

Narrative Economics and the Housing Market

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**Federal Reserve Bank of New York
Workshop on the Appropriate Government Role
in U.S. Mortgage Markets
April 28, 2017**

Akerlof and Shiller, *Animal Spirits*, 2009, *Phishing for Phools*, 2015

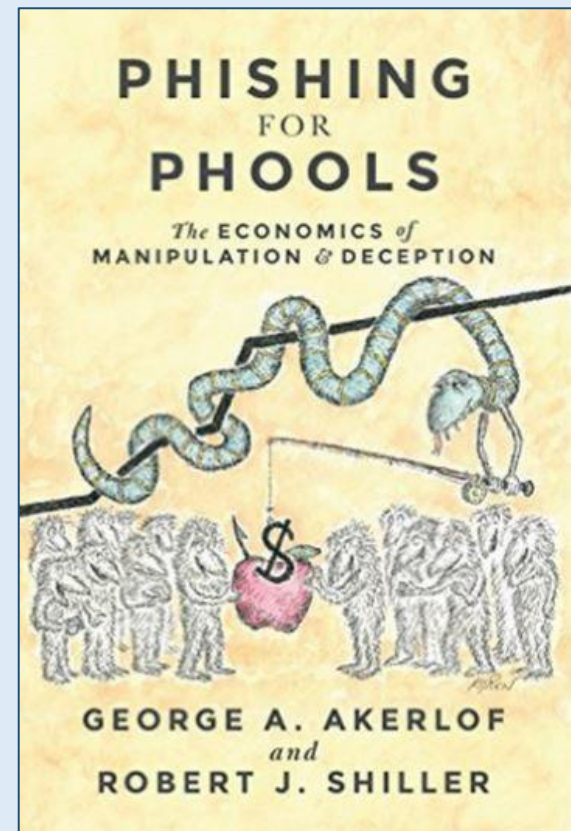
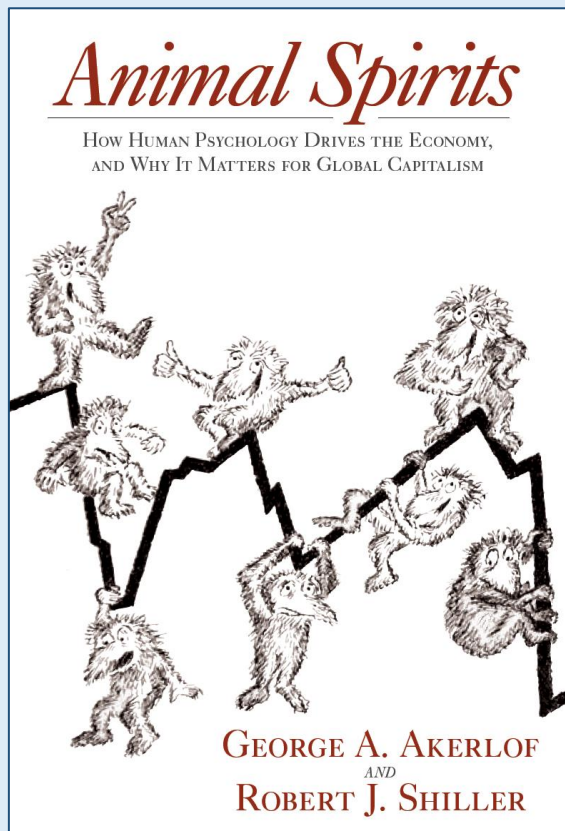
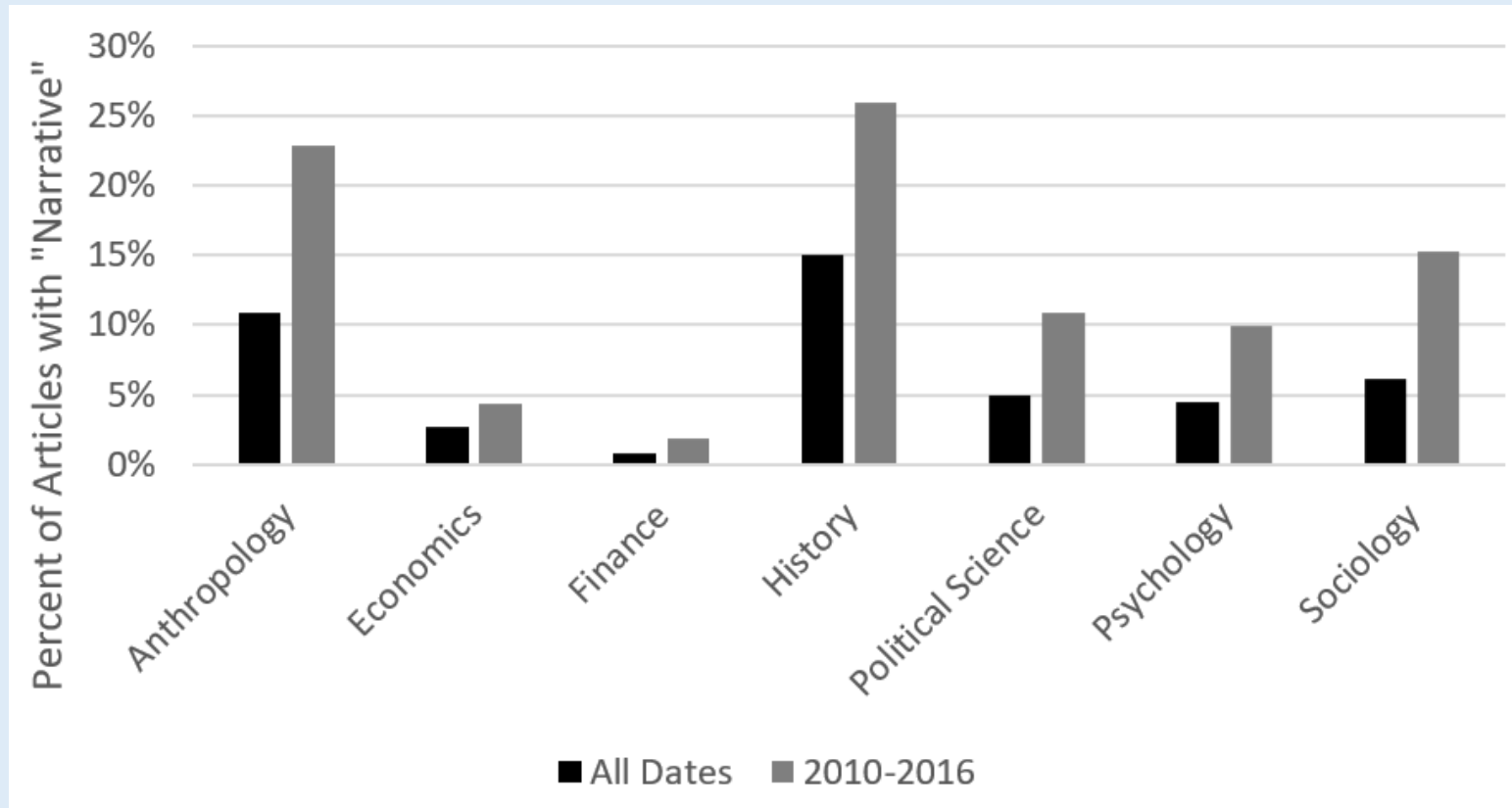


Figure 1: JSTOR Counts of Word “Narrative” as Percent of All Articles, by Discipline



Examples of Controlled Experiments Showing Causality from Narratives to Behavior

- Marketing (Jennifer Escalas 2007)
- Journalism (Marcel Machill et al. 2007)
- Education (Scott McQuiggan et al. 2008)
- Health interventions (M. D. Slater et al. 2003)
- Philanthropy (Weber et al. 2006)

Kermack-McKendrick SIR Disease Epidemic Model 1927

- S=fraction of population susceptible, I=fraction of population infected and now contagious, R=fraction of population recovered and now immune, $S+I+R=N$, c =contagion rate, r =infection rate

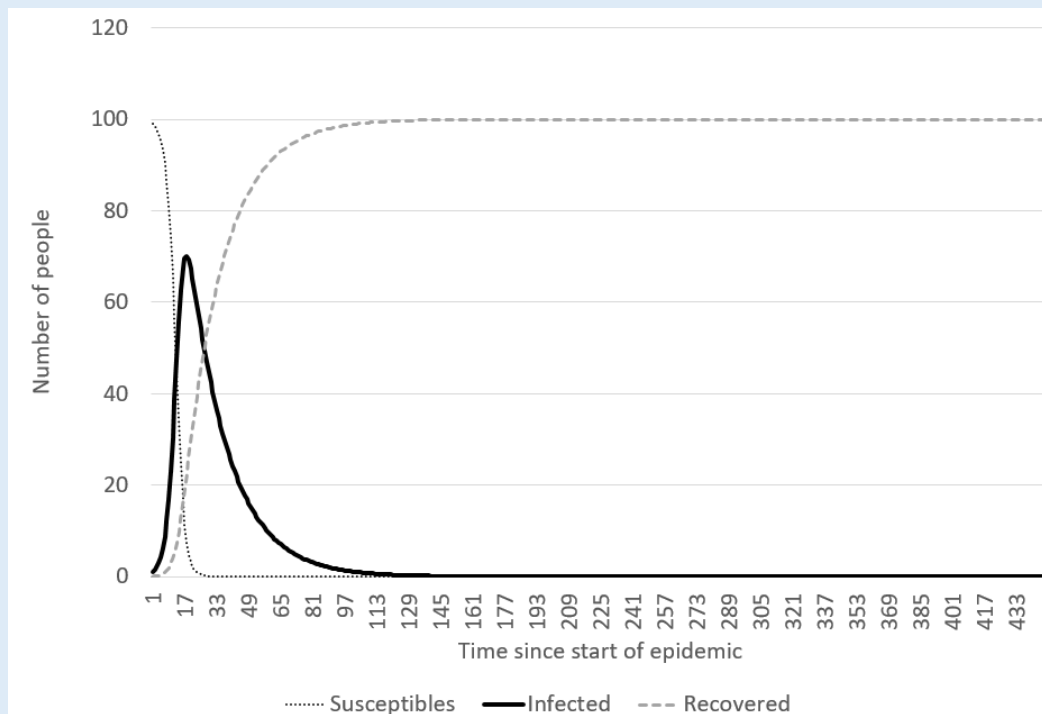
$$\frac{dS}{dt} = -cSI$$

$$\frac{dI}{dt} = cSI - rI$$

$$\frac{dR}{dt} = rI$$

Figure 2: Time Paths of S, I, and R in Kermack-McKendrick Model

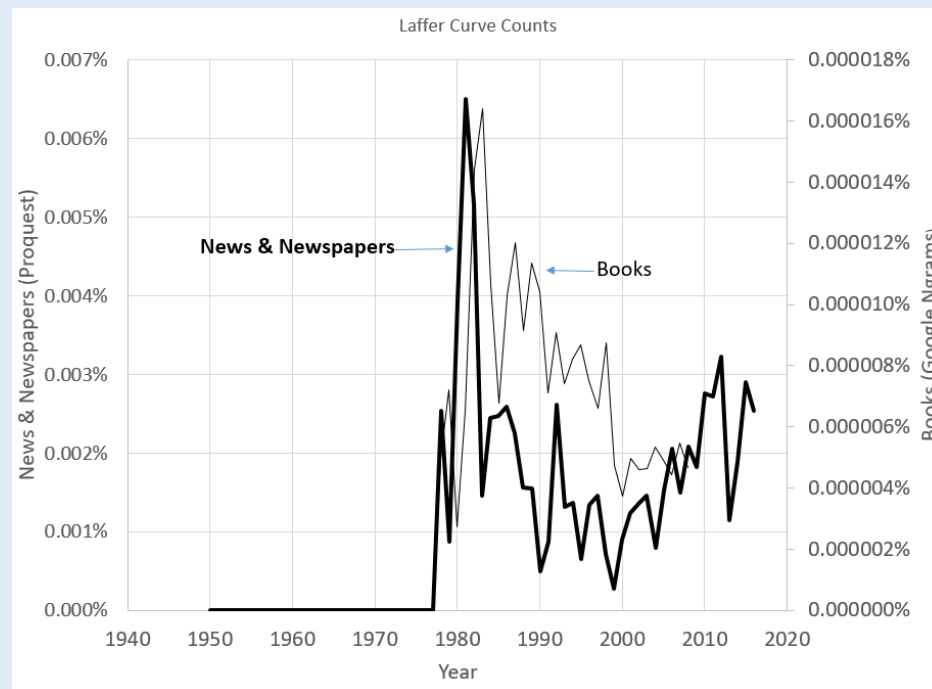
$N=100$, $I(0)=1$, $c=0.005$, $r=0.05$



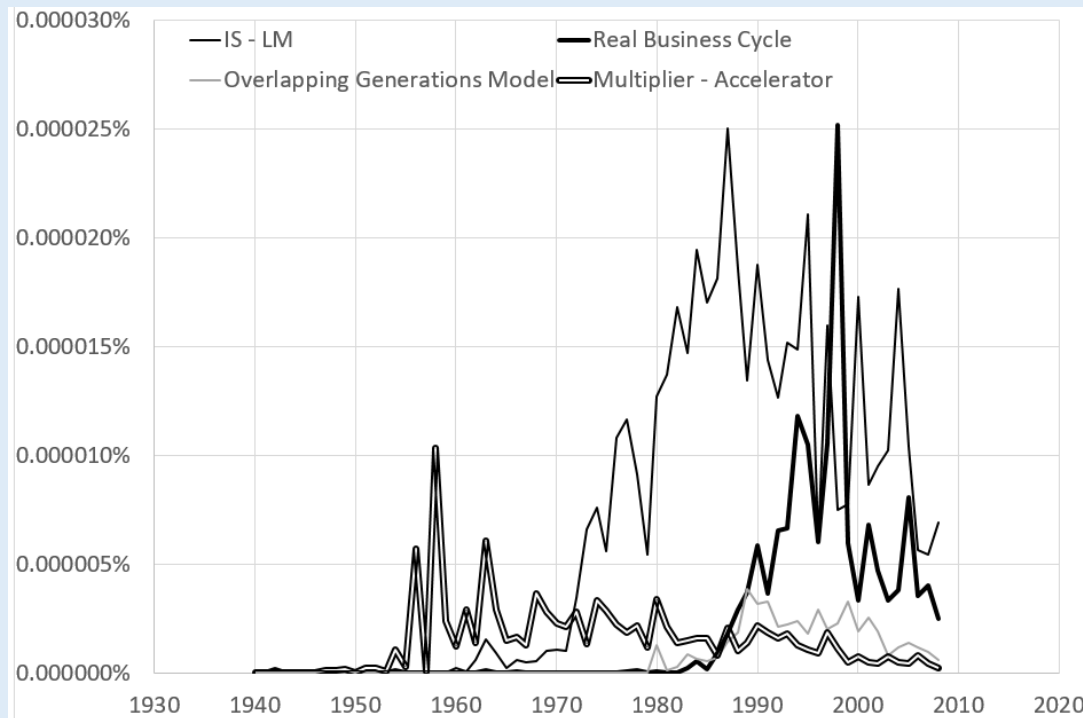
Size of Epidemic Determined by c/r

- $\frac{dS}{dR} = -(c/r)S$
- $S = (N - I_0)e^{-\left(\frac{c}{r}\right)R}$
- $I_\infty = 0$
- $\frac{c}{r} = R_\infty^{-1} \log \frac{N - I_0}{N - R_\infty}$
- Size of epidemic depends only on *ratio* of contagion rate to removal rate
- Speed of epidemic holding c/r constant depends on their *levels*

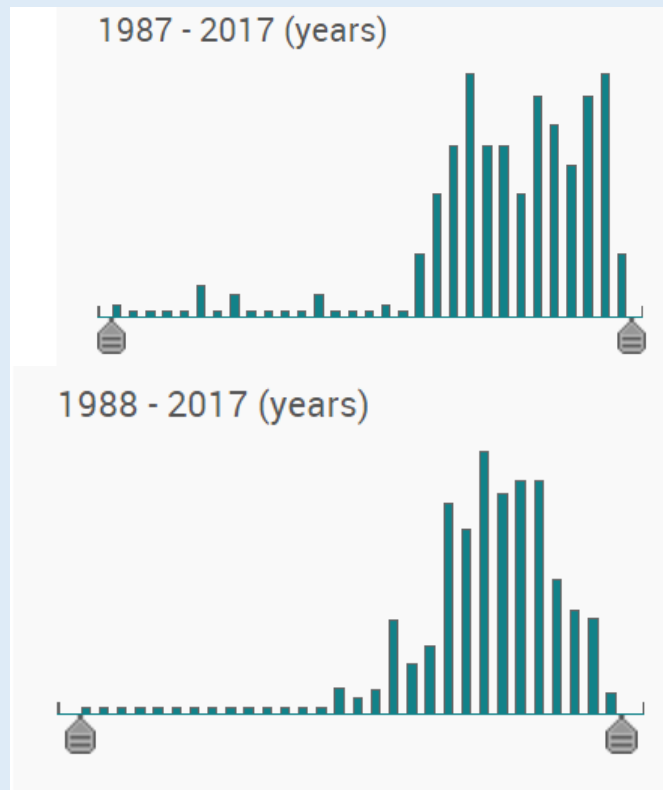
Laffer Curve Counts in New & Newspapers 1950-2016 & Books 1950-2008



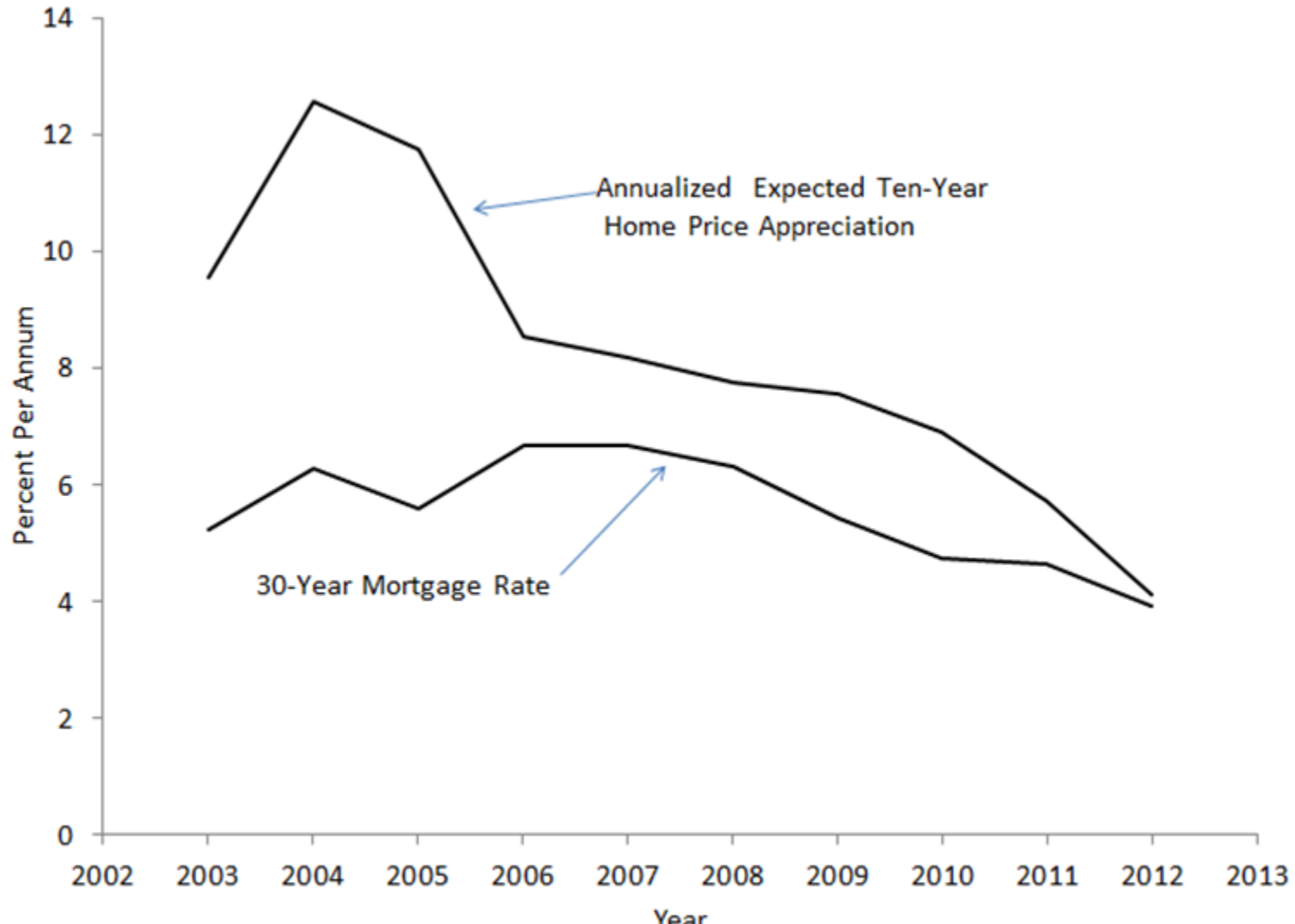
Google Ngrams (Books) Counts for Some Major Macroeconomic Models 1940-2008



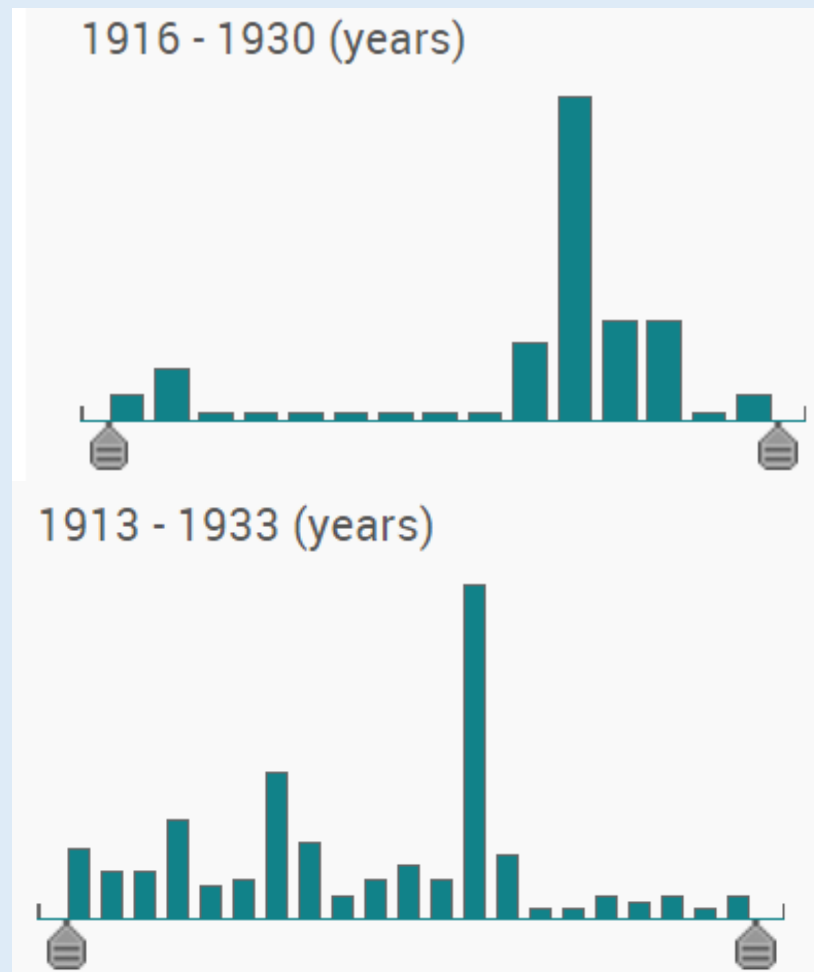
Proquest Count of Stories with “flipping houses” (above) and “Housing Bubble” (below) Follows Infectives Curve



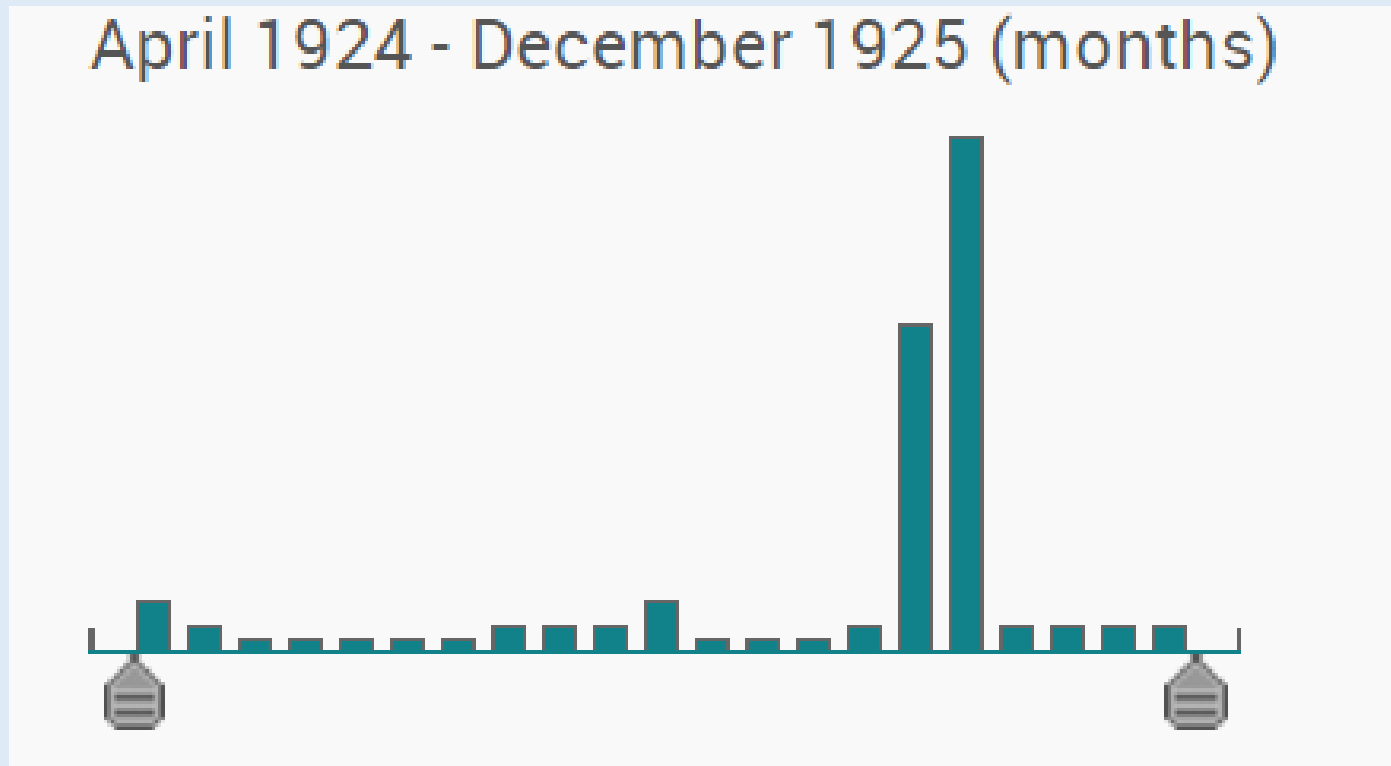
Ten-Year Expectations And 30-Year Mortgage Rate (Case Shiller Thompson BPEA 2013)



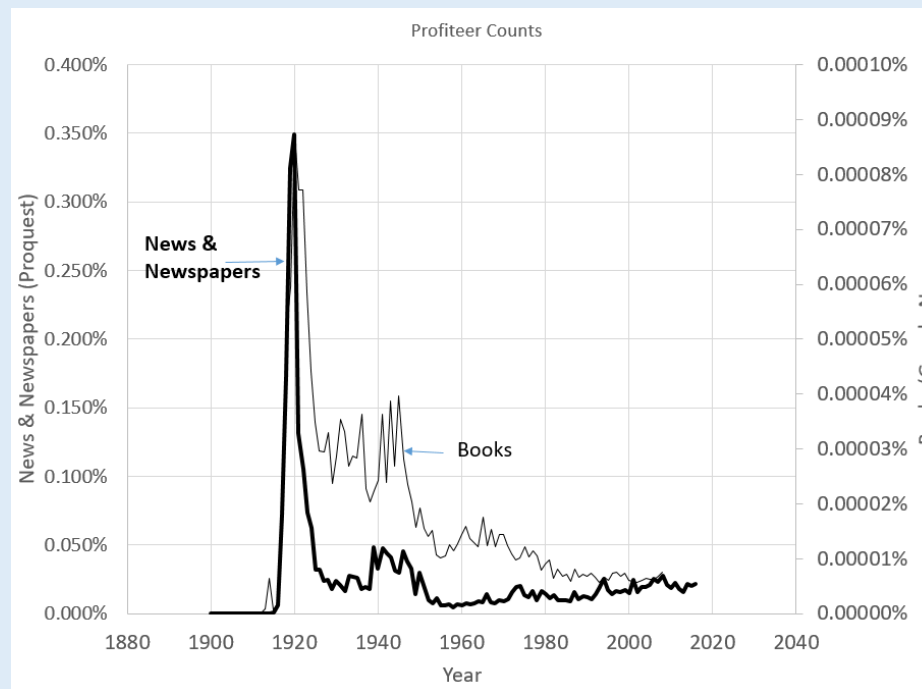
Proquest Count of Stories with “binder boys” (above) and “land shark” (below) Follows Infectives Curve



Proquest Count of “land shark” 1924-1925



Profiteer Counts as Percent of Database each Year in New & Newspapers, Books, 1900-2008-16

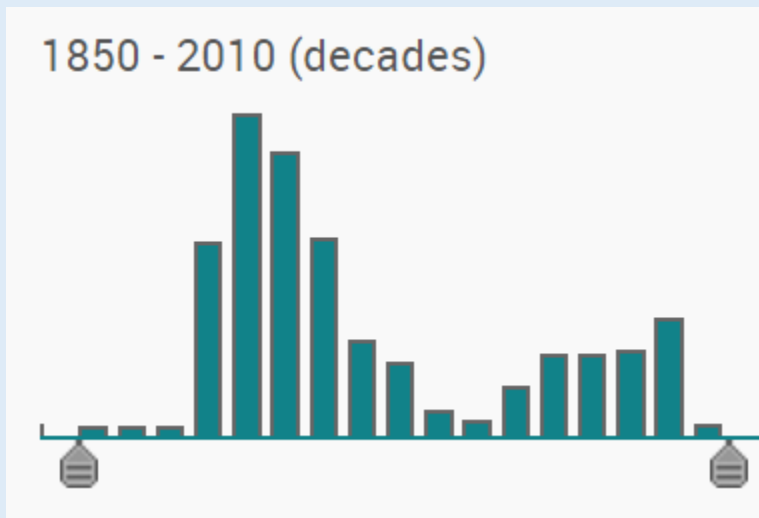


NYSE Bombing 1920

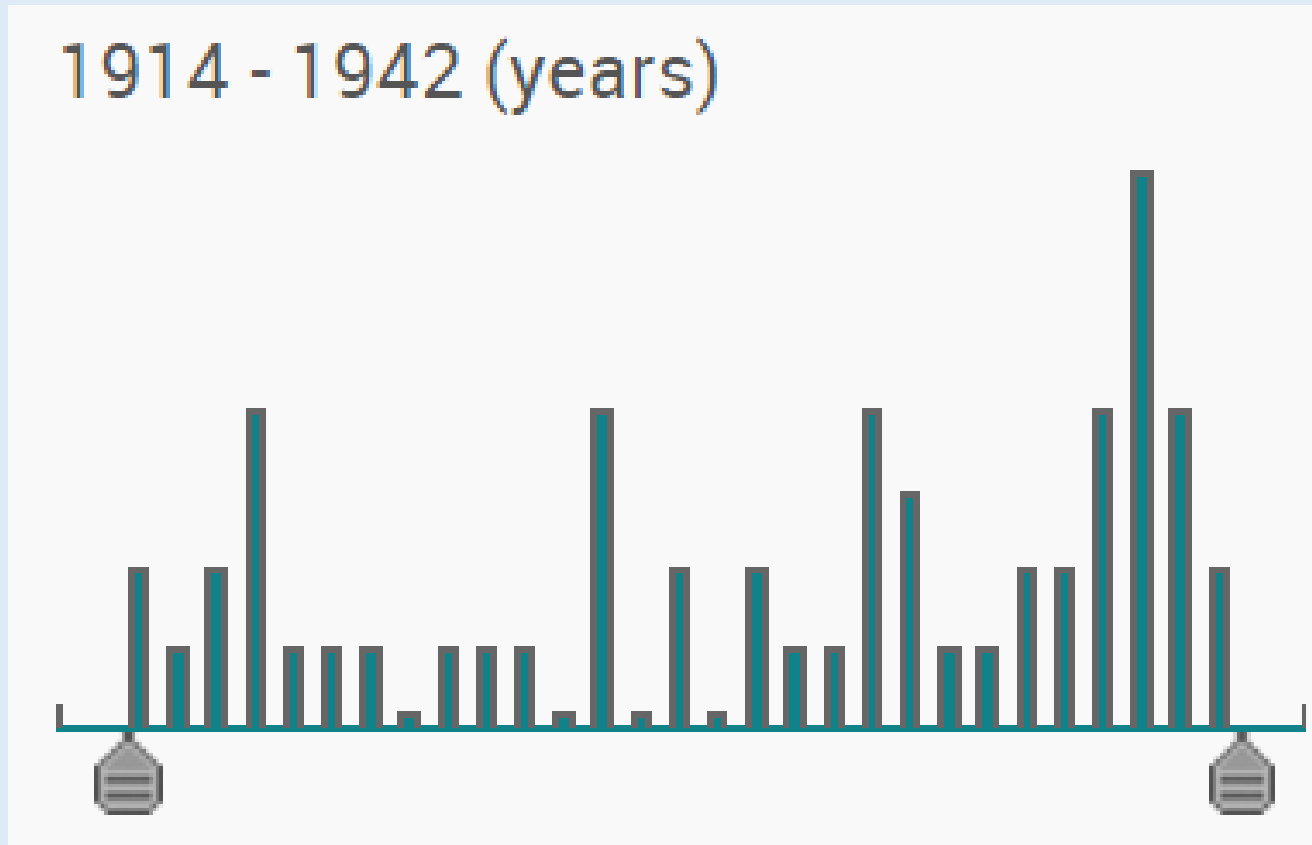


Anarchists and Luigi Galleani

- Anarchist



Yellin and Federal Reserve Bank of New York Building and Ironwork

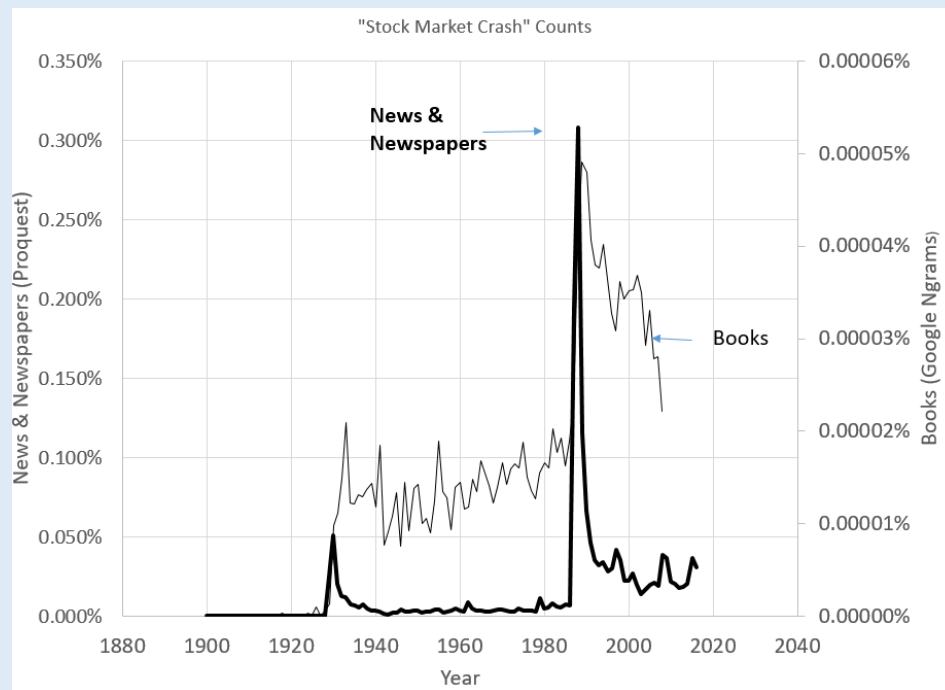


Benjamin Strong and his 1919-20 Extended Cruise

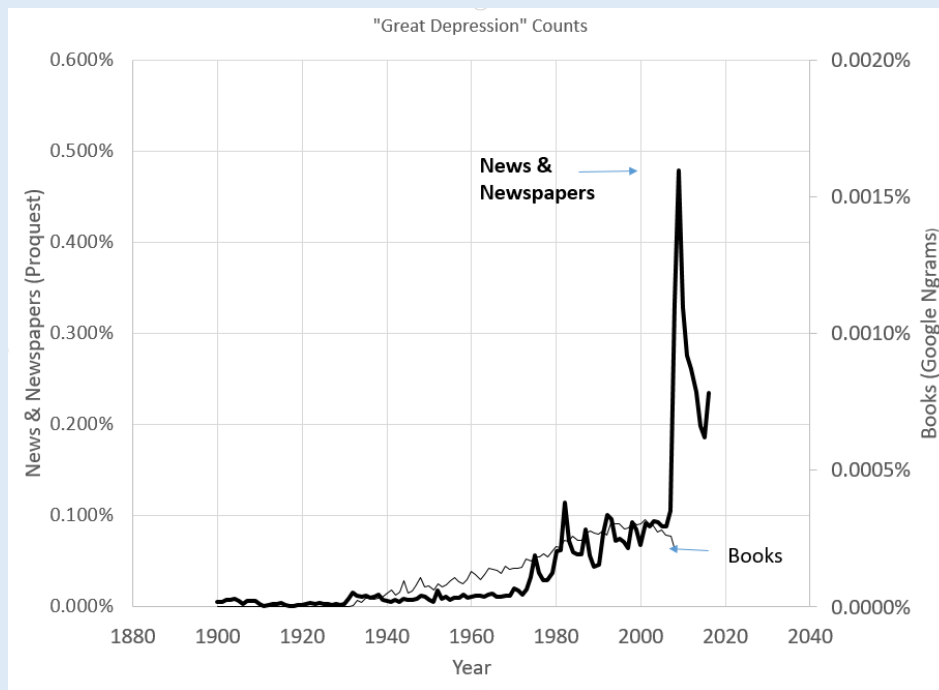
- Friedman and Schwartz
*A Monetary History of
the United States 1867-
1960*, 1963
- Strong left on a cruise
Dec 1919 for health
reasons
- Banks raised discount
rate Jan 1920



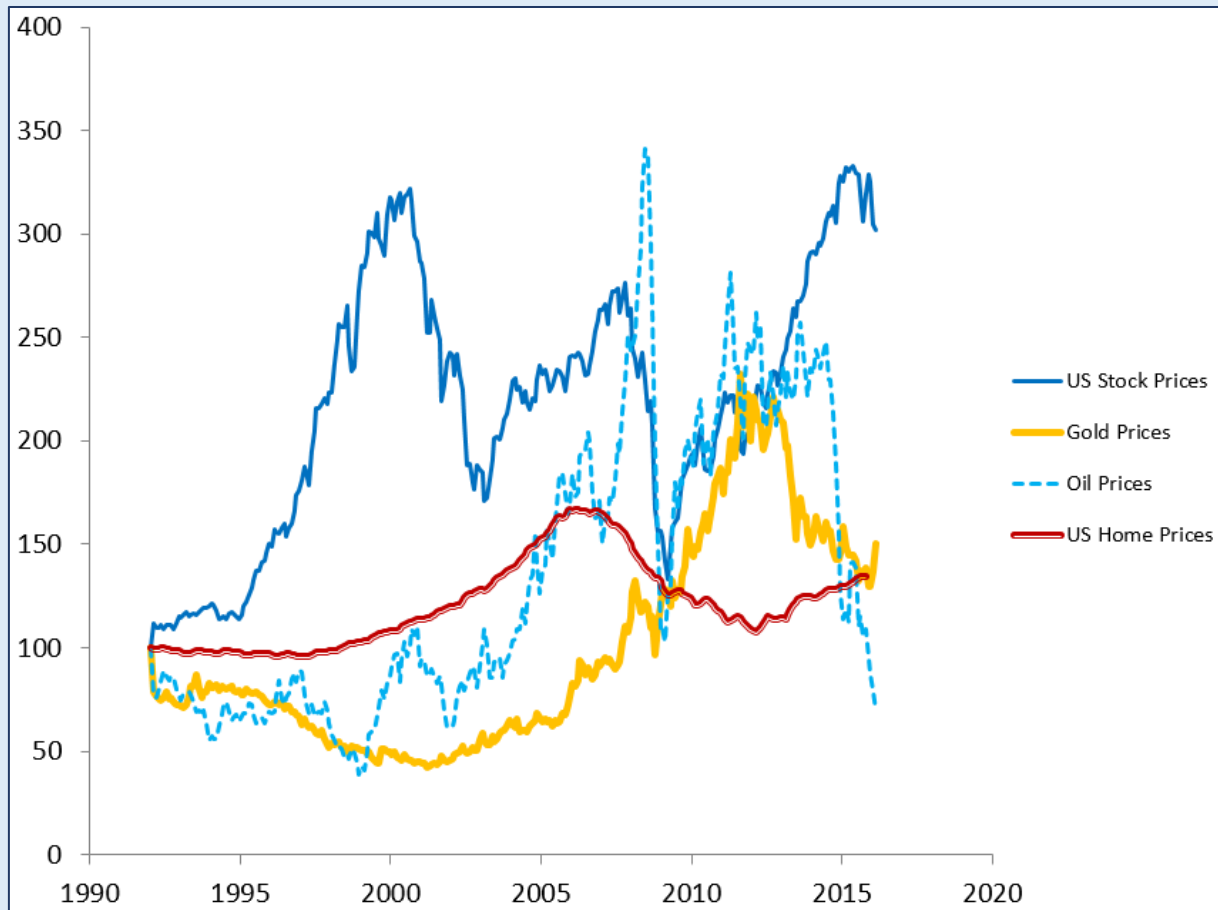
“Stock Market Crash” Counts as Percent of Database each Year



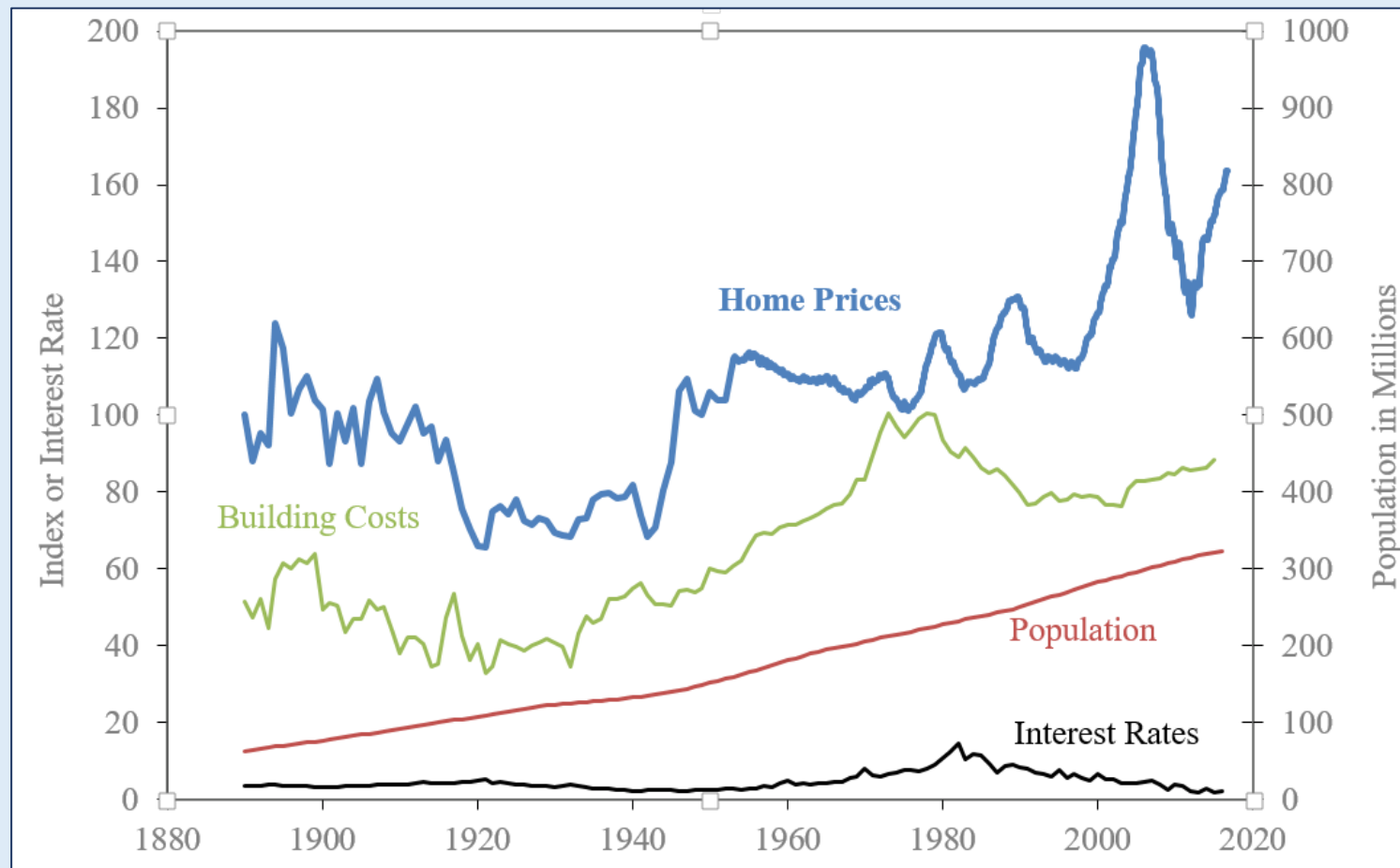
“Great Depression” Counts as Percent of Database each Year



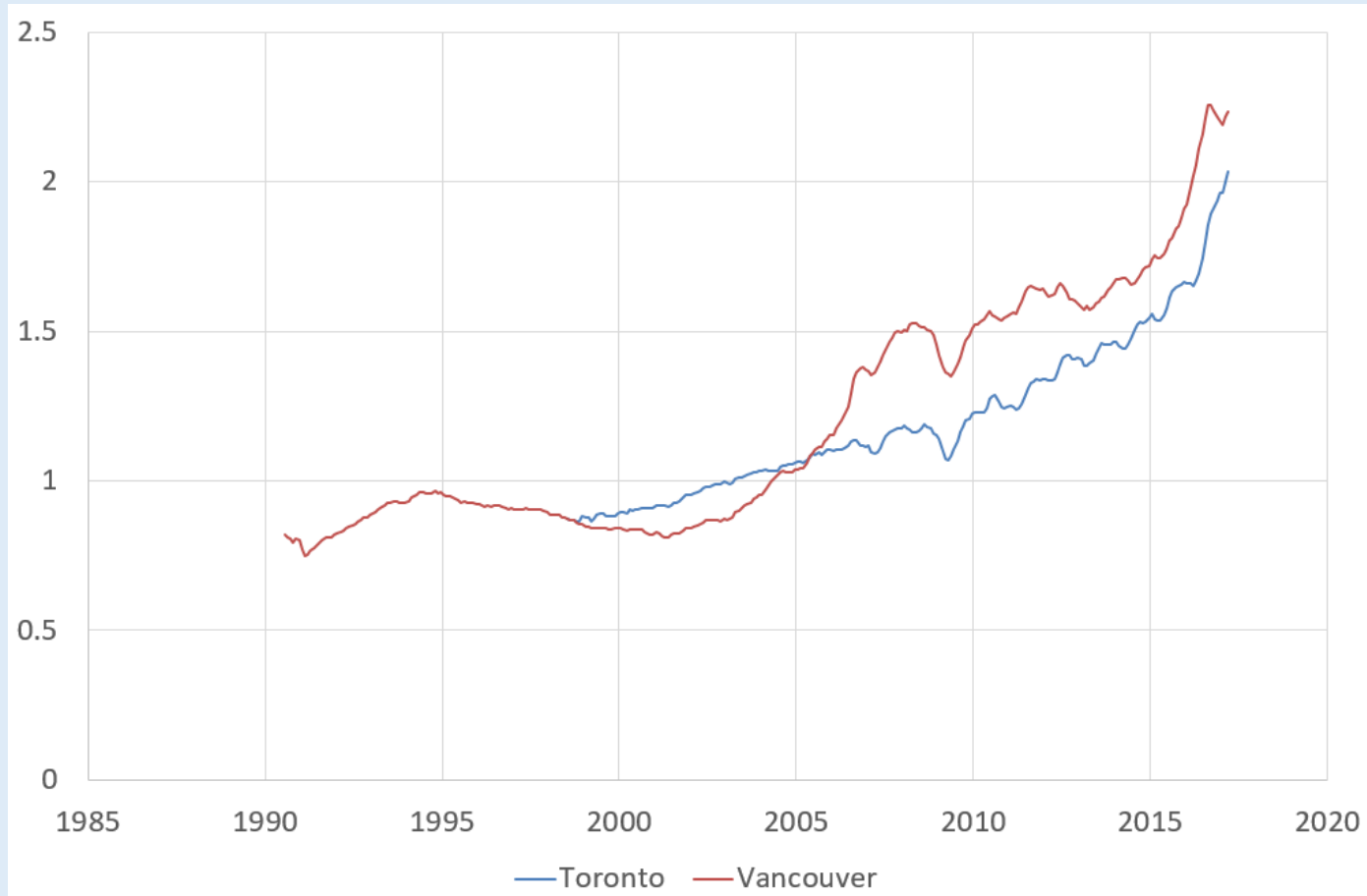
Major Asset Prices (Inflation Corrected) 1992=100, through 2016



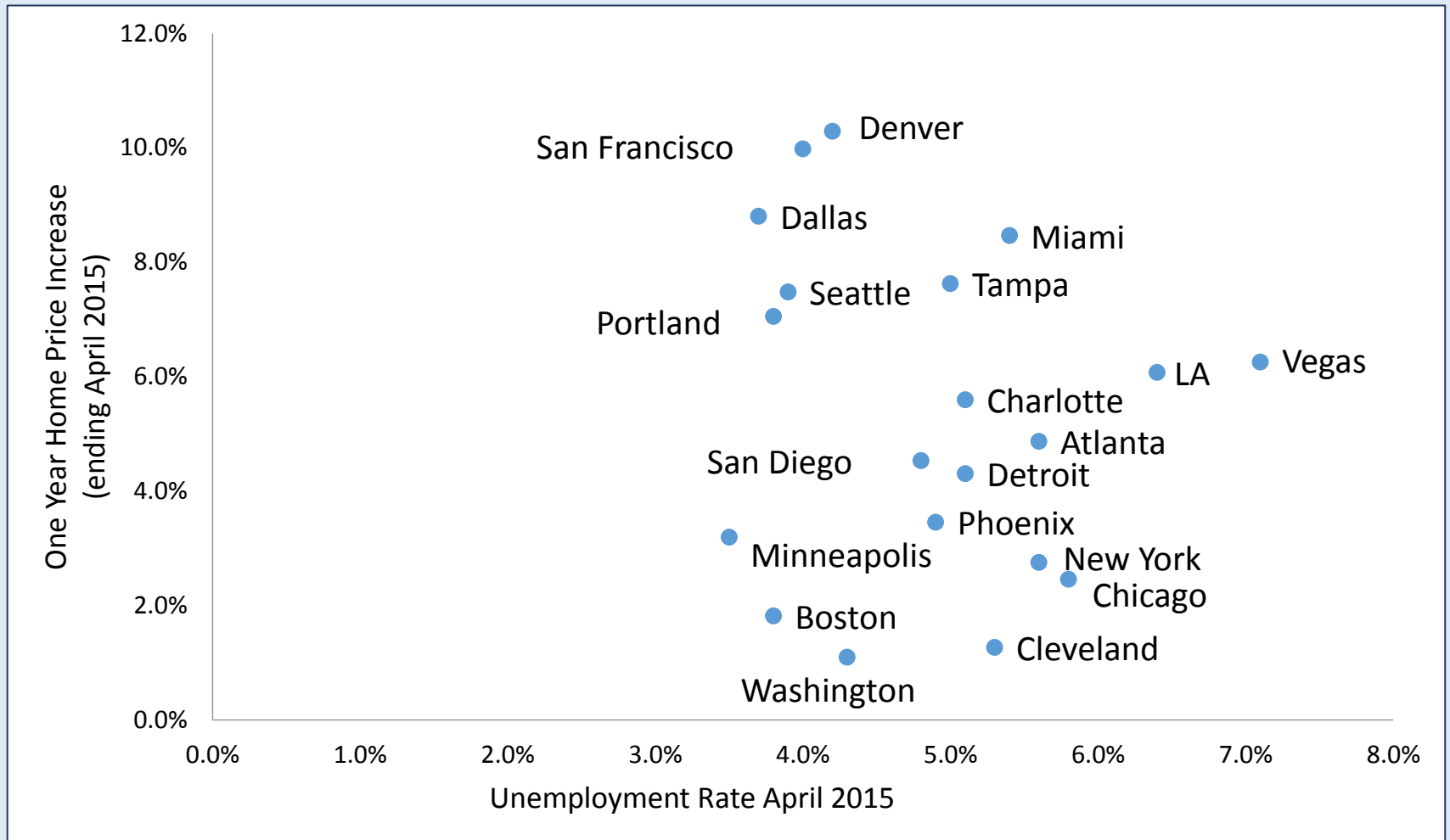
U.S. Home Prices and Fundamentals 1890-Sept 2016



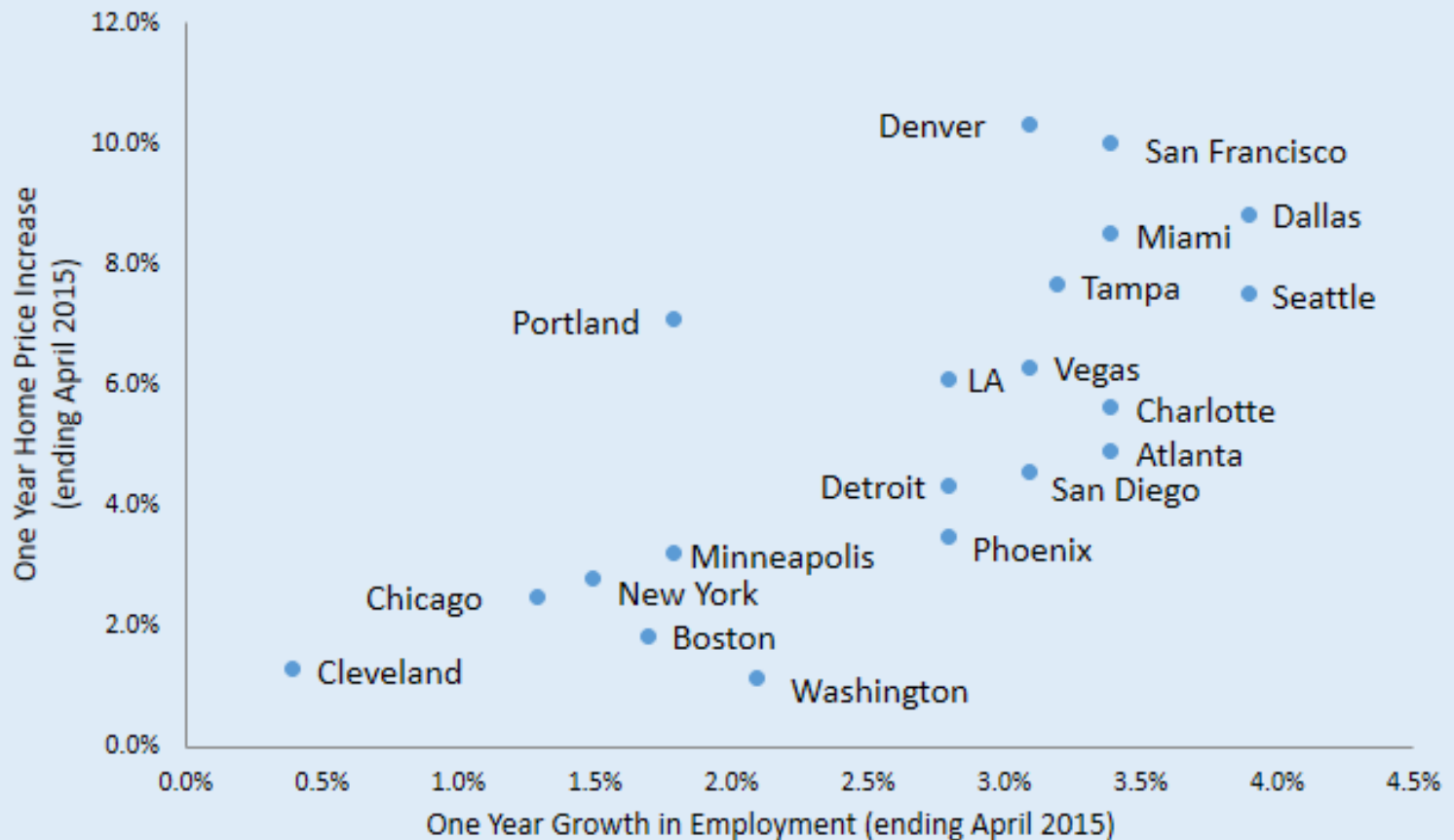
Real Home Prices Canada July 1990 to March 2017 (Teranet)



Unemployment Rate Does Not Explain Home Price Growth By City

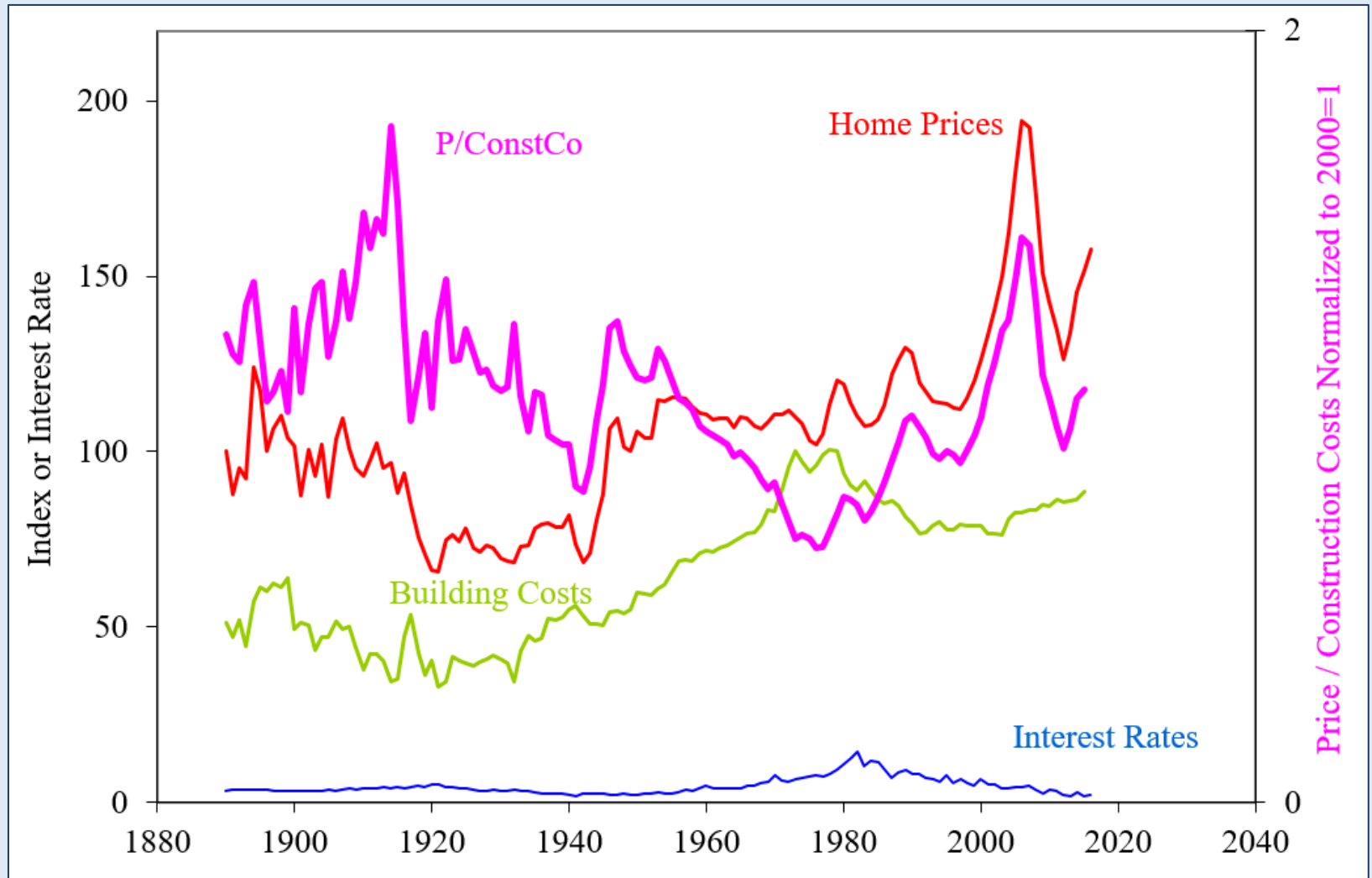


Employment Growth over Last Year Helps Explain Price Gains

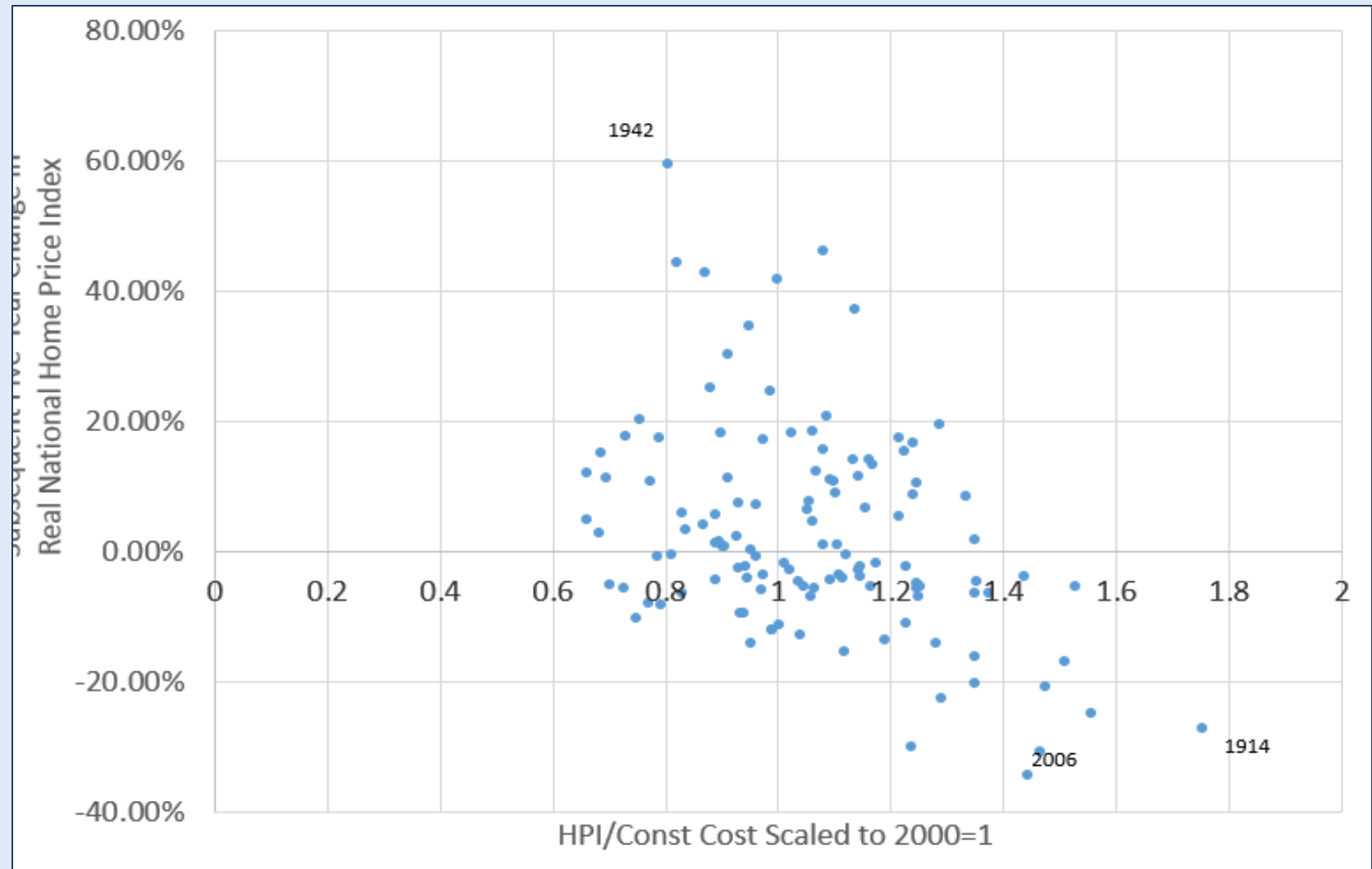


Source: Bureau of Labor Statistics

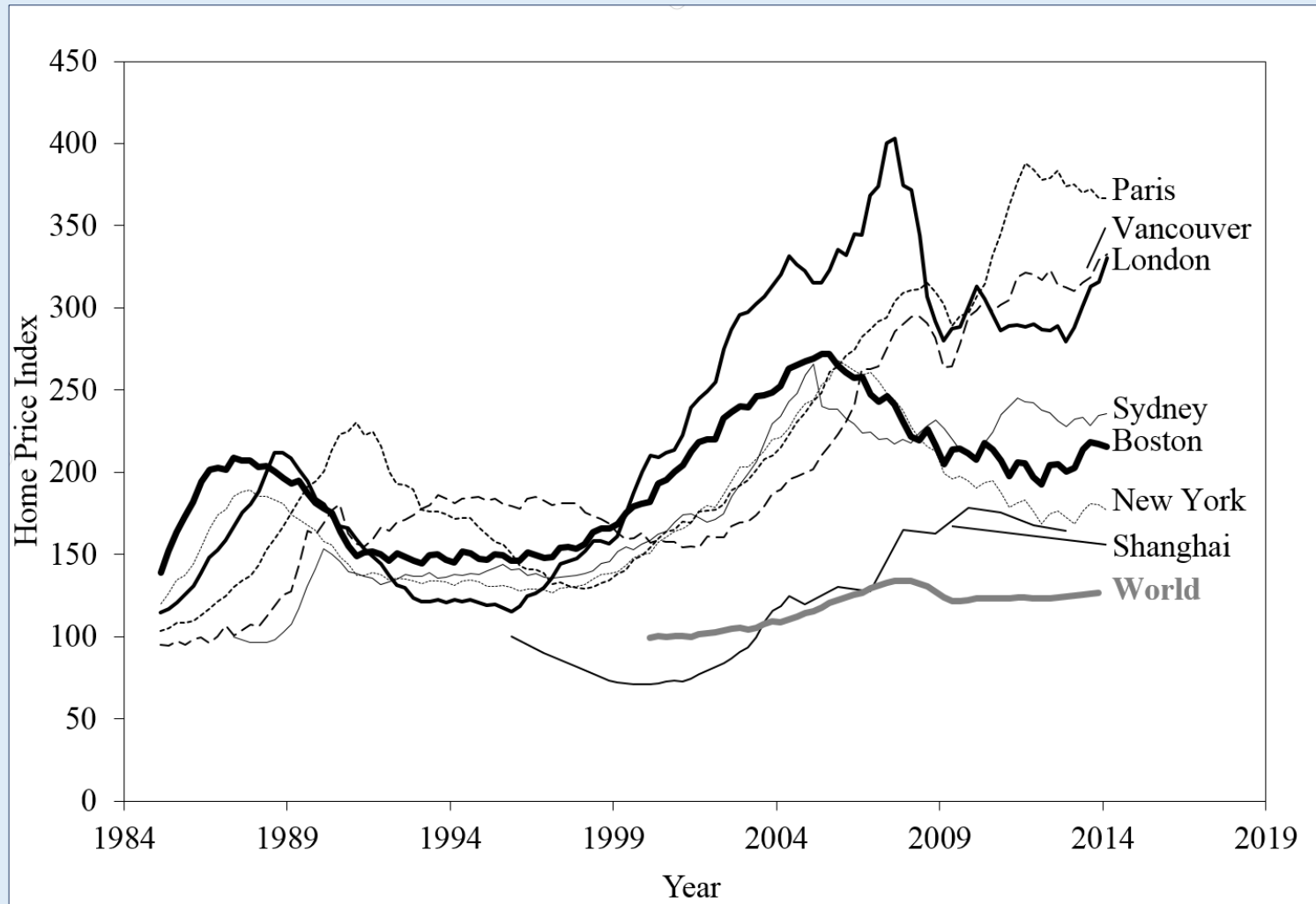
Price/Construction Cost Added to Chart



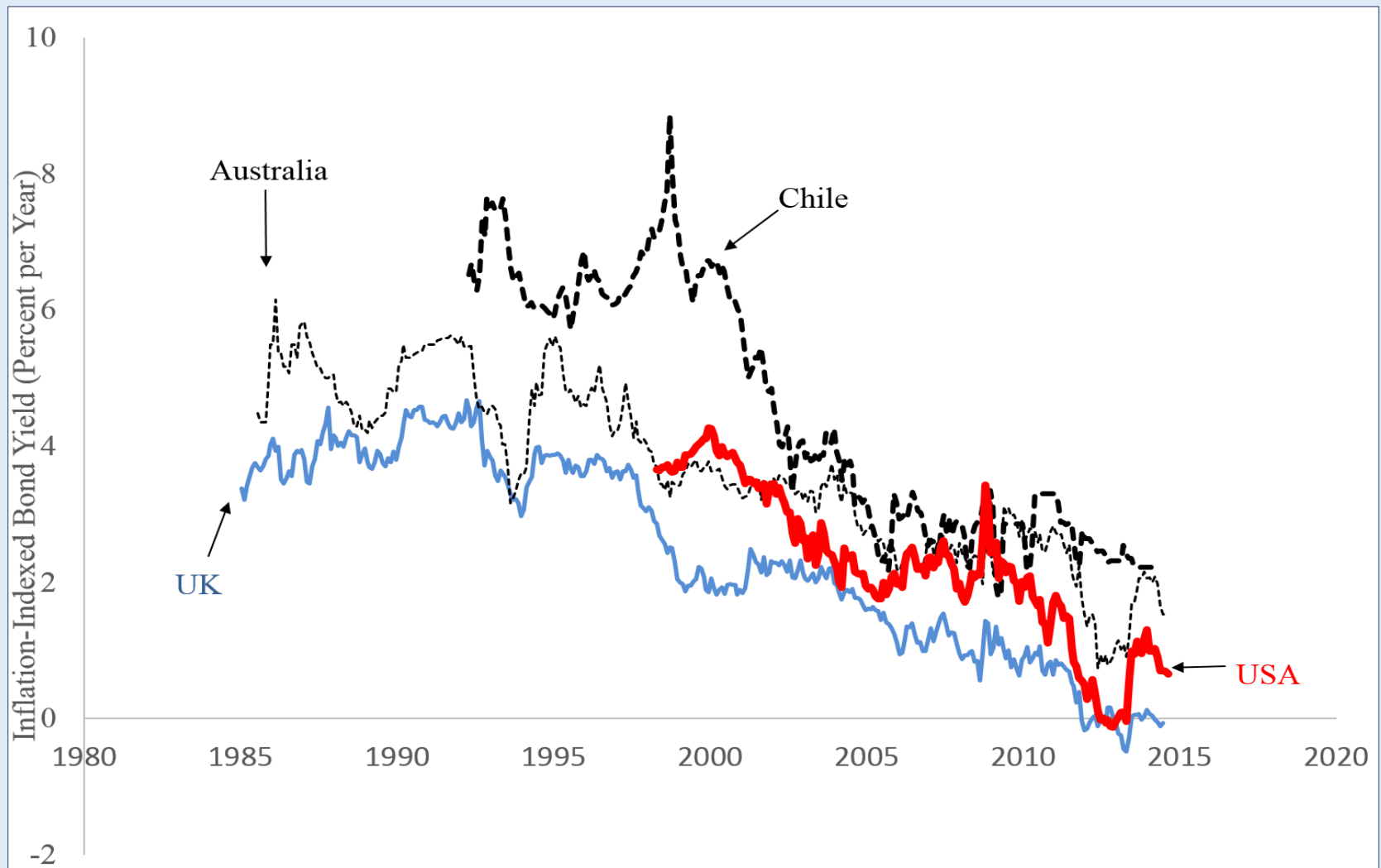
Home Price over Construction Cost Slightly Predicts Price Growth



World Cities Home Prices and IMF Real World Home Price Index



Inflation-Indexed Long-Term Bond Yields for Four Countries



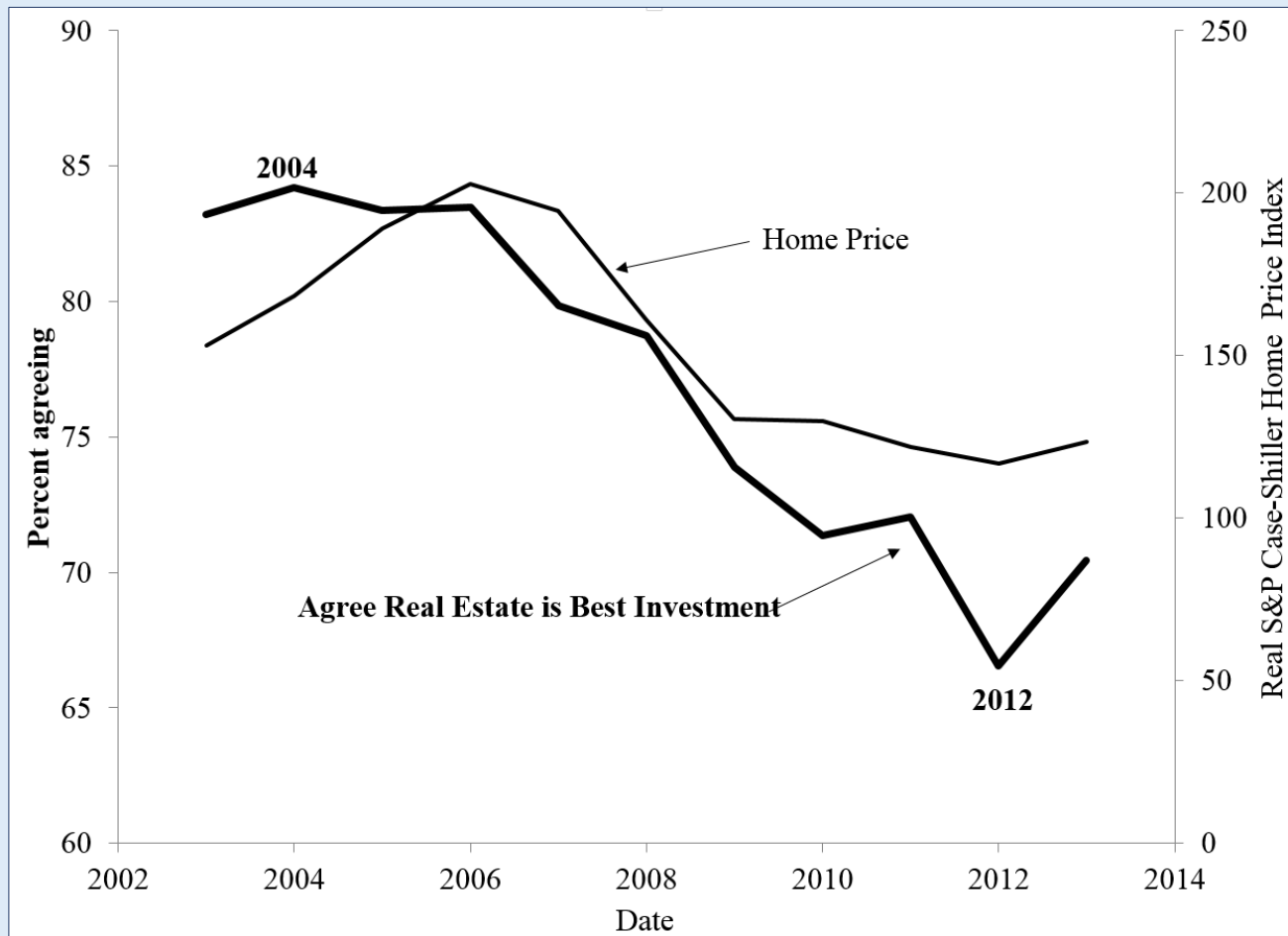
The Basic Theory of Speculative Bubbles

- Bubbles are driven initially by an unusual confluence of an array of precipitating factors
 - Many of these factors are stories, often human interest stories (narrative basis for human thinking)
 - Some of these factors are naïve theories
- Bubbles reach epidemic proportions with amplification mechanisms
 - Price-to-price feedback
 - Price-to-GDP-to-price feedback
 - Price-to-corporate-earnings-to-price feedback
 - Price-to-lending-standards-to price feedback

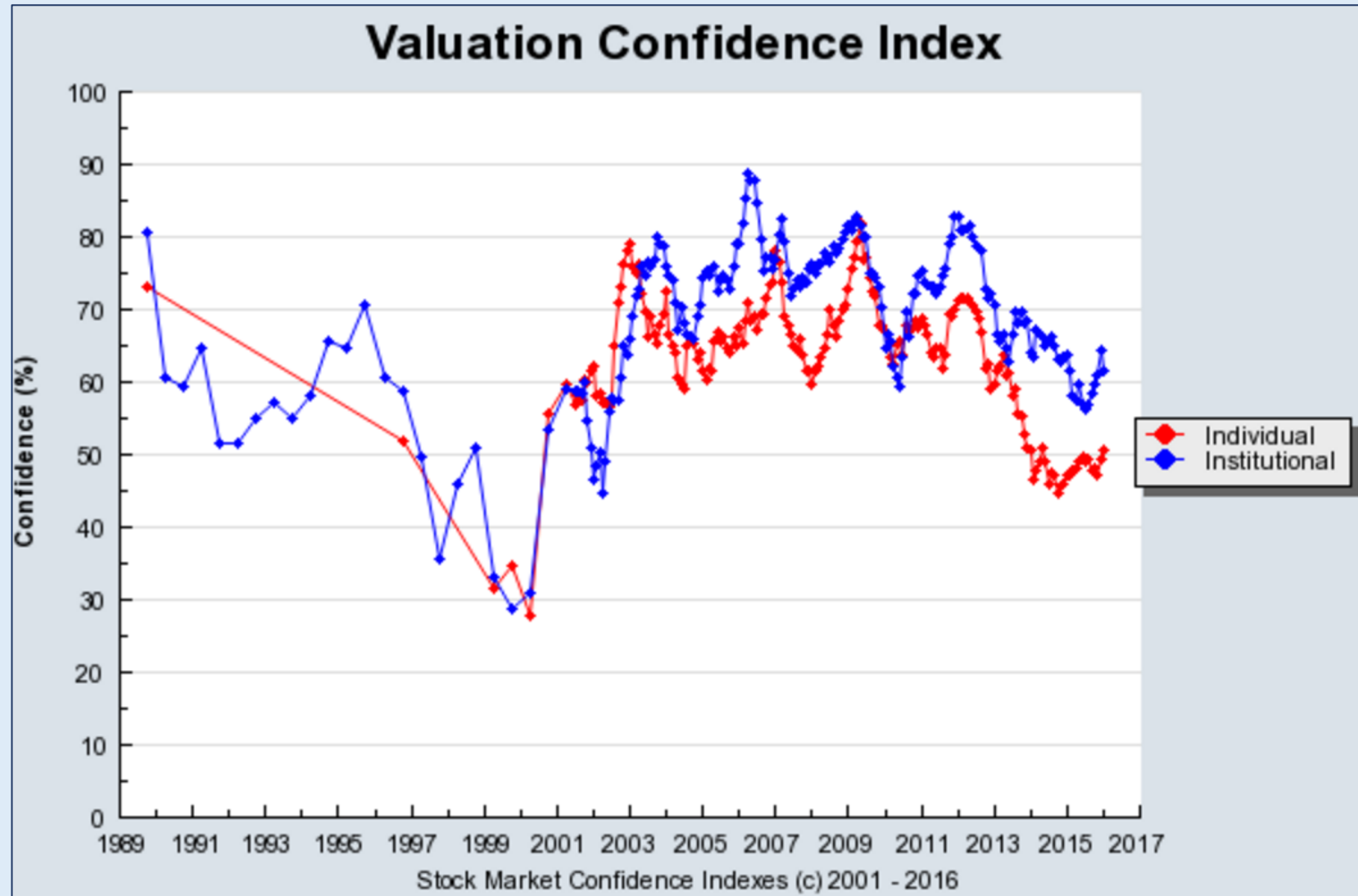
Evidence of Feedback Mechanism: Results of Individual Investor Survey: Stocks Are the Best Investment



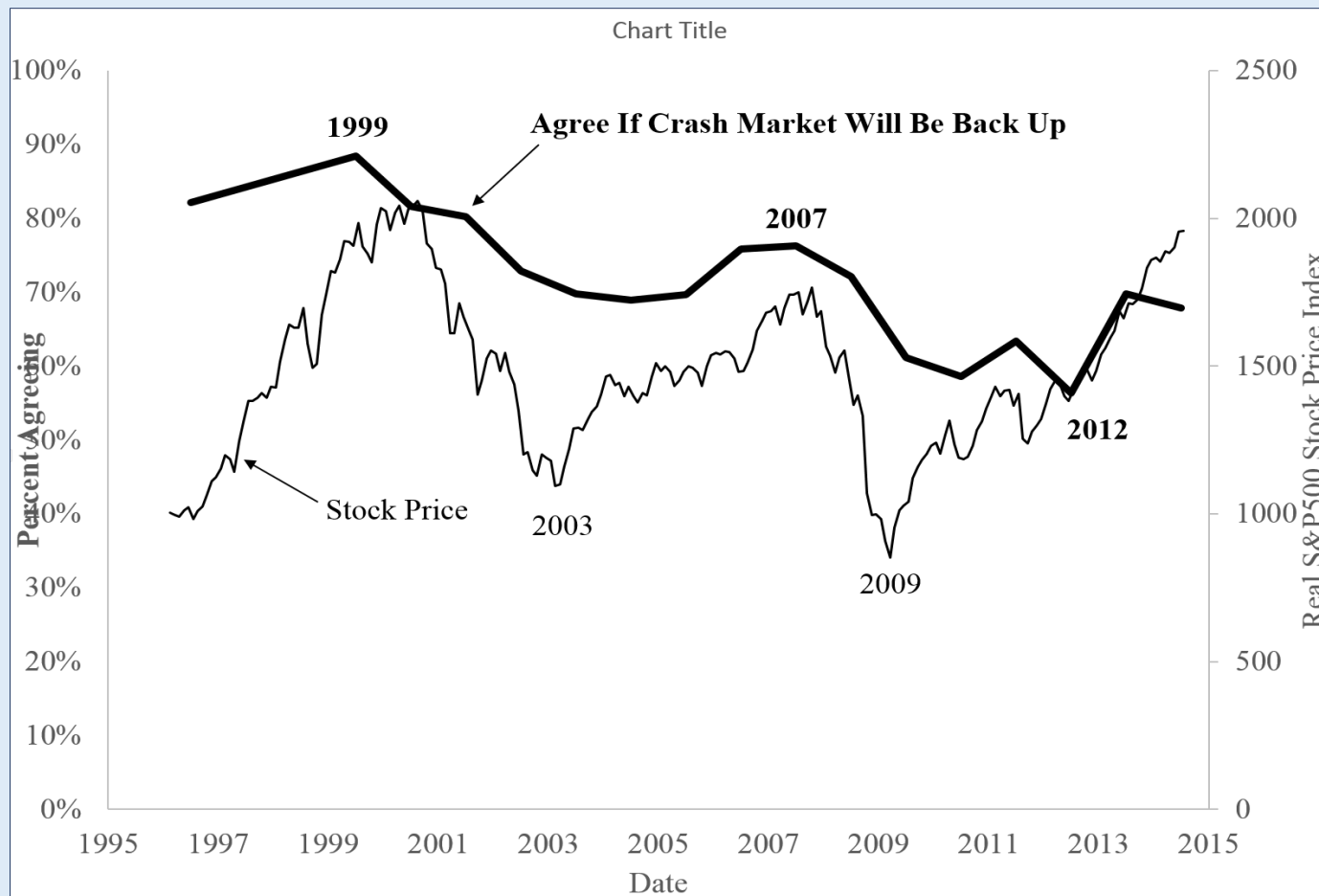
Evidence of Feedback Mechanism: Results of Home Buyer Survey: Real Estate Is the Best Investment



Individual and Institutional Investor Survey: Valuation Confidence



Evidence of Feedback Mechanism: Results of Individual Investor Surveys: Buy-on-Dips Confidence Correlates with Stock Market Level



The Behavioral Finance Revolution After 1990

- Sociology: Collective consciousness Durkheim (1893), collective memory Halbwachs (1925)
- Social psychology: *Groupthink* , Janis (1971)
- Journalism: the news media, Internet, as amplifier of social epidemics
- Even population biology, epidemiology, and neuroeconomics are coming into play

Some Relevant Principles of Psychology

- Overconfidence, WYSIATI
- Wishful thinking
- Nonconsequentialist reasoning
- Selective attention: William James 1890, (“rational inattention” Sims 2003)
- Identity, ego involvement
- Anchoring
- Representativeness heuristic

Precipitating Factors for Millennium Bubble 1982-2000

- The World Wide Web
- Triumphalism
- Culture Favoring Business Success
- Republican Congress & Capital Gains Taxes
- Baby Boom
- Media Expansion

- Optimistic Analysts
- 401(k) Plans
- Rise of Mutual Funds
- Decline of Inflation
- Expanding Volume of Trade
- Rise of Gambling Opportunities

Additions and Deletions to Precipitating Factors for the Ownership Society Boom 2003-7

Additions:

- Ownership Society Theory
- Greenspan put

Deletions:

- The World Wide Web after Dot-Com burst
- Republican Congress (Senate tied in 2000 elections, both houses went Democratic in 2006 election)
- Triumphalism faded with memories of Deng Xiaoping (d. 1997) and Boris Yeltsin (d. 2007)

Rather Different Precipitating Factors for the New Normal Boom, 2009-14

Additions:

- End of depression scare
- Extremely loose monetary policy and QE1, QE2, QE3
- New end-of-career anxieties with stellar advance in information technology
- Public attention drawn to income inequality

Deletions:

- Democratic Congress disappears: Republicans take House 2008 in and Senate in 2014

Possible Next Precipitating Factors Pres. Trump's Term of Office

Likely stimulative:

- Stories of rising entrepreneurial spirit, creativity, like the fracking story driving oil prices
- Inspiration to business from Trump administration

Likely anti-stimulative:

- Policy uncertainty with radically different regime in Washington
- Continuing stories of rising inequality
- Stories of excessive debt
- Stories of aging populations
- Possible wars