Understanding Housing Bubbles in Light of Recent Experience

Dallas Fed

Housing Stability and the Macroeconomy: International Perspectives

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Robert Shiller, Yale University

November 15, 2013
Montreal and Boston

Real Home Prices, Montreal and Boston, Jan 1990 to Aug-Sept 2013,
1990=100, Teranet, S&P/Case-Shiller

[Graph showing real home prices for Montreal and Boston from 1985 to 2015, with Montreal in blue and Boston in red.]
Toronto and New York

Real Home Prices, Toronto and New York, Jan 1990-Aug-Sept 2013
1998=100, Teranet/S&P-Case-Shiller

- Blue line: Toronto
- Red line: New York
Vancouver and San Francisco

Real Home Prices, Vancouver and San Francisco, Jan 1990 to Aug/Sept 2013, 1990=100, Teranet, S&P/Case-Shiller
Comparing Colombian & USA Real Home Prices, 1988 = 100
Comparing Brazilian (fipe) & USA (S&P/Case-Shiller) Real Home Prices, 2008 = 100

- Sao Paulo, Brazil
- Rio, Brazil
- New York, USA
- Los Angeles, USA
Real Home Prices Herengracht, Piet Eichholtz, 1649-2013
Amsterdam- *Herengracht* Region
Berckheyde, 1685
Epidemics and Word of Mouth

• Spread of ideas is similar to spread of infectious diseases
• “Memes” (Richard Dawkins, The Selfish Gene, 1976)
• “Thought viruses” replicate as do viruses
• “Tropes” in literary theory
• Mathematics of epidemiology is therefore relevant to economics
SIR Model (Susceptibles, Infectives, Removed) Kermack and McKendrick, 1927

- $n$ individuals, $x$ susceptibles, $y$ infectives, $z$ no longer contagious, $n=x+y+z$. Infection rate is $\beta$, removal rate is $\gamma$, and define the relative removal rate $\rho=\gamma/\beta$

- $dx/dt=-\beta xy$
- $dy/dt=\beta xy-\gamma y$
- $dz/dt=\gamma y$
Properties of SIR Model

- No epidemic can start unless relative removal rate $\rho < x_0$ (the initial number of susceptibles)
- In an epidemic, number of infectives first rises, then falls.
- Epidemic peaks when $x$ falls below $\rho$
- “Size of epidemic” $z_\infty$ is the total number of people who eventually contract the disease
- Size relative to population is determined by $\rho$, low $\rho$ promoting large size
Individuals agreeing with the statement:

“The **stock** market is the best investment for long-term holders, who can just buy and hold through the ups and downs of the market”
Individuals agreeing with the statement:

“The Housing market is the best investment for long-term holders, who can just buy and hold through the ups and downs of the market”
How would one ever calculate the probability that the statements above are true?

- The statements represent memes, that have intuitive sense of truthfulness.

- They are evaluated by Daniel Kahneman’s System 1, instantaneously, without computations, not System 2, *Thinking Fast and Slow*, 2011.
Ten-Year Expectations
And 30-Year Mortgage Rate
CME Home Price Futures Market
Implications of Keynesian Beauty Contest Metaphor for Speculative Trading

• On Aug. 4, 2011, the market, as measured by the Standard & Poor’s 500-stock index, fell by almost 5 percent. The next day was quiet, but the following Monday, the index dropped almost 7 percent. In successive days, it rose 4.7 percent, fell 4.4 percent and rose 4.3 percent. after the near-default.

• Keynesian beauty contest

• Peculiar timing of public reaction to near default may repeat this month
Alan Greenspan, Aug 7, 2011
(just before the nearly 7% drop)

- “What I think the S.& P. thing did was to hit a nerve that there’s something basically bad going on, and it’s hit the self-esteem of the United States, the psyche.” “And it’s having a much profounder effect than I conceived could happen.”

- He was talking about what other investors were thinking, not about the substance of the S.& P. downgrade.
“PERHAPS the best evidence that America's house prices have reached dangerous levels is the fact that house-buying mania has been plastered on the front of virtually every American newspaper and magazine over the past month.”
“HOME $WEET HOME:
Why We’re going gaga over real estate

– Will your house make you rich?
– Super hot markets.
– Is it time to buy or sell?
– The case for renting
“Economist Robert Shiller whose book predicting a stock market rout arrived just before the Nasdaq began its sickening slide in 2000, sees another bubble ready to burst. Home prices, he contends, could fall by as much as 50% adjusted for inflation.”

(Ex post: Actual US peak to trough decline was 43%, over 50% in many cities)
Percentage of Respondents’ Unprompted Use of “Housing Bubble” in Open-ended Questions
Percent of Respondents’ Unprompted Use of “Land” (usually as in “land shortage”) in Open-Ended Questions
Google Trends:
Web Searches for “Housing Bubble”
From the US Peak Aug 2005
Google Trends Search for “Housing Bubble” from Canada