsula is and can know the historical average rates of price increase in housing, but can do little or nothing to correct the false impression among the public.

If experts are enabled to trade freely in real estate markets without substantial transaction costs, then any egregious misconception among the investing public will be exploited by professional investors, who ought to eliminate any obvious, short-run profit opportunities. Speculative booms will still exist, they will tend to be less dramatic.

The rate of increase of US home prices has increased just about every year since 1991. This is the sort of egregious form of market inefficiency that would tend to be eliminated by professional traders, if they found it easy to trade in homes.

It is unfortunate that the boom in real estate has been allowed to go on so long, for a correction in real estate prices may well lead to a recession. Drops in residential investment have long been a leading indicator for recessions. Drops in home prices have not been noted as leading indicators, but that may be because, at least for the last half century, such drops have been rare. The drops in real home prices associated with the end of the 1970s boom in home prices correspond to the recession of 1981-82, and the drops in real home prices associated with the end of the 1980s boom in home prices correspond to the recession of 1990-91, but these are not the only factors that brought on those recessions.

The recent boom in home prices is, however, much stronger than any predecessor boom, and so there is concern that home prices may drop further than before.

Public concern about the present situation has been muted because there is no precedent for such a situation. Home prices have never risen so dramatically over wide swaths of the United States before. The closest counterpart is the increase in home prices that occurred right after World War II, but that boom was clearly caused by fundamentals, the restrictions on construction during the war and the baby boom that followed the war. The present boom is driven by no such fundamentals, and appears to be different, to be speculative.

To help appreciate how unique the present time is, note that the use of the term “real estate bubble” was virtually nil until 2002, when it exploded. In contrast, the term “real estate boom” has a very long history, extending back into the 19th century, but it typically referred to a time of a high level of residential construction. Real estate markets in the US appear just not to have been so speculative except in certain regions. .

It is not easy for regulators to correct speculative excesses. A fundamental problem for regulators is that they just do not have any way to demonstrate their authority in judging whether there is a bubble. Regulators also have a problem that they must not create more problems by interfering with markets than they solve. They must not interfere with financial innovation, but, at the same time, they must not acquiesce in the improper use of financial innovations.

Adjustable rate mortgages are financial devices that have their proper use. They are appropriate for people who plan to move soon, who should not be paying the higher rates of long-term fixed rate mortgages. But adjustable-rate mortgages can (and apparently have been) abused in recent years by lenders eager to lend to people beyond their means.

Option ARMS have their use too. They are appropriately issued to people who have highly variable income, and for whom each month’s mortgage payment presents a

different situation. But, they too have been used to allow people to buy a home that is more expensive than they can afford.

Lenders' behavior in making such loans probably has reflected their own beliefs about the outlook for housing. So long as lenders share the same optimistic beliefs about home prices, they will feel that they have done a good thing helping their clients get onto the property ladder.

However, many lenders are actually expecting a crash. A survey of lenders by Phoenix Management Services "Lending Climate in America" survey announced in April 2006, "Two-thirds of lenders nationwide believe a real estate bubble currently exists in the United States," and "A significant 93 percent of lenders surveyed expect an anticipated housing correction to result in real estate prices declining 10 to 20 percent across the country."

Regulators have not interfered with lending because our regulatory system is not designed to deal with speculative movements. The concept of our regulation is not to prevent bubbles, and the responsibility for regulating lenders is divided up across a number of agencies.

As a result, we may see some dislocations in our economy. Prices in real estate may fall, and the decline in confidence may then occur. Such an event might be imminent, though one can never be sure. The March consumer sentiment numbers from the University of Michigan are sharply down, and the idea that the declining home market is surely part of the story.

Fortunately, there are new markets that will allow professional traders to enter the housing market. In fact, next Monday, May 22, 2006, the Chicago Mercantile Exchange, in an alliance with the firm that Allan Weiss, Sam Masucci and I co-founded, MacroMarkets LLC, will make the historic step of initiating trading in futures and options for home prices, both that are cash-settled using the S&P/Case-Shiller Home Price Indexes that were originally developed by Prof. Karl Case and me, and that are now produced jointly by Fiserv Inc. and Standard & Poor's. There will be futures and options markets for ten US cities. If it succeeds, this will be the first true futures market for single family homes in the world.

With a futures market, drops in home prices will not be so clearly dangerous to the economy. The futures market may give us ample warnings of these price drops by producing a backwardation in the market. The price discovery allowed in these markets will allow individuals and corporations to anticipate problems caused by price movements. The hedging opportunities provided by these markets will allow people to protect themselves from the risks of price declines on their own economic interests. The new investment opportunities will allow investors to diversify their portfolios to include a broad portfolio of real estate.

These new markets are only beginning. More broadly, the important lesson to draw is that the present economic situation presents an interesting case of rapid financial innovation at the same time as rampant speculation. We may need inspired leadership from our financial authorities to assure that the coming years maintain their full potential for economic progress.

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