

# Speculative Asset Prices Pre- and Post- Crisis

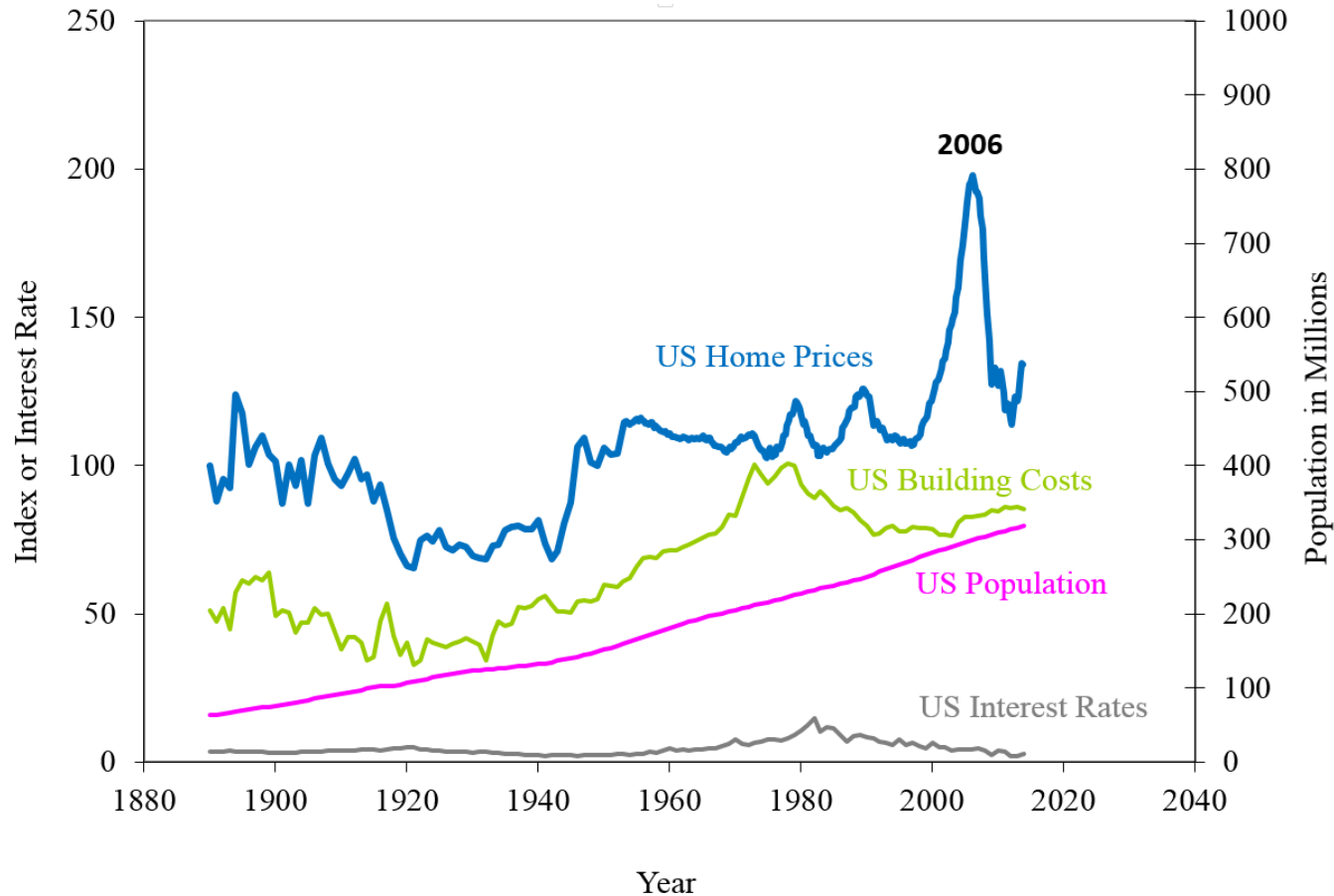
Robert J. Shiller

Yale University

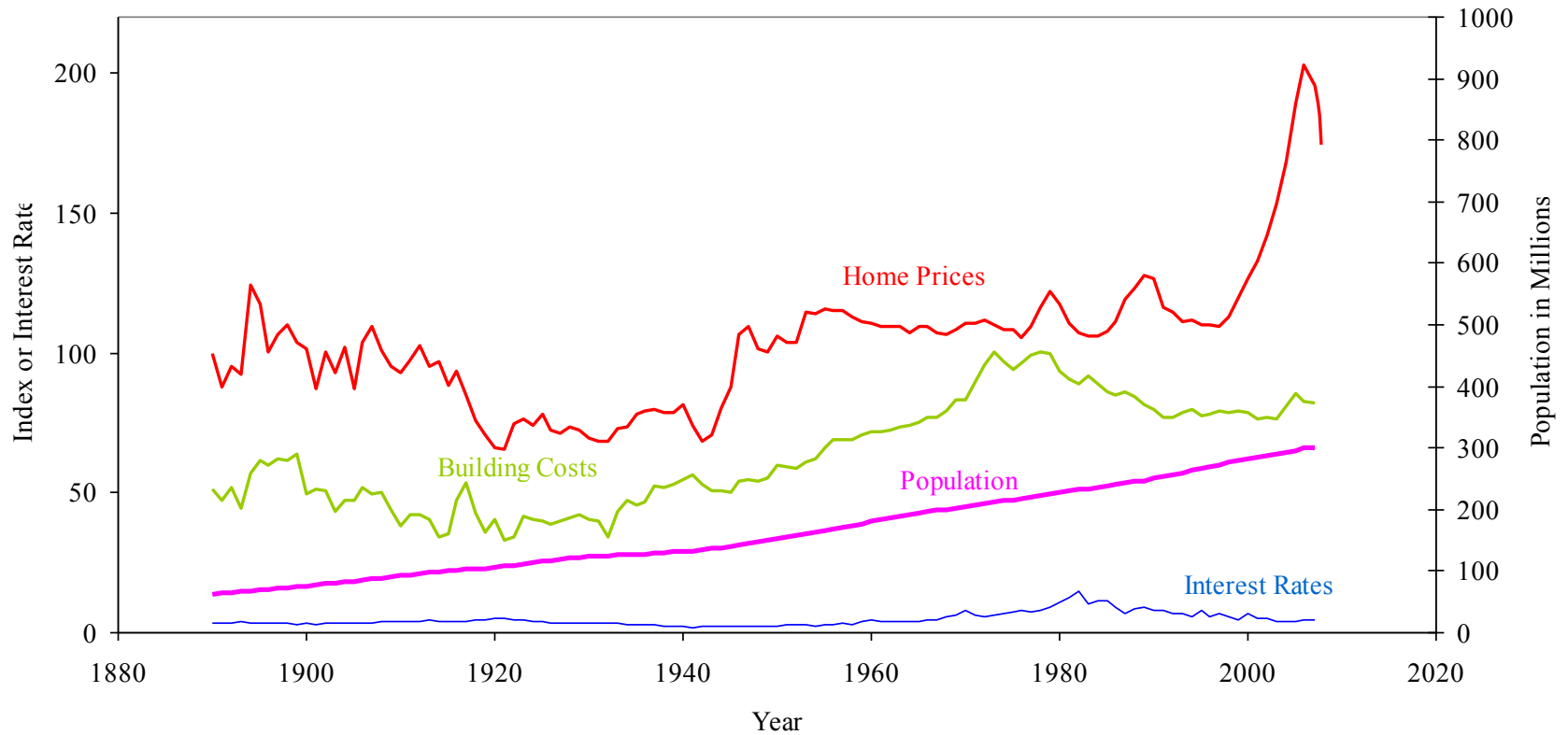
Acapulco, 77<sup>th</sup> ABM Banking Convention

April 4, 2014

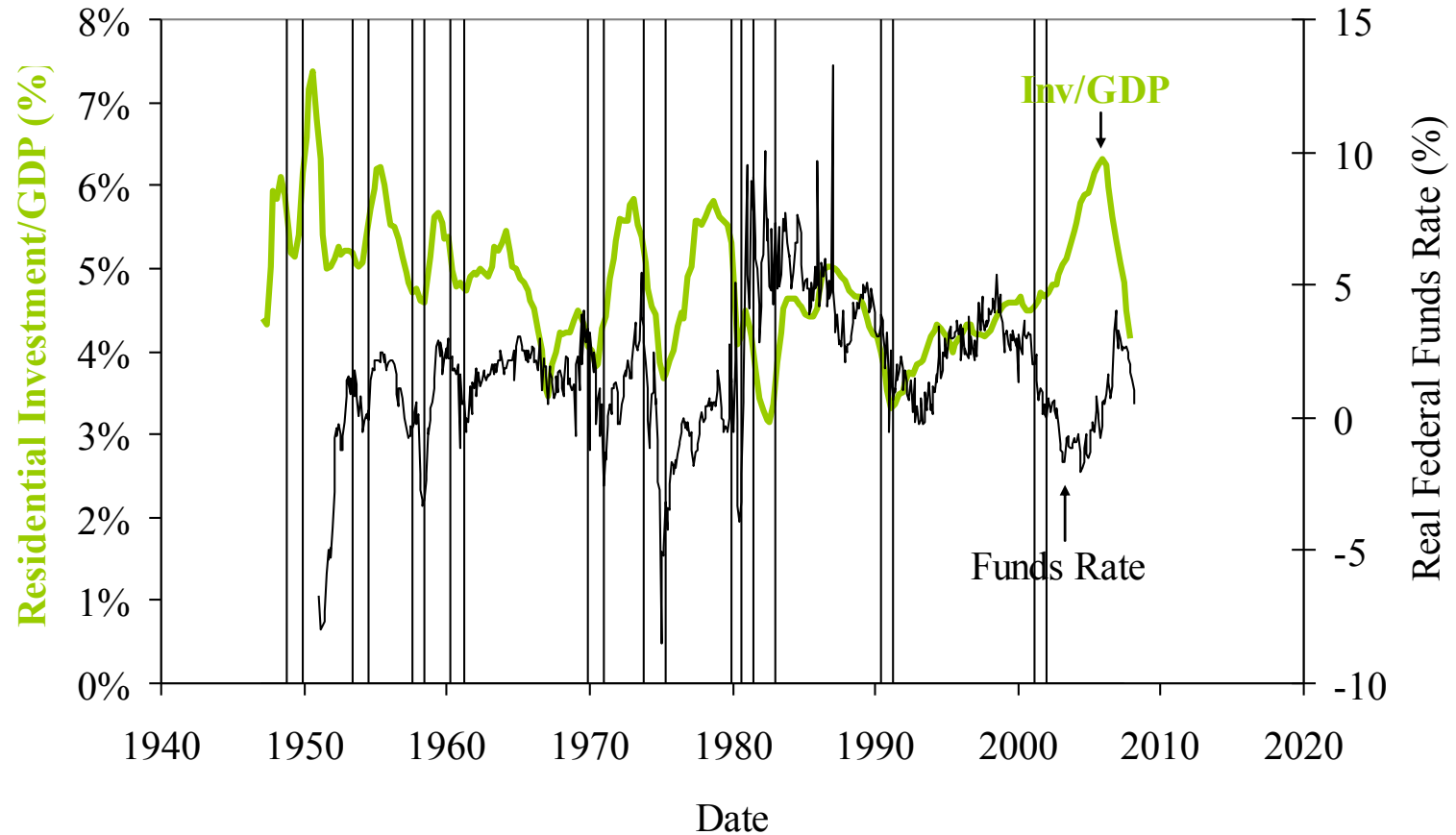
# The 2007-9 World Financial Crisis as the Result of a US Housing Bubble



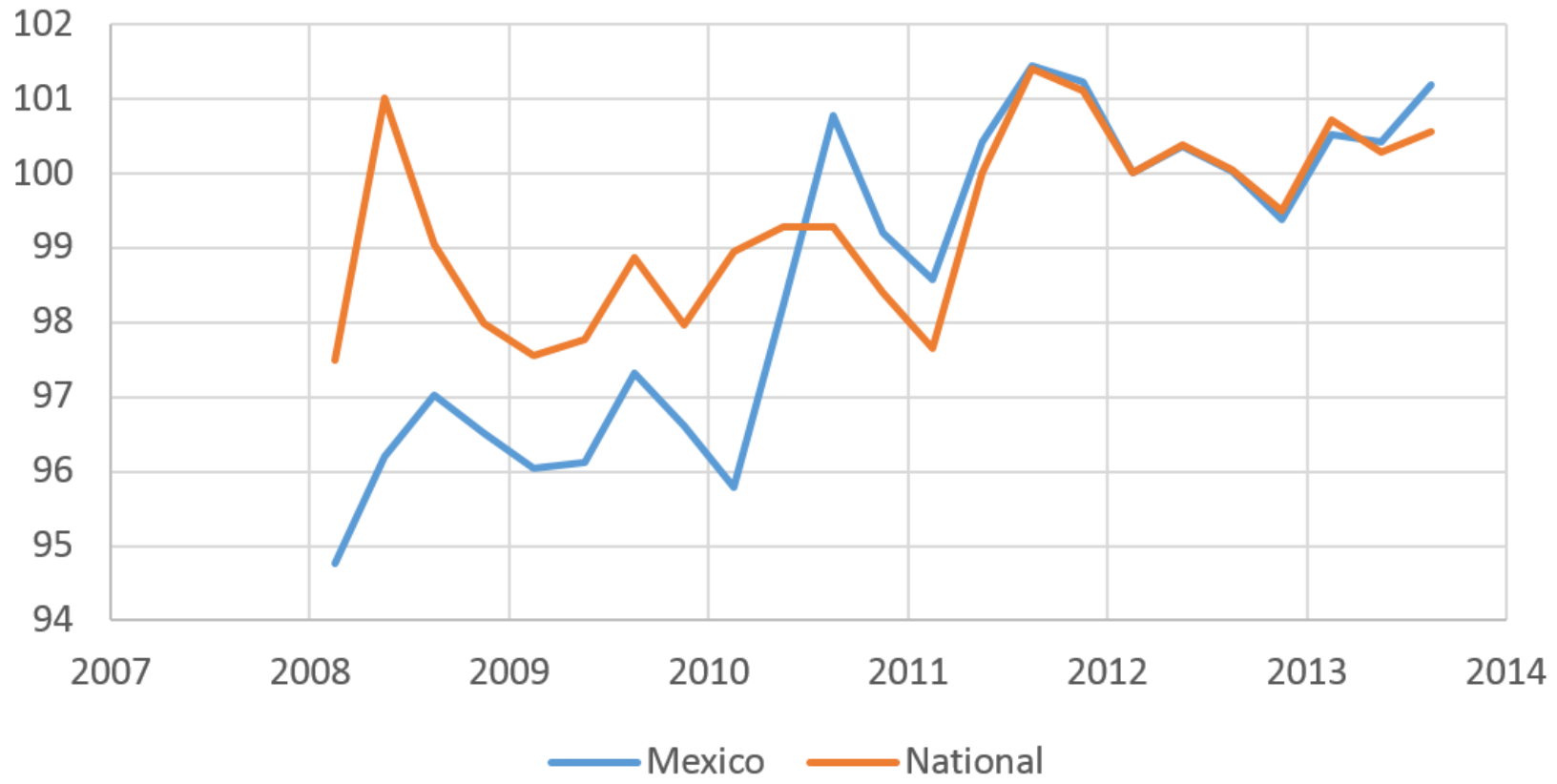
# Real Home Prices, Building Costs, Population, Interest Rates 1890-2007



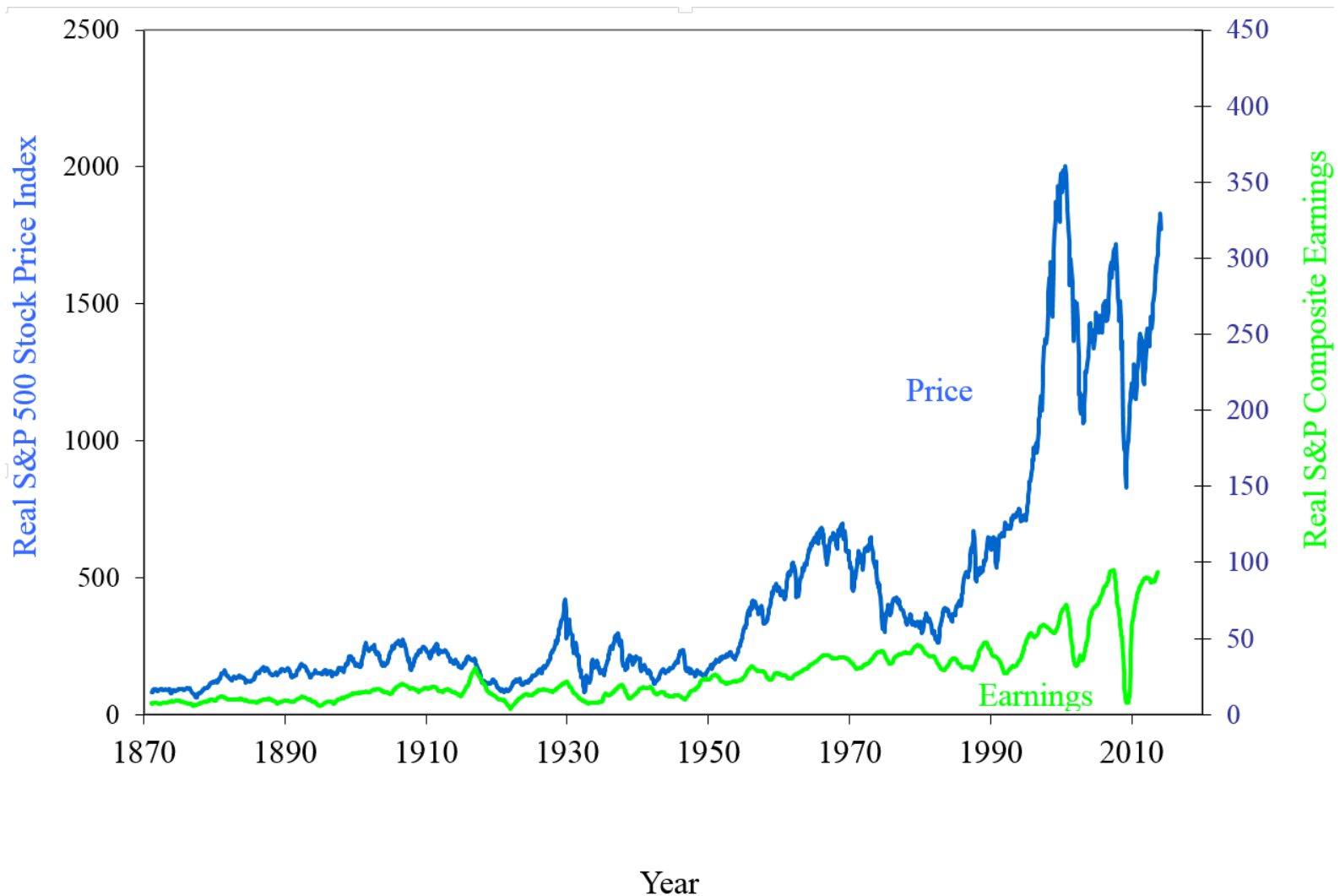
# U.S. Residential Investment 1948-I-2007-IV as Leading Indicator of Recessions



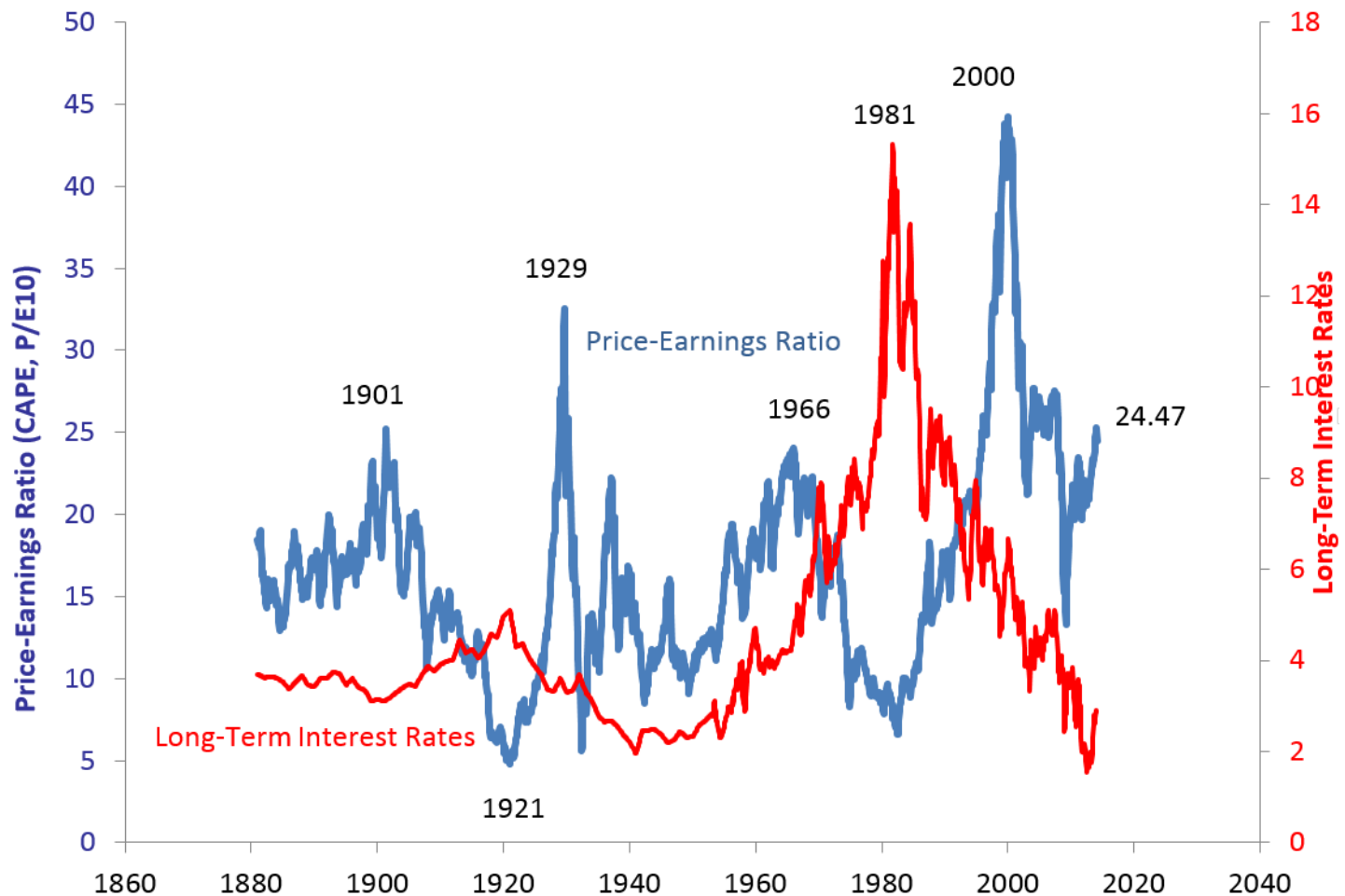
# Mexican Real Home Prices Deflated Indice SHF de Precios de la Vivienda



# Real Stock Price and Real Earnings US 1871-2014

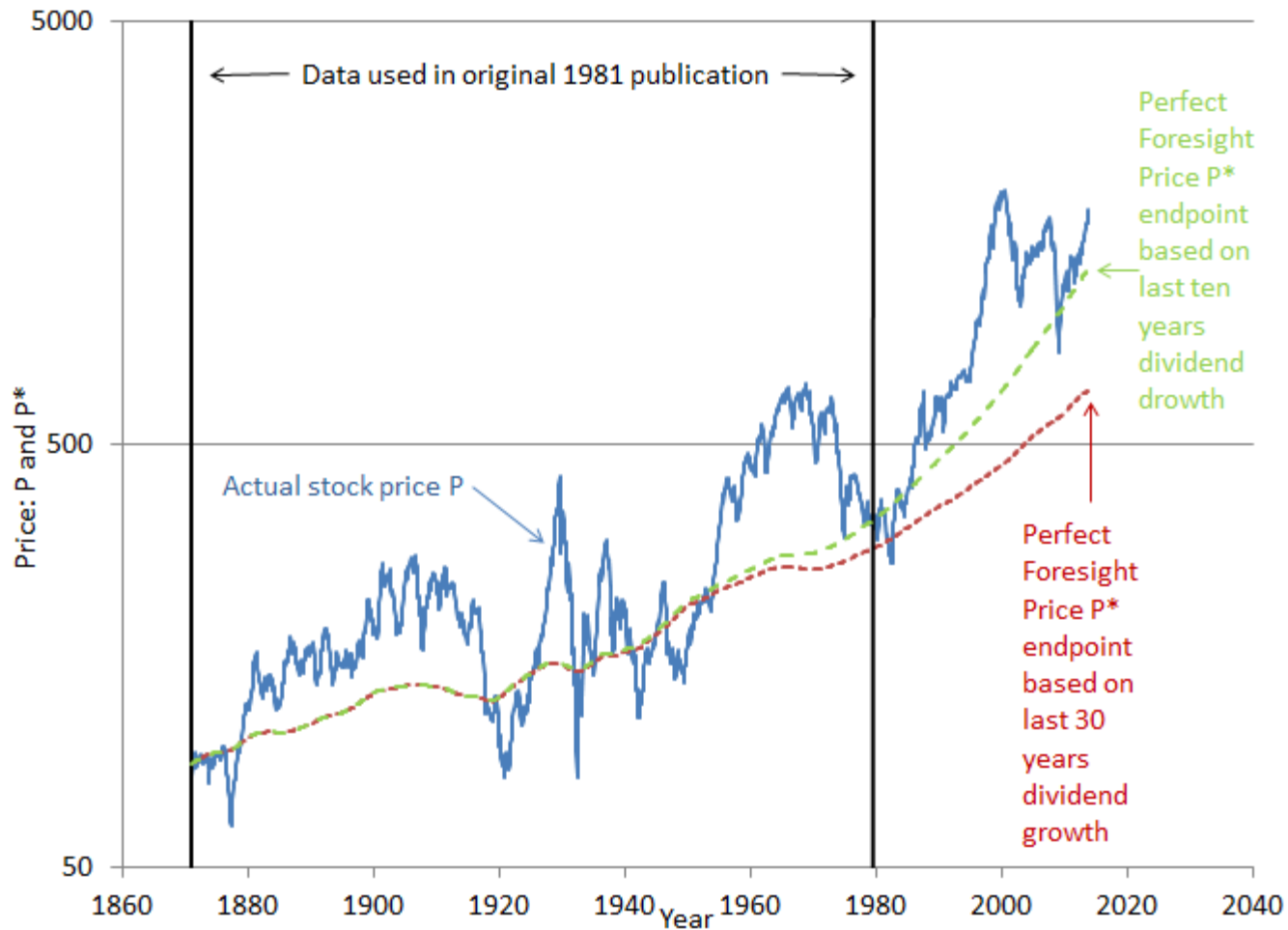


# Cyclically-Adjusted Price-Earnings Ratio US 1881-2014



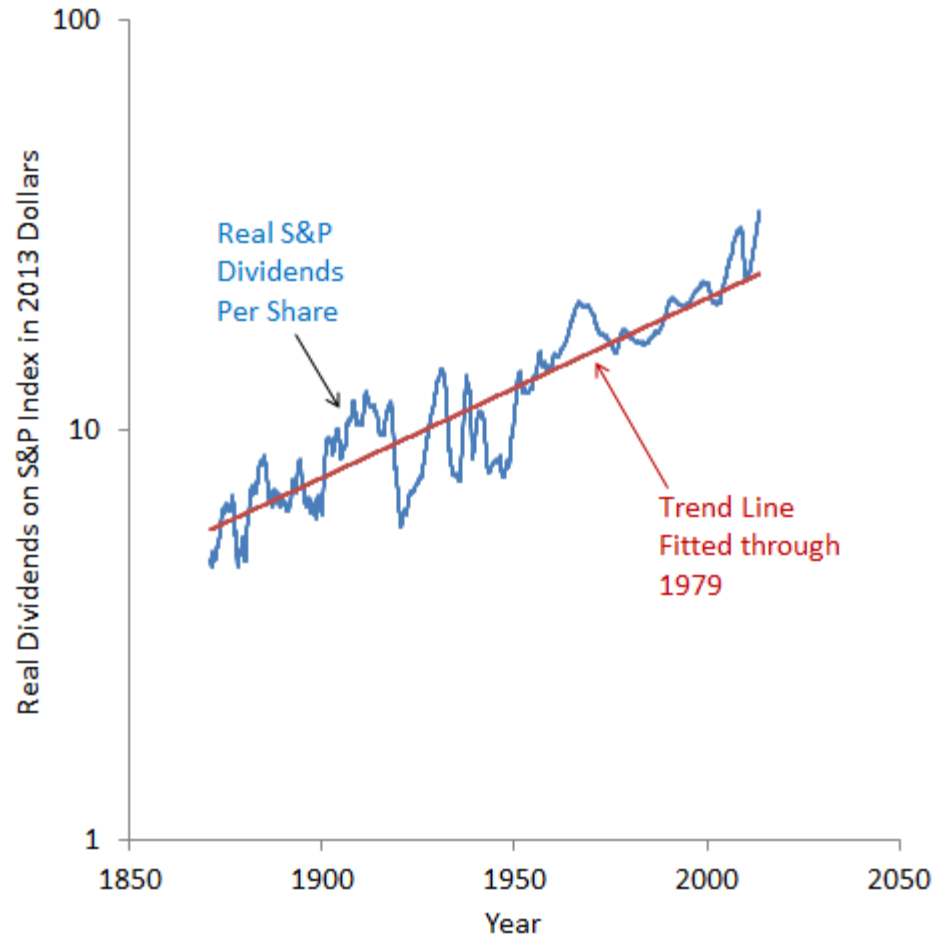
# Real US Stock Prices 1871-2013

Actual (Blue) and Ex-Post Rational (Red)  
Based on Shiller (Am. Econ Rev. 1981)

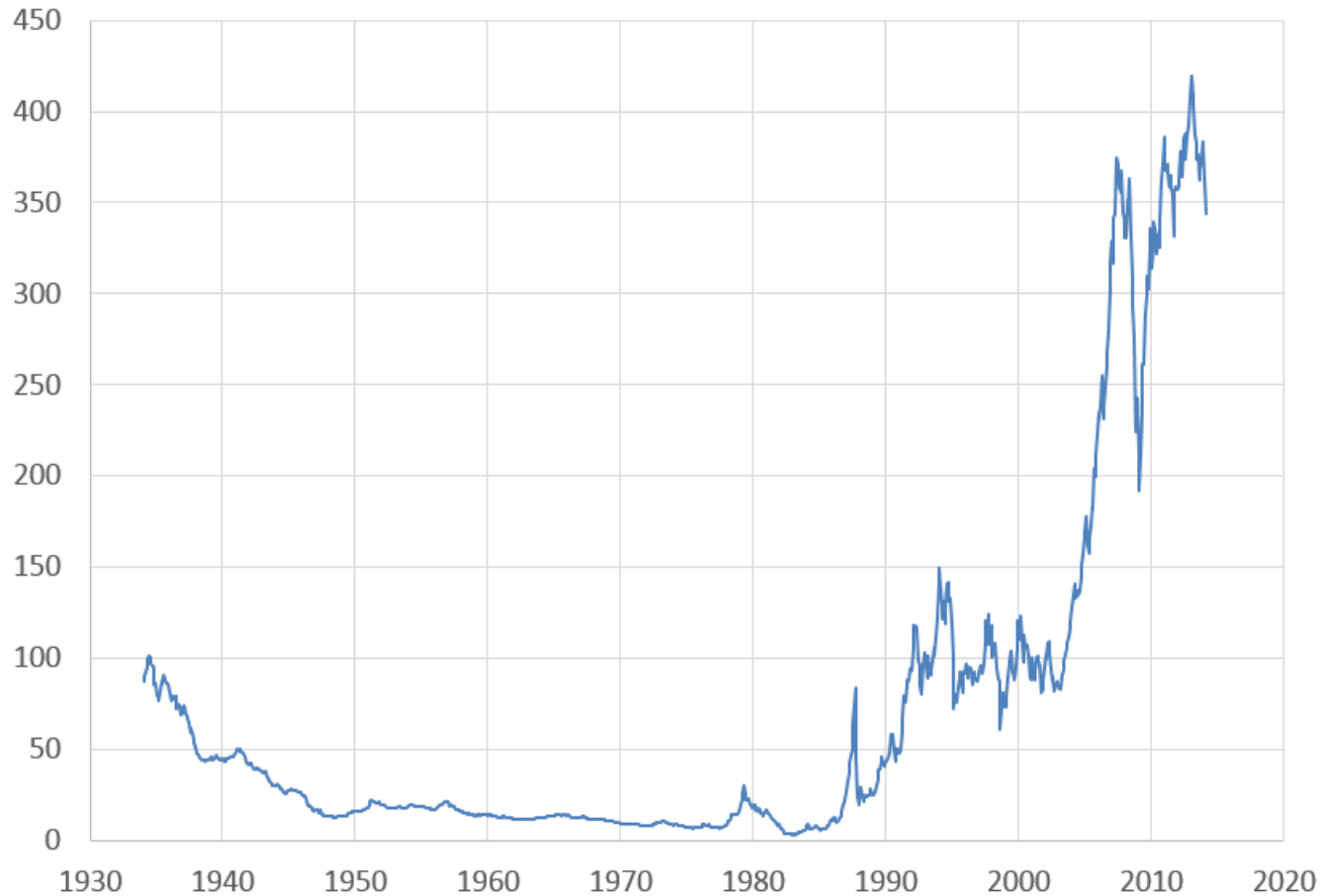




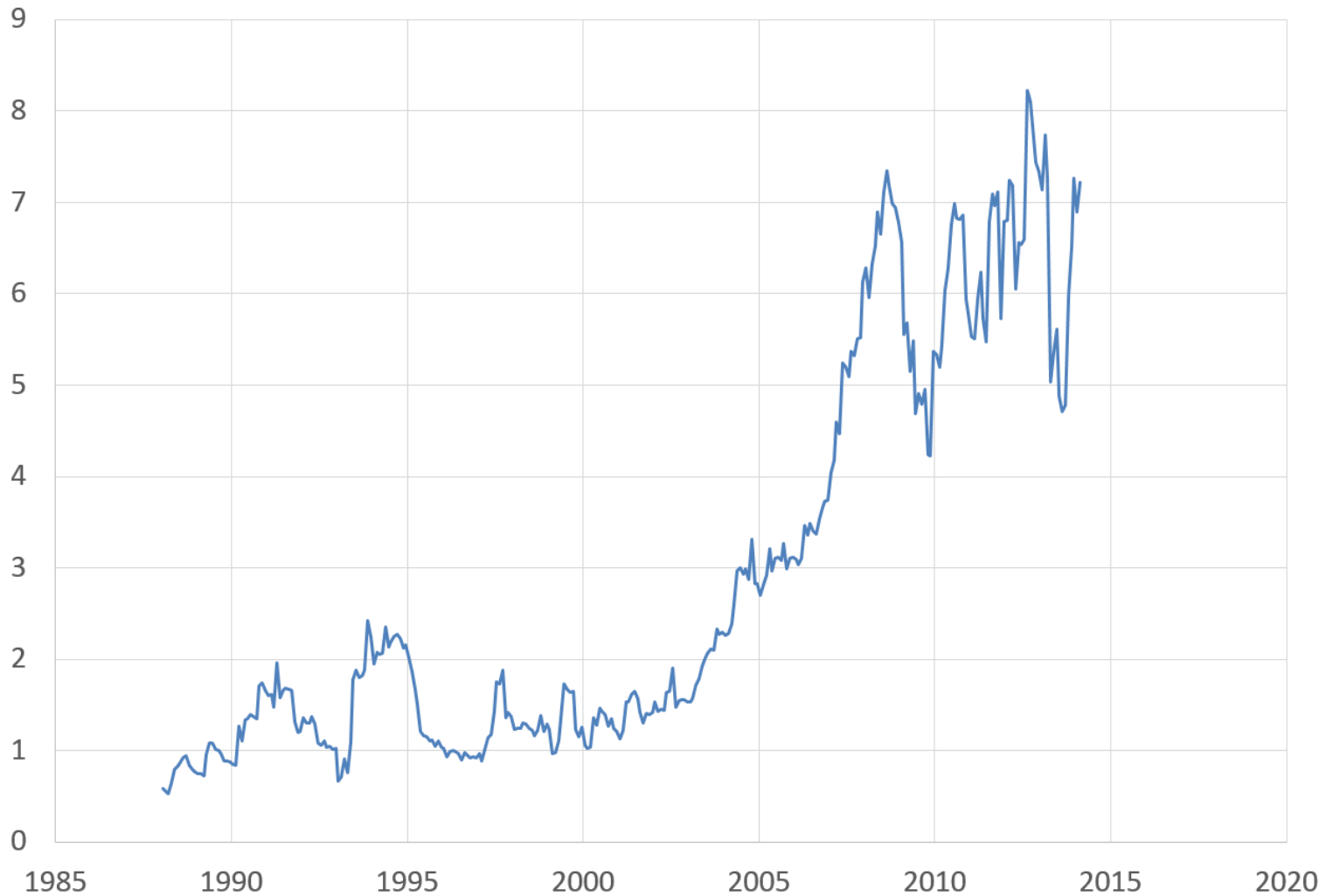
# Real S&P Composite Dividends Per Share 1871-2013



# GFD Mexican Real Stock Prices 1930-2014

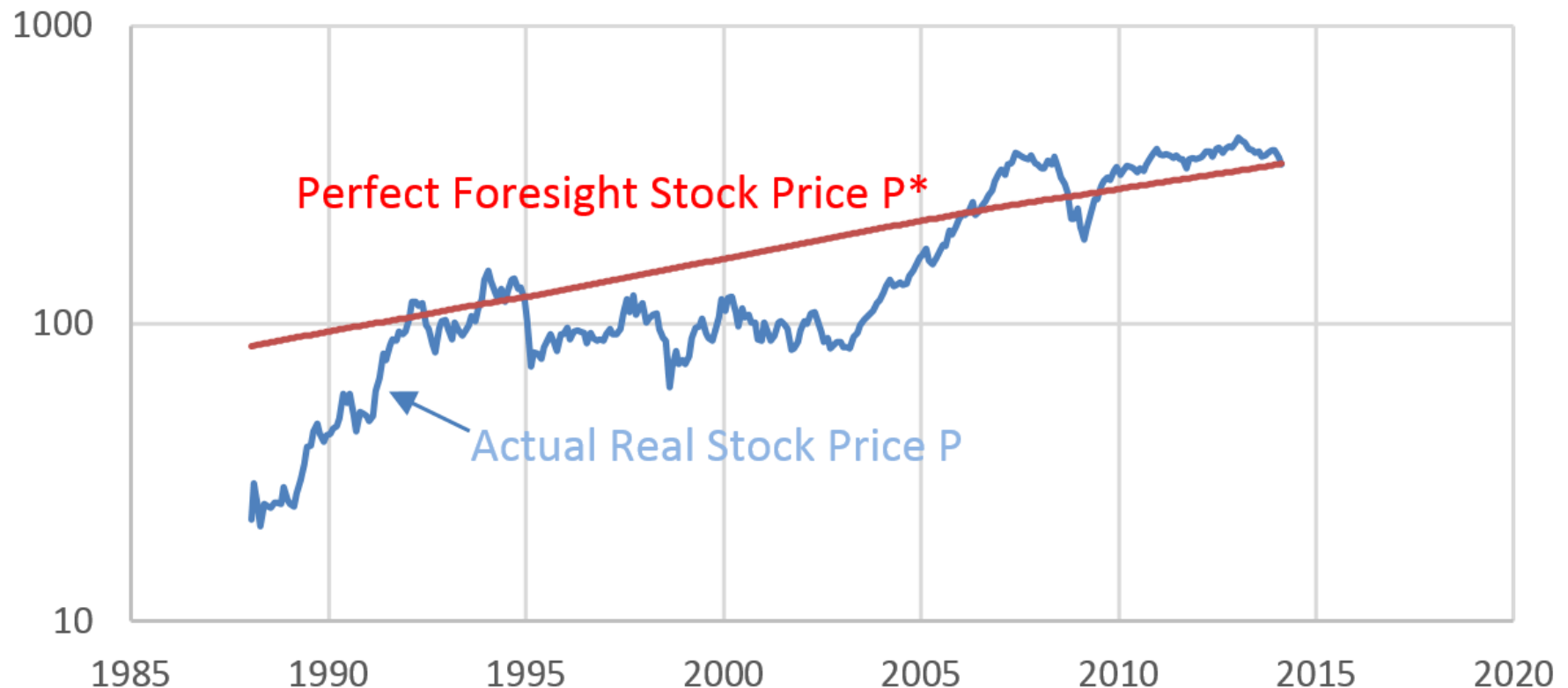


# Mexican Real Dividends



# Real Mexican Stock Prices 1988-2014

Actual (Blue) and Ex-Post Rational (Red)  
Based on Shiller (Am. Econ Rev. 1981)



# Definition of Speculative Bubble

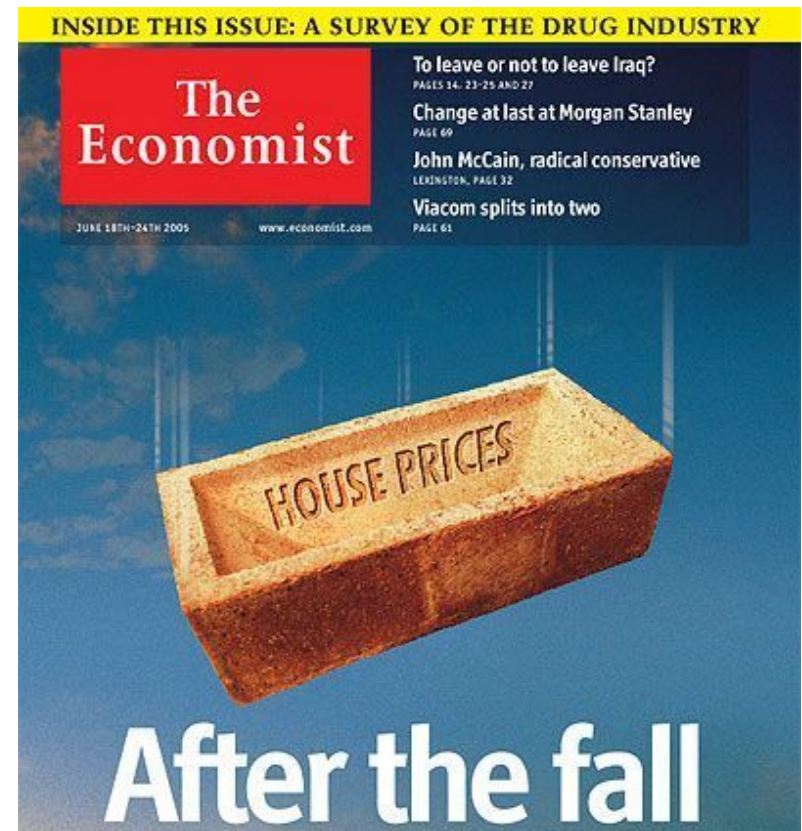
“I define a speculative bubble as a situation in which news of price increases spurs investor enthusiasm, which spreads by psychological contagion from person to person, amplifying stories [“new era” theories] that might justify the price increases and bringing in a larger and larger class of investors, who, despite doubts about the real value of the investment, are drawn to it partly through envy of others’ successes and partly through gambler’s excitement (Shiller, *Irrational Exuberance*, 2<sup>nd</sup> Edition, 2005)

# The Abrupt End of the US Housing Bubble

- Public mood in US changed abruptly in 2005
- Public learned the meaning of “speculative bubble”

# *The Economist* June 16, 2005

- “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.”



# *Time Magazine*, June 13, 2005

- “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”





# Barrons, June 20, 2005

- “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)

24 BARRON'S June 20, 2005

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.

## The Bubble's New Home

by Jonathan R. Laing



Shiller sees no rational reason for the sharp rise in housing prices over the past few years in many major markets, such as those shown in the charts below.

Shiller doesn't predict how or when the housing bubble will deflate. With enough price momentum alone the market began in 1997 with low mortgage rates and falling wages, the surge could persist for a while. Or it could end abruptly, as it did recently in the euro-zone, by way, Austria, residential market, where real (inflation-adjusted) prices rose 12.8% in 2003 before dropping 2.5% in 2004 and remaining widely over a line.

Timing hints, on the other hand, are more subtle. Wal Street, often short-sighted, is perceptibly and carefully slow. They're difficult to detect in their early phases, in part because accurate price data on comparable-house sales is hard to come by. So, you may look at tax records to estimate the prices fetched by two houses, each with four bedrooms and three baths and located in the same town. But determining precisely how their conditions, amenities and neighborhood stack up isn't easy.

Adding to the uncertainty: Homeowners often live in denial of market realities by listing their properties at unrealistic prices or simply taking their homes off the market to seek better deals.

Shiller worries that the market has become so overvalued in many areas of the U.S. that any decline could pick up momentum in two to three years, when the adjustable-rate mortgages that have accounted for nearly half of all home loans in the second half of 2004 will begin to "re-price" at higher interest rates, potentially buying overly optimistic buyers sporting a bad equity but hefty debt. Low-to-no-down-payment and interest-only mortgages would only add to the possible magnitude of a rocky market if home prices were to sag, Shiller adds.

In Shiller's view, a real price decline as much as 50% in U.S. home prices over the next decade isn't beyond the realm of possibility. Such a drop would be less catastrophic than it might seem at first blush. Like any economic shock, a real estate market crash would tend to amplify any downturn and create a ripple effect in national home prices. Thus, he foresees only a 25% to 25% cumulative decline in national prices (which works out to about an average of 8% a year over the decade) with the loss of purchasing power from 8% annual inflation accounting for the remainder of the "real" decline. Still, that would be a crushing blow to anyone counting on rising home values to fuel their exit from financial problems.

Such real estate downturns preceded the late 1980s and 1990s before beginning a sharp ascent. That drop was largely attributed to job losses from the contraction of the aerospace and defense industries in Southern California in the late '80s and the '90s.

However, today's speculative real-estate bubble is so enormous that it wouldn't take an "economic" event like changing interest rates or a recession to prick it, warns Shiller. Prices could simply crash under their own weight.

Three months ago, Shiller released a heavily revised edition of *Irrational Exuberance*, that includes a number of sections on the real-estate bubble and the troubled markets for housing.

The Yale economist has done much work over the years

Shiller sees no rational reason for the sharp rise in housing prices over the past few years in many major markets, such as those shown in the charts below.

YALE ECONOMIST ROBERT SHILLER DELIVERS HIS forecast for U.S. housing with a scholarly detachment that only slightly masks his stark message: The market is in the throes of a bubble of exaggerated proportions that probably will end aghast.

Such unsettling talk is always, of course, especially from a tenured academic, and many scores, including Bernheim, have wrongly predicted housing's steep fall several times in the past few years. But the Ivy League professor's forecasts of coming trouble have been right before. The best seller, *Irrational Exuberance*, predicting a bear market in U.S. stocks, hit the bookstore in March 2000, less than a week before the Nasdaq began a dizzying descent from above 5,000 that would destroy 19% of its value in a little over 2½ years.

In the real-estate market, Shiller contends, a price slide could begin any time with the exception of what he describes simply as "luck"—a word that he sees to cover everything from the recent, time magazine cover story on the vertiginous rise in home prices and the popularity of real-estate investment trusts, real-estate investing and investing in real estate to the breathless newspaper stories of Miami conducting "flips" for profit a half dozen times before construction even began.

The No. 1 league football party, shortly after the party, after all, is that nothing beats a house as an investment because prices just keep rising while the owner gets to live comfortably at the old house and can't be kicked out.

"The home-price bubble feels like the stock-market mania in the fall of 1929, just before the stock bubble burst in early 2000, with all the hype, herd investing and absolute confidence in the inevitability of continuing price appreciation," Shiller observes in the table of his companion effort, a converted Hobbes Barrow mansion on New Haven's stately Hillhouse Avenue. "My blood ran slightly cold at a cocktail party the other night when a recent Yale Medical School graduate told me that she was buying a condo close to Boston during her long internship, so that she could flip it for a profit next year. Tulipmania reigns."

Shiller, like any economist of reputation, is a naturalist.

### A Tale of Five Cities

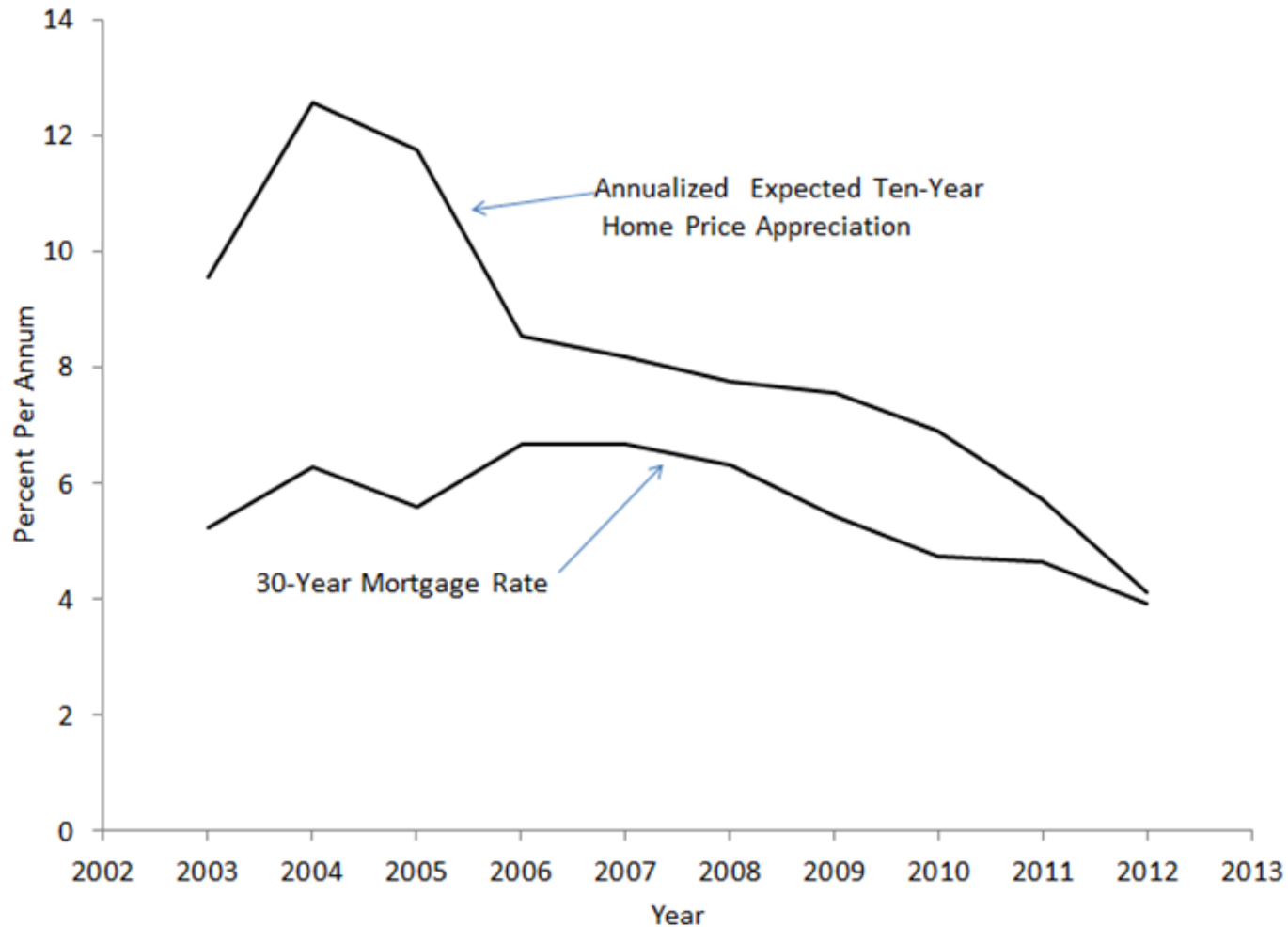
Home prices, adjusted for inflation\*



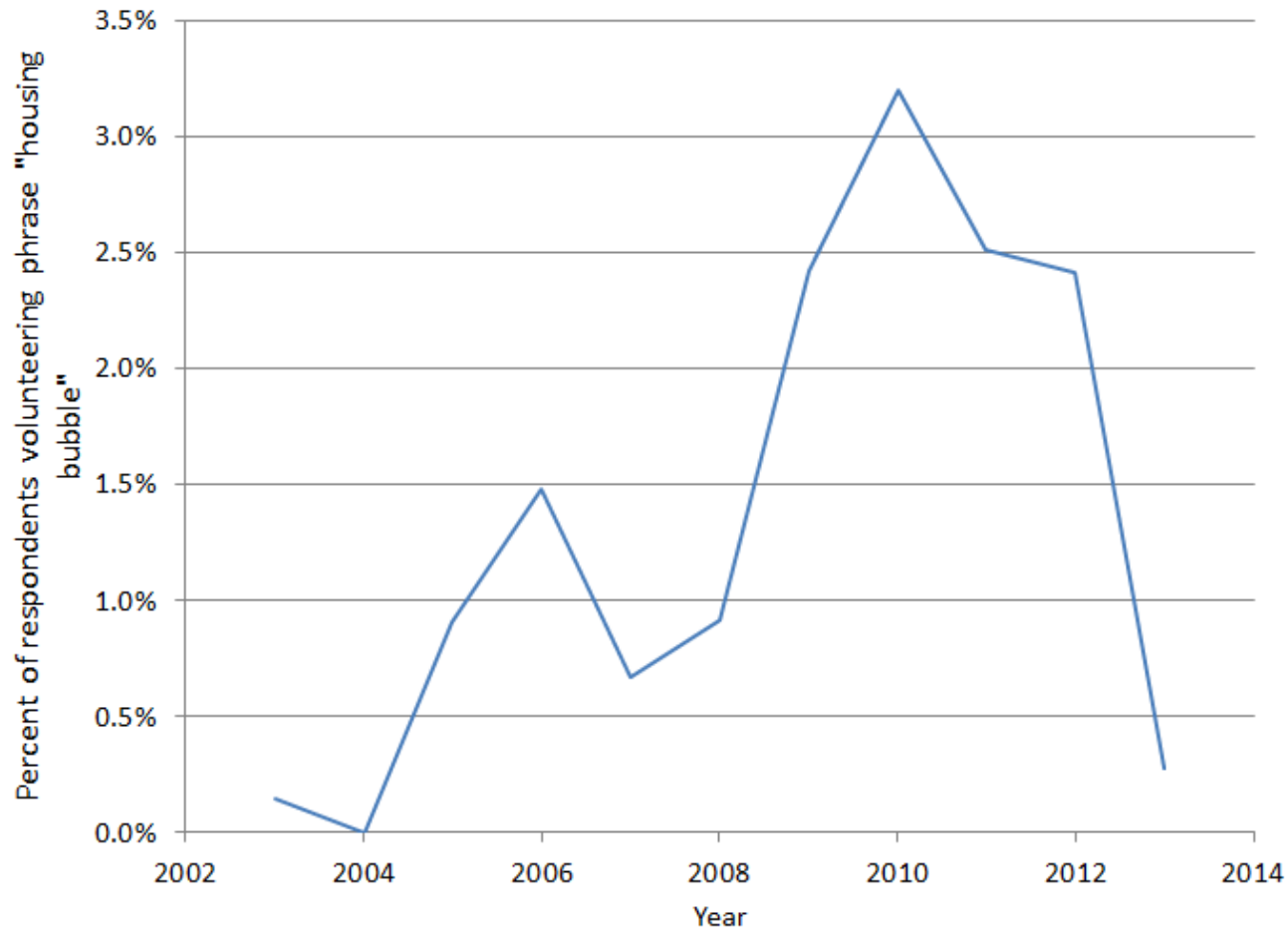
City	1990	1995	2000	2004
Chicago	100	110	130	150
Los Angeles	100	110	130	150
Miami	100	110	130	150
New York/Boston	100	110	130	150

\*1990 = 100. Source: FRED, Federal Reserve Bank of St. Louis.

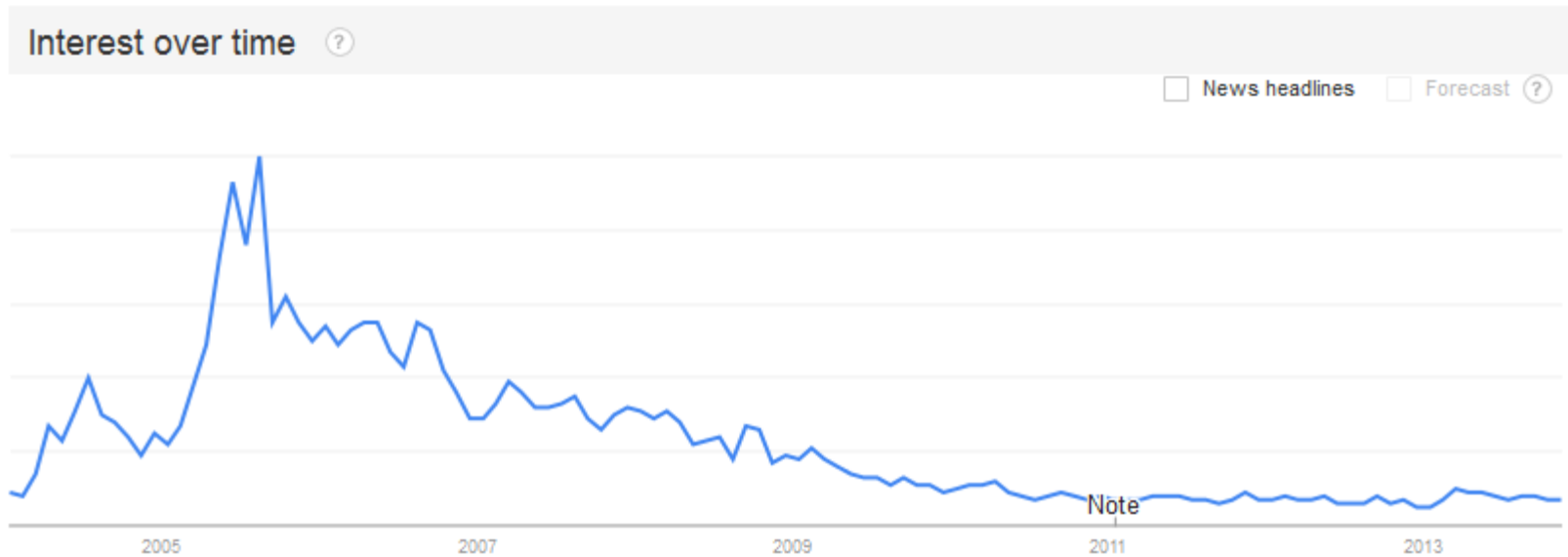
# Ten-Year Expectations And 30-Year Mortgage Rate (Case-Shiller- Thompson Brookings Papers 2013)



# Percentage of Respondents' Unprompted Use of "Housing Bubble" in Open-ended Questions (Case-Shiller-Thompson Brookings Papers 2013)



# Google Trends: Web Searches for “Housing Bubble” From the US Peak Aug 2005



# Definition of Negative Bubble

- In [a negative bubble] feedback occurs in a downward direction, as initial price declines discourage some investors, causing further price declines, and so on. . . Price continues to decline until further price decreases begin to seem unlikely, at which point there is no reason for people to want to stay away from the stock and the negative bubble fills back up (Shiller, *Irrational Exuberance*, 2<sup>nd</sup> Edition, 2005)

# The Financial Crisis as a Negative Bubble: Europe

- 2008: Greek street protests against raising the retirement age (in some cases from 50 to 55)
- Story resonates with subprime crisis story unfolding in US
- Rising Greek interest rates 2009 fed a story of Greek sense of entitlement, loss of reality
- Stories spread to include other “profligate” countries such as Spain and Italy

# Government Intervenes

- Post crisis, US government has borne the risk of default for 90% of new mortgages issued (through FHA, Fannie Mae, Freddie Mac) to support these markets
- Post crisis, central banks in US, UK, Japan, Europe, have expanded their balance sheets dramatically
- Quantitative easing, invented in Japan since 2000, has been the newly important policy tool

# Quantitative Easing Has Supported Bond Market through a Variety of Public Expectations Channels

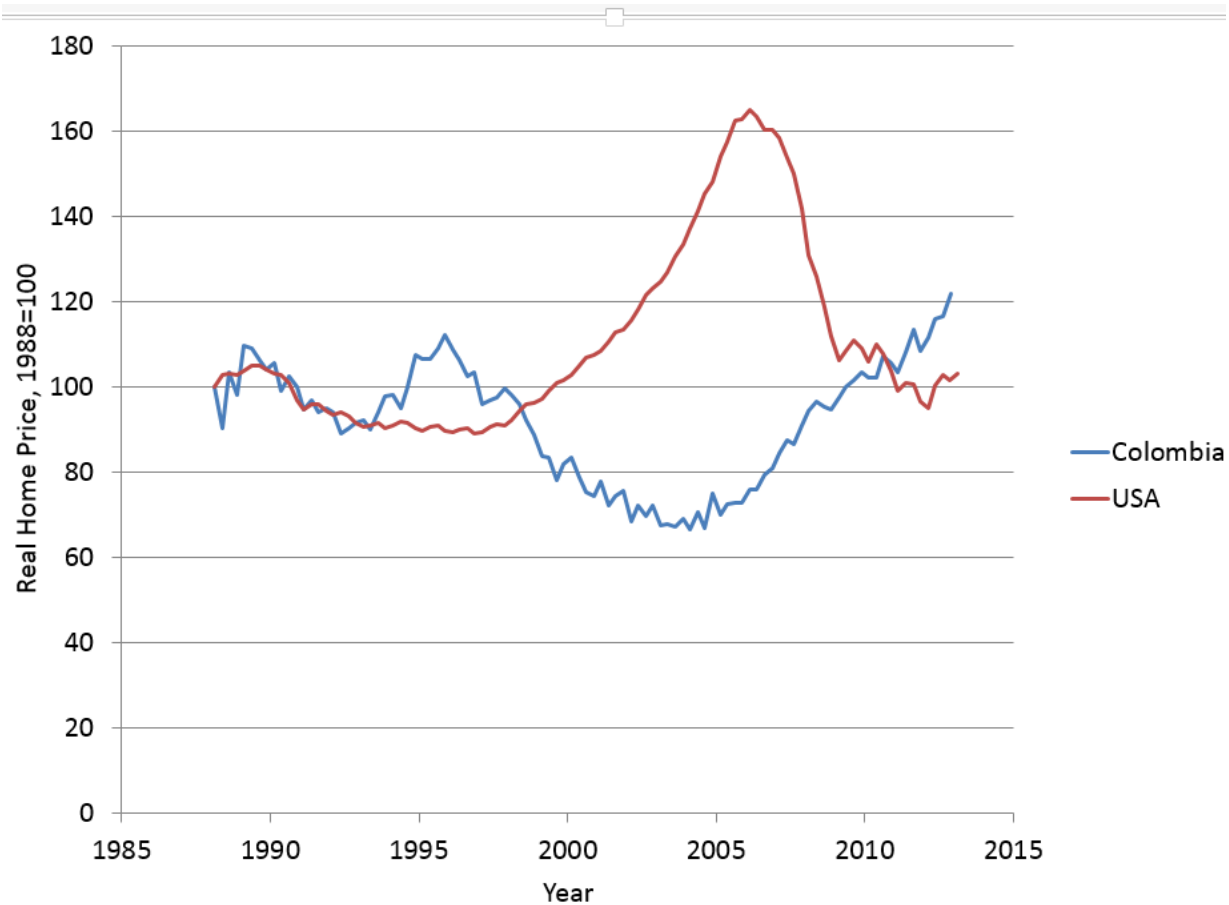
- Krishnamurthy and Vissing Jorgenson NBER 2011
  - Signalling channel
  - Inflation expectations channel
  - Default-risk channel
  - Repayment-risk channel
  - Liquidity channel
- Most of these channels have to do with expectations, ultimately public stories, and may not play out the same way next time



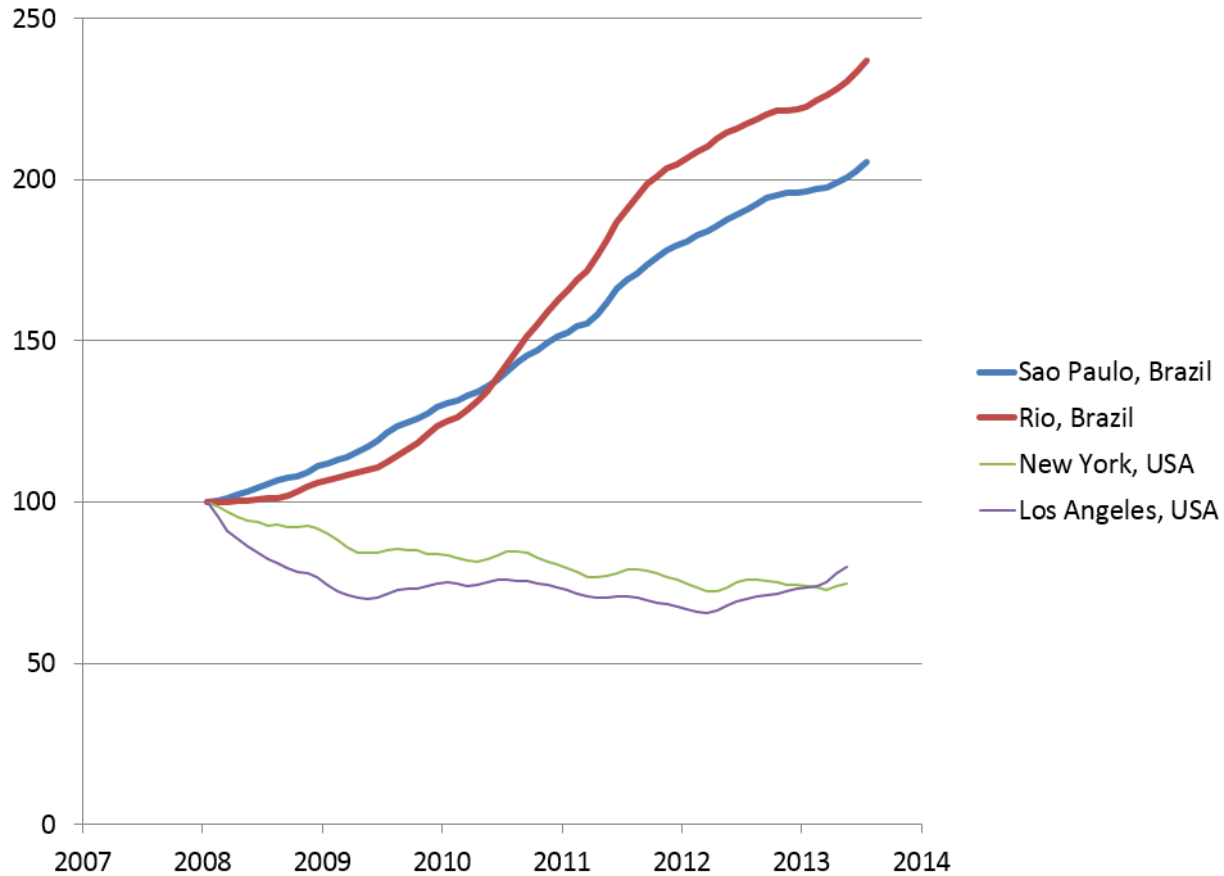
# Risks of Quantitative Easing

- Quantitative easing is played by independent central banks, not legislative branch
- Quasi-fiscal operations
- Quantitative easing puts taxpayer money at risk
- Could be a threat to central bank independence if risks turn out badly
- Already, Dodd-Frank 2010 in the US prohibits the kind of actions the Fed used to support Bear Stearns and AIG

# Some Current Situations in Latin America: Colombia



# Some Current Situations in Latin America: Brazil



# Finance and the Good Society

- Complexity of human psychology rules out strict efficient markets hypothesis
- Efficient markets theory is a half truth
- And yet our financial markets are important pillars of civilization
- Trend will be towards more and more advanced financial markets

## Las finanzas en una sociedad justa

*Dejemos de condenar el sistema financiero y, por el bien común, recuperémoslo*

Robert J. Shiller

Consejero de Abogado Espín y primer economista en predecir el estallido de la burbuja inmobiliaria en EE.UU.

DEUSTO