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Economic View

How a Bubble Stayed Under the Radar

By ROBERT J. SHILLER

ONE great puzzle about the recent housing bubble is why even most experts didn't recognize the bubble as it was forming.

Alan Greenspan, a very serious student of the markets, didn't see it, and, moreover, he didn't see the stock market bubble of the 1990s, either. In his 2007 autobiography, "The Age of Turbulence: Adventures in a New World," he talks at some length about his suspicions in the 1990s that there was irrational exuberance in the stock market. But in the end, he says, he just couldn't figure it out: "I'd come to realize that we'd never be able to identify irrational exuberance with certainty, much less act on it, until after the fact."

With the housing bubble, Mr. Greenspan didn't seem to have any doubt: "I would tell audiences that we were facing not a bubble but a froth — lots of small local bubbles that never grew to a scale that could threaten the health of the overall economy."

The failure to recognize the housing bubble is the core reason for the collapsing house of cards we are seeing in financial markets in the United States and around the world. If people do not see any risk, and see only the prospect of outsized investment returns, they will pursue those returns with disregard for the risks.

Were all these people stupid? It can't be. We have to consider the possibility that perfectly rational people can get caught up in a bubble. In this connection, it is helpful to refer to an important bit of economic theory about herd behavior.

Three economists, Sushil Bikhchandani, David Hirshleifer and Ivo Welch, in a classic 1992 article, defined what they call "information cascades" that can lead people into serious error. They found that these cascades can affect even perfectly rational people and cause bubblelike phenomena. Why? Ultimately, people sometimes need to rely on the judgment of others, and therein lies the problem. The theory provides a framework for understanding the real estate turbulence we are now observing.

Mr. Bikhchandani and his co-authors present this example: Suppose that a group of individuals must make an important decision, based on useful but incomplete information. Each one of them has received some information relevant to the decision, but the information is incomplete and "noisy" and does not always point to the right conclusion.

Let's update the example to apply it to the recent bubble: The individuals in the group must each decide whether real estate is a terrific investment and whether to buy some property. Suppose that there is a 60 percent probability that any one person's information will lead to the right decision.

In other words, that person's information is useful but not definitive — and not clear enough to make a firm judgment about something as momentous as a market bubble. Perhaps that is how Mr. Greenspan assessed the probability that he could make an accurate judgment about the stock market bubble.

The theory helps explain why he — or anyone trying to verify the existence of a market bubble — may have squelched his own judgment.

The fundamental problem is that the information obtained by any individual — even one as well-placed as the chairman of the Federal Reserve — is bound to be incomplete. If people could somehow hold a national town meeting and share their independent information, they would have the opportunity to see the full weight of the evidence. Any individual errors would be averaged out, and the participants would collectively reach the correct decision.

Of course, such a national town meeting is impossible. Each person makes decisions individually, sequentially, and reveals his decisions through actions — in this case, by entering the housing market and bidding up home prices.

Suppose houses are really of low investment value, but the first person to make a decision reaches the wrong conclusion (which happens, as we have assumed, 40 percent of the time). The first person, A, pays a high price for a home, thus signaling to others that houses are a good investment.

The second person, B, has no problem if his own data seem to confirm the information provided by A's willingness to pay a high price. But B faces a quandary if his own information seems to contradict A's judgment. In that case, B would conclude that he has no worthwhile information, and so he must make an arbitrary decision — say, by flipping a coin to decide whether to buy a house.

The result is that even if houses are of low investment value, we may now have two people who make purchasing decisions that reveal their conclusion that houses are a good investment.

As others make purchases at rising prices, more and more people will conclude that these buyers' information about the market outweighs their own.

Mr. Bikhchandani and his co-authors worked out this rational herding story carefully, and their results show that the probability of the cascade leading to an incorrect assumption is 37 percent. In other words, more than one-third of the time, rational individuals, each given information that is 60 percent accurate, will reach the wrong collective conclusion.

Thus, we should expect to see cascades driving our thinking from time to time, even when everyone is absolutely rational and calculating.

This theory poses a major challenge to the "efficient markets" view of the world, which assumes that investors are like independent-minded voters, relying only on their own information to make decisions. The efficient-markets view holds that the market is wiser than any individual: in aggregate, the market will come to the correct decision. But the theory is flawed because it does not recognize that people must rely on the judgments of others.

NOW, let's modify the Bikhchandani-Hirshleifer-Welch example again, so that the individuals are no longer purely rational beings. Instead, they are real people, subject to emotional reactions.

Furthermore, these people are being influenced by agencies like the National Association of Realtors, which is conducting a public-relations campaign intended to show that putting money into housing is a reliable way to build wealth. Under these circumstances, it's easy to understand how even experts could come to believe that housing is a spectacular investment.

It is clear that just such an information cascade helped to create the housing bubble. And it is now possible that a downward cascade will develop — in which rational individuals become excessively pessimistic as they see others bidding down home prices to abnormally low levels.

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