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United States housing bubble

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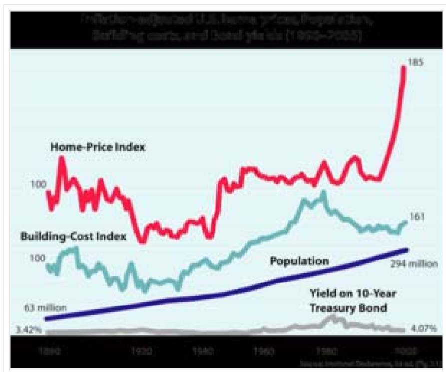
The **United States housing bubble** is an economic bubble in many parts of the U.S. housing market including areas of California, Florida, New York, Michigan, the suburbs of Chicago in the Midwest, the BosWash megalopolis, and the Southwest

Home $weet Home: cover of the June 13, 2005 issue of *Time* magazine[1] illustrating the mania[2] for home buying. The appearance of this cover was taken as a sign of the bubble's peak.[3]

markets. On a national level, housing prices peaked in early 2005, began declining in 2006 and have not yet bottomed. Increased foreclosure rates in 2006–2007 by U.S. homeowners led to a crisis in August 2007 for the subprime, Alt-A, CDO, CDX, mortgage, credit, hedge fund, and foreign bank markets.[2] The U.S. Treasury Secretary called the bursting housing bubble "the most significant risk to our economy."[4]

Housing bubbles may occur in local or global real estate markets. They are typically characterized, in their late stages, by rapid increases in the valuations of real property until unsustainable levels are reached relative to incomes, price-to-rent ratios, and other economic indicators of affordability. This may be followed by decreases in home prices that can result in many owners holding negative equity—a mortgage debt higher than the value of the property. The underlying causes of the housing bubble are complex; factors include historically-low interest rates, lax lending standards, and a speculative fever.[2][5][6][7][8] This bubble may be related to the stock market or dot-com bubble of the 1990s.[9][10][11][12][13] This bubble is roughly coincident with real estate bubbles in the United Kingdom, Germany and even South Korea.

Bubbles may be definitively identified only in hindsight, after a market correction,[14] which began for the U.S. housing market in 2005–2006.[15][16][17][18][19][20][21] Former U.S. Federal Reserve Board Chairman Alan Greenspan said "we had a bubble in housing"[22][23] and also said in the wake of the subprime mortgage and credit crisis in 2007, "I really didn't get it until very late in 2005 and 2006."[24] The mortgage and credit crisis was caused by a large number of home owners unable to pay the mortgage as their low introductory rate (sub-prime) mortgages reverted to regular interest rates. Freddie Mac CEO Richard Syron concluded, "We had a bubble",[25] and concurred with Yale economist Robert Shiller



Robert Shiller's plot of U.S. home prices, population, building costs, and bond yields, from *Irrational Exuberance*, 2d ed.[9] Shiller shows that inflation-adjusted U.S. home prices increased 0.4% per year from 1890–2004, and 0.7% per year from 1940–2004, whereas U.S. census data from 1940–2004 shows that the self-assessed value increased 2% per year.

's warning that home prices appear overvalued and that the correction could last years with trillions of dollars of home value being lost.[25] Greenspan warned of "large double digit declines" in home values "larger than most people expect."[23] Problems for home owners with good credit surfaced in mid-2007, causing the U.S.'s largest mortgage lender Countrywide Financial to warn that a recovery in the housing sector is not expected to occur at least until 2009 because home prices are falling "almost like never before, with the exception of the Great Depression."[26] The impact of booming home valuations on the U.S. economy since the 2001–2002 recession was an important factor in the recovery because a large component of consumer spending came from the related refinancing boom, which simultaneously allowed people to reduce their monthly mortgage payments with lower interest rates and withdraw equity from their homes as values increased.[5] Any collapse of the U.S. Housing Bubble has a direct impact not only on home valuations, but the nation's mortgage markets, home builders, real estate, home supply retail outlets, Wall Street hedge funds held by large institutional investors, and foreign banks, increasing the risk of a nationwide recession.[26][5][27][28] Concerns about the impact of the collapsing housing and credit markets on the larger U.S. economy caused President George W. Bush and Chairman of the Federal Reserve Ben Bernanke to announce a limited bailout of the U.S. housing market for homeowners unable to pay their mortgage debts.[29]

Contents

Timeline

Timeline 1985–ongoing

Former Bear Stearns hedge fund manager Matthew Tannin's perp walk after being arrested on 2008-06-19 by the FBI and charged with lying to investors about the collapse of the subprime mortgage market.[30] On 2008-03-18 JPMorgan bank agreed to purchase BSC for $2 per share (vs. its $170 peak) in exchange for the Federal Reserve Bank agreeing to accept BSC's devalued mortgage back securities as collateral for public loans at the newly created Term Securities Lending Facility (TSLF), effectively providing a mechanism to bail out Wall Street banks threatened with insolvency.[31]

- **1985–1991**: Savings and Loan crisis
  - **January 1989**: One-month drop in sales of previously owned homes of 12.6 percent.[21]
  - **1986–1991**: New homes constructed dropped from 1.8 to 1 million, the lowest rated since World War II.[32]
- **1991–1997**: Flat Housing prices
  - **1991**: US recession, new construction prices fall, but above inflationary growth allows them to return by 1997 in real terms.
  - **1997**: Mortgage denial rate of 29 percent for conventional home purchase loans[33]
  - **September 23, 1998**: New York Fed brings together consortium of investors to bail out Long-Term Capital Management
  - **1998**: Inflation-adjusted home price appreciation exceeds 10%/year in most West Coast metropolitan areas[34]
  - **1999**: Gramm-Leach-Bliley Act, repealed the Glass-Steagall Act of 1933, allowed commercial and investment banks to consolidate.
  - **1995–2001**: Dot-com bubble
    - **March 10, 2000**: Dot-com bubble collapse NASDAQ Composite index peaked
- **2000–2003**: Early 2000s recession (exact time varies by country)
- **2001–2005**: United States housing bubble (part of the world housing bubble)
  - **2001**: US Federal Reserve lowers Federal funds rate 11 times, from 6.5% to 1.75%.[10]
  - **2002–2003**: Mortgage denial rate of 14 percent for conventional home purchase loans, half of 1997[33]
  - **2002**: Annual home price appreciation of 10% or more in California, Florida, and most Northeastern states.
  - **2004**: U.S. homeownership rate peaked with an all time high of 69.2 percent.[35]
  - **1997–2005**:Mortgage fraud increased by 1,411 percent [36]
  - **2004–2005**: Arizona, California, Florida, Hawaii, and Nevada record price increases in excess of 25% per year.

- **2005–ongoing**: United States housing market correction ("bubble bursting")
  - **2005**: Boom ended August 2005. The booming housing market halted abruptly for many parts of the U.S. in late summer of 2005.
  - **2006**: Continued market slowdown. Prices are flat, home sales fall, resulting in inventory buildup. U.S. Home Construction Index is down over 40% as of mid-August 2006 compared to a year earlier.
  - **2007**: Year-to-year decreases in both U.S. home sales and home prices accelerates rather than bottoming out, with U.S. Treasury secretary Paulson calling the "the housing decline ... the most significant risk to our economy."[4]

Timeline 2007

- **2007**: Home sales continue to fall. The plunge in existing-home sales is the steepest since 1989. In Q1/2007, S&P/Case-Shiller house price index records first year-over-year decline in nationwide house prices since 1991.[37] The subprime mortgage industry collapses, and a surge of foreclosure activity (twice as bad as 2006[38]) and rising interest rates threaten to depress prices further as problems in the subprime markets spread to the near-prime and prime mortgage markets.[26]
  - **February–ongoing**: 2007 Subprime mortgage financial crisis
Subprime industry collapse; more than 25 subprime lenders declaring bankruptcy, announcing significant losses, or putting themselves up for sale.
  - **April 2**: New Century Financial, largest U.S. subprime lender, files for chapter 11 bankruptcy.
  - **July 19**: Dow Jones Industrial Average closes above 14,000 for the first time in its history.[39]
  - **August**: worldwide "credit crunch" as subprime mortgage backed securities are discovered in portfolios of banks and hedge funds around the world, from BNP Paribas to Bank of China. Many lenders stop offering home equity loans and "stated income" loans. Federal Reserve injects about $100B into the money supply for banks to borrow at a low rate.
  - **August 6**: American Home Mortgage files for chapter 11 bankruptcy.
  - **August 7**: Democratic presidential front-runner Hillary Clinton proposes a $1 billion bailout fund to help homeowners at risk for foreclosure.[40]
  - **August 16**: Countrywide Financial Corporation, the biggest U.S. mortgage lender, narrowly avoids bankruptcy by taking out an emergency loan of $11 billion from a group of banks.[41]
  - **August 17**: Federal Reserve lowers the discount rate by 50 basis points to 5.75% from 6.25%.
  - **August 31**: President Bush announces a limited bailout of U.S. homeowners unable to pay the rising costs of their debts.[29] Ameriquest, once the largest subprime lender in the U.S., goes out of business;[42]
  - **September 1–3**: Fed Economic Symposium in Jackson Hole, WY addressed the housing recession that jeopardizes U.S. growth. Several critics argued that the Fed should use regulation and interest rates to prevent asset-price bubbles,[43] blamed former Fed-chairman Alan Greenspan's low interest rate policies for stoking the U.S. housing boom and subsequent bust,[44][45] and Yale University economist Robert Shiller warned of possible home price declines of 50 percent.[46]
  - **September 14**: A run on the bank forms at the United Kingdom's Northern Rock bank precipitated by liquidity problems related to the subprime crisis.[47]
  - **September 17**: Former Fed Chairman Alan Greenspan said "we had a bubble in housing"[22][23] and warns of "large double digit declines" in home values "larger than most people expect."
  - **September 18**: The Fed lowers interest rates by half a percent (50 basis points) to 4.75% in an attempt to limit damage to the economy from the housing and credit crises.[48]
  - **September 28**: Television finance personality Jim Cramer warns Americans on *The Today Show*, "don't you dare buy a home—you'll lose money," causing a furor among realtors.[49]
  - **September 30**: Affected by the spiraling mortgage and credit crises, Internet banking pioneer NetBank goes bankrupt[50] NetBank Inc was the largest savings and loan failure since the tail end of the Savings and Loan crisis in the early 1990s. [51] and the Swiss bank UBS announced that it lost US$690 million in the third quarter.[52]
  - **September 30**:Prices fell 4.9 percent from September 2006 in 20 large metropolitan areas, according to Standard & Poor's/Case-Shiller indexes. This is the 9th straight month prices have fallen.[53]
  - **October 10**: US Government and private industry created Hope Now Alliance to help some sub-prime borrowers.[54]
  - **October 15–17**: A consortium of U.S. banks backed by the U.S. government announced a "superfund" or "super-SIV" of $100 billion to purchase mortgage backed securities whose mark-to-market value plummeted in the subprime collapse.[55] Fed chairman Ben Bernanke expressed alarm about the dangers posed by the bursting housing bubble; Treasury Secretary Hank Paulson said "the housing decline is still unfolding and I view it as the most significant risk to our economy. ... The longer housing prices remain stagnant or fall, the greater the penalty to our future economic growth."[4]
  - **October 31**: Federal Reserve lowers the federal funds rate by 25 basis points to 4.5 percent and the discount window rate by 25 basis points to 5 percent.
  - **October 31**: Prices fell 6.1 percent from October 2006 in 20 large metropolitan areas, according to Standard & Poor's/Case-Shiller indexes. This is the 10th straight month priced have fallen.[53]
  - **November 1**: Federal Reserve injects $41B into the money supply for banks to borrow at a low rate. The largest single expansion by the Fed since $50.35B on September 19, 2001.
  - **December 6**: President Bush announced a plan to voluntarily freeze the mortgages of a limited number of mortgage debtors holding ARMs for 5 years. The plan run by the Hope Now Alliance. Its phone number is 1-888-995-HOPE.[56] Some experts criticized the plan as "a Band-Aid when the patient needs major surgery",[57] a "teaser-freezer",[58] and a "bail-out".[59][60]
  - **December 11**: Federal Reserve lowers the federal funds rate by 25 basis points to 4.25 percent and the discount window rate by 25 basis points to 4.75 percent.
  - **December 12**: Federal Reserve injects $40B into the money supply for banks to borrow at a low rate and coordinates such efforts with central

banks from Canada, United Kingdom, Switzerland and European Union.

- **December 24**: A consortium of banks officially abandons the U.S. government-supported "super-SIV" mortgage crisis bail-out plan announced in mid-October,[61]
  citing a lack of demand for the risky mortgage products on which the plan was based, and widespread criticism that the fund was a flawed idea that would have been difficult to execute.[61]
- **December 26**: Standard & Poor's/Case-Shiller indexes of housing prices in 20 large metropolitan areas for October 2007 is released showing that for the 10th straight month priced have fallen, but most worrying is that the decline in home prices accelerated and spread to more regions of the country in October. "Since their peak in July 2006, home prices in the 20 regions have dropped 6.6 percent.[53] Economists' predictions of the total amount of home price declines from the bubble's peak range from moderate 10–15 percent to larger 30–50 percent price declines in some areas.[46][53]
- **December 28**: The November U.S. Commerce Department's "stunningly weak report" released on December 28, 2007 show that year to year decreases in both U.S. home sales and home prices is accelerating rather than bottoming out due to "eminently rational behaviour" based on "a psychological point where expectations of future price declines have become entrenched".[62]

Timeline 2008

- **2008**: Home sales continue to fall. Fears of a U.S. recession. Global stock market corrections and volatility.
  - **January 2–21**: January 2008 stock market downturn
  - **January 24**: The National Association of Realtors (NAR) announced that 2007 had the largest drop in existing home sales in 25 years,[63] and "the first price decline in many, many years and possibly going back to the Great Depression."[64]
  - **March 10**: Dow Jones Industrial Average at the lowest level since October 2006, falling more than 20% from its peak just five months prior.
  - **March 14–18**: Dropping valuations of mortgage securities caused by skyrocketing default and foreclosure rates forces margin calls to the Wall Street bank Bear Stearns
    for debts the bank used to leverage mortgage issuances, and threatens BSC with bankruptcy and causes worldwide market jitters. In a weekend deal brokered by U.S. Treasury secretary Paulson and Fed chairman Ben Bernanke, JPMorgan bank agrees to purchase BSC for $2 per share, compared to their 2007 high of nearly $170, in exchange for the Federal Reserve Bank agreeing to accept BSC's devalued mortgage back securities as collateral for public loans at the newly created Term Securities Lending Facility (TSLF), effectively providing a mechanism to bail out Wall Street banks threatened with insolvency.[31]
  - **March 1–June 18**: 406 people were arrested for mortgage fraud in an FBI sting across the U.S., including buyers, sellers and others across the wide-ranging mortgage industry.[65]
  - **June 18**: As the chairman of the Senate Banking Committee Connecticut's Christopher Dodd proposed a housing bailout to the Senate floor that would assist troubled subprime mortgage lenders such as Countrywide Bank, Dodd admitted that he received special treatment, perks, and campaign donations from Countrywide, who regarded Dodd as a "special" customer and a "Friend of Angelo." Dodd received a $75,000 reduction in mortgage payments from Countrywide.[66][67] The Chairman of the Senate Finance Committee Kent Conrad and the head of head of Fannie Mae Jim Johnson also received mortgages on favorable terms due to their association with Countrywide CEO Angelo R. Mozilo.[68][66]
  - **June 19**: Ex-Bear Stearns fund managers were arrested by the FBI for their allegedly fraudlent role in the subprime mortgage collapse. The managers purportedly misrepresented the fiscal health of their funds to investors publicly while privately withdrawing their own money.[69]

Identifying the housing bubble

The Economist magazine cover, June 16, 2005, with a prediction about the direction of home prices after the "fall" of 2005.[14]

Any type of economic bubble is difficult to identify except in hindsight, after the crash, although many economic and cultural factors have led several economists to argue that a housing bubble exists in the U.S.[14][9][70][71][72][73][74][75] The *Economist* magazine said that "the worldwide rise in house prices is the biggest bubble in history,"[76] so any explanation must consider global causes as well as those specific to the United States. Former Federal Reserve Board Chairman Alan Greenspan said in mid-2005 that "at a minimum, there's a little 'froth' (in the U.S. housing market) ... it's hard not to see that there are a lot of local bubbles"; Greenspan admitted in 2007 that *froth* "was a euphemism for a bubble."[23] President Bush said of the U.S. housing boom in early 2006: "If houses get too expensive, people will stop buying them... Economies should cycle."[77]

Based on markedly declining 2006 market data, including lower sales, rising inventories, falling median prices, and increased foreclosure rates,[18] some economists have concluded that the correction in the U.S. housing market began in 2006.[27][78] A May 2006 *Fortune* magazine report on the US housing bubble states: "The great housing bubble has finally started to deflate ... In many once-sizzling markets around the country, accounts of dropping list prices

have replaced tales of waiting lists for unbuilt condos and bidding wars over humdrum three-bedroom colonials."[16] The chief economist of Freddie Mac and the director of Harvard University's Joint Center for Housing Studies (http://www.jchs.harvard.edu/) (JCHS) deny the existence of a national housing bubble and express doubt that any significant decline in home prices are possible, citing consistently rising prices since the Great Depression, expected increasing demand by the Baby Boom generation, and healthy employment.[79][80][81] However, some have suggested that the funding that the JCHS receives from the real estate industry may have affected their judgment.[82] David Lereah, former chief economist of the National Association of Realtors (NAR), distributed "Anti-Bubble Reports" in August 2005 to "respond to the irresponsible bubble accusations made by your local media and local academics."[83]
Among other statements, the reports say that people "should [not] be concerned that home prices are rising faster than family income", that "there is virtually no risk of a national housing price bubble based on the fundamental demand for housing and predictable economic factors", and that "a general slowing in the rate of price growth can be expected, but in many areas inventory shortages will persist and home prices are likely to continue to rise above historic norms."[84] Following reports of rapid sales declines and price depreciation in August 2006,[85][86] Lereah admitted that "he expects home prices to come down 5% nationally, more in some markets, less in others. And a few cities in Florida and California, where home prices soared to nose-bleed heights, could have 'hard landings'."[20]

National home sales and prices both fell dramatically in March 2007 — the steepest plunge since the Savings and Loan crisis in 1989 — according to NAR data, with sales down 13% to 482,000 from the peak of 554,000 in March 2006 and the national median price falling nearly 6% to $217,000 from the peak of $230,200 in July 2006.[21]

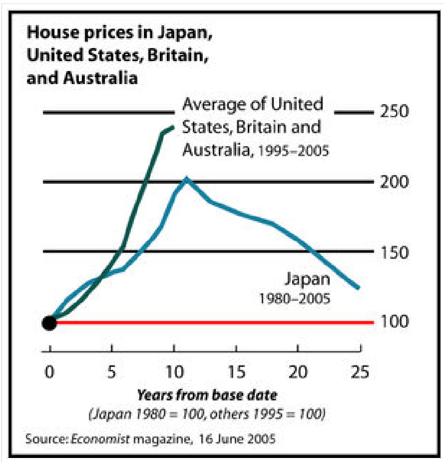
John A. Kilpatrick, of Greenfield Advisors, was cited by Bloomberg News on June 14, 2007, on the linkage between increased foreclosures and localized housing price declines. "Living in an area with multiple foreclosures can result in a 10 percent to 20 percent decrease in property values." He went on to say, "In some cases that can wipe out the equity of homeowners or leave them owing more on their mortgage than the house is worth. The innocent houses that just happen to be sitting next to those properties are going to take a hit."[87] He echoed his own comments from the April 5, 2007, issue of the *International Herald Tribune*, in which he said, "Living on a block with multiple foreclosures can result in a 10 percent to 20 percent decrease in property values. In some cases that can wipe out the equity of homeowners or leave them owing more on their mortgage than the house is worth. If you see a neighborhood with a couple of foreclosures on the block, a couple of auction signs in the yards, that's going to be a neighborhood that's stigmatized. The innocent houses that just happen to be sitting next to those properties are going to take a hit."[88]

The US Senate Banking Committee
held hearings on the housing bubble and related loan practices in 2006, titled "The Housing Bubble and its Implications for the Economy" and "Calculated Risk: Assessing Non-Traditional Mortgage Products".[89] Following the [[Subprime mortgage crisis|collapse]] of the subprime mortgage industry in March 2007, Senator Chris Dodd, Chairman of the Banking Committee
held hearings and asked executives from the top five subprime mortgage companies to testify and explain their lending practices. Dodd said that "predatory lending practices" endangered the home ownership for millions of people.[8] Moreover, Democratic senators such as Senator Charles Schumer of New York are already proposing a federal government bailout of subprime borrowers in order to save homeowners from losing their residences.[8]

Causes

Mania for home ownership

Americans' love of their homes is widely known and acknowledged;[1] however, many believe



Inflation-adjusted housing prices in Japan (1980–2005) compared to home price appreciation the United States, Britain, and Australia (1995–2005).

Approximate cost to own mortgaged property vs. renting.
An approximate formula for the

monthly cost of owning a home is obtained by computing the monthly mortgage, property tax, and maintenance costs, accounting for the U.S. tax deduction available for mortgage interest payments and property taxes. This formula does not include the cost of foregoing the standard deduction (required for taking the tax deduction). Assuming a home cost of *P* dollars, yearly interest rate *r* fixed over *N* years, marginal income tax rate r_{IT}, property tax rate r_{PT} (assumed to be ½–2% of *P*), and yearly maintenance cost rate r_{M} (assumed to be ½–1% of *P*), the monthly cost of home ownership is approximately[90]

$$\mathrm{cost} \approx \left(\left(\frac{r}{1-(1+r)^{-N}} + r_{\mathrm{PT}} \right) \times (1 - r_{\mathrm{IT}}) + r_{\mathrm{M}} \right) \times P/12.$$

For example, the monthly cost of a $250,000 home at 6% interest fixed over 30 years, with 1% property taxes, 0.75% maintenance costs, and a 30% federal income tax rate is approximately $1361 per month. The rental cost for an equivalent home may be less in many U.S. cities as of 2006. Adding a down payment or home equity to this calculation can significantly reduce the monthly cost of ownership, while significantly reducing the income stream that the downpayment would generate in a long term CD. Including the monthly cost of forgoing the standard deduction ($10000 for a married couple), the added cost (the reduction in tax savings) of (deduction * tax_rate / 12) would increase the cost to buy a home by $250/mo, to $1611 for a married couple filing jointly in the example above.

Equivalent price-to-earnings (P/E) ratio for homes.
To compute the P/E ratio for the case of a rented house, divide the price of the house by its potential yearly earnings or net income, which is the market rent of the house minus expenses, which include property taxes, maintenance and fees. This formula is:

$$\mathrm{P/E\ ratio} = \frac{\mathrm{Price}}{\mathrm{Rent} - \mathrm{Expenses}}.$$

For the example of the $250,000 home considered above, the P/E ratio would be 24 if this home rents for $1250 per month.

Fortune magazine cites a historic range of 11 or 12 for the simpler price-to-rent ratio.[91]

that enthusiasm for home ownership is currently high even by American standards, calling the real estate market "frothy",[92] "speculative madness",[6] and a "mania".[2] Many observers have commented on this phenomenon[93][94][95]—as evidenced by the cover of the June 13, 2005 issue of *Time Magazine*[1] (seen above, itself taken as a sign of the bubble's peak[3])—but as a 2007 article in *Forbes* warns, "to realize that America's mania for home-buying is out of all proportion to sober reality, one needs to look no further than the current subprime lending mess... As interest rates—and mortgage payments—have started to climb, many of these new owners are having difficulty making ends meet... Those borrowers are much worse off than before they bought."[96] The boom in housing has also created a boom in the real estate profession; for example, California has a record half-million real estate licencees—one for every 52 adults living in the state, up 57% in the last five years.[97]

The overall U.S. homeownership rate increased from 64 percent in 1994 (about where it was since 1980) to a peak in 2004 with an all time high of 69.2 percent.[35] Bush's 2004 campaign slogan "the ownership society" indicates the strong preference and societal influence of Americans to own the homes they live in, as opposed to renting. However, in many parts of the United States, rent does not cover mortgage costs; the national median mortgage payment is $1,687 per month, nearly twice the median rent payment of $868 per month, although this ratio can vary significantly from market to market.[98]

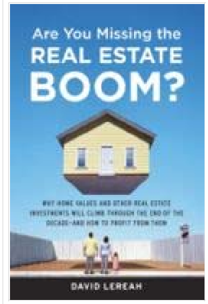
Some borrowers committed mortgage fraud, which increased by 1,411 percent between 1997 and 2005 (based on Suspicious Activity Reports), to buy homes they could not afford. [99]

Belief that housing is a good investment

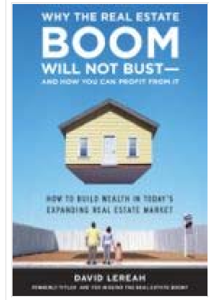
Among Americans, home ownership is widely accepted as preferable to renting in many cases, especially when the ownership term is expected to be at least five years. This is partly due to the fact that the fraction of a fixed-rate mortgage used to pay down the principal builds equity for the homeowner over time, while the interest portion of the loan payments qualifies for a tax break, whereas, except for the personal tax deduction often available to renters but not to homeowners, money spent on rent does neither. However, when considered as an investment, that is, an asset that is expected to grow in value over time, as opposed to the utility of shelter that home ownership provides, housing is not a risk-free investment. The popular notion that, unlike stocks, homes do not fall in value is believed to have contributed to the mania for purchasing homes. Stock prices are reported in real time, which means investors witness the volatility. However, homes are usually valued yearly or less often, thereby smoothing out perceptions of volatility. This assertion that property prices rise has been true for the United States as a whole since the Great Depression,[79] and appears to be encouraged by the real estate industry.[74][100] However, housing prices can move both up and down in local markets, as evidenced by the relatively recent price history in locations such as New York, Los Angeles, Boston, Japan, Vancouver, Seoul, Sydney, and Hong Kong; large trends of up and down price fluctuations can be seen in many U.S. cities (see graph). Since 2005, the year-over-year median sale prices (inflation-adjusted) of single family homes in Massachusetts fell over 10% in 2006.[101] Economist David Lereah formerly of the NAR said in August 2006 that "he expects home prices to come down 5% nationally, more in some markets, less in others."[20] Commenting in August 2005 on the perceived low risk of housing as an investment vehicle, Alan Greenspan said, "history has not dealt kindly with the aftermath of protracted periods of low risk premiums."[102]

Compounding the popular expectation that home prices do not fall, it is also widely believed that home values will yield average or better-than-average returns as investments. The investment motive for purchasing homes should not be conflated with the necessity of shelter that housing provides; an economic comparison of the relative costs of owning versus renting the equivalent utility of shelter can be made separately (see boxed text). Over the holding periods of decades, inflation-adjusted house prices have increased less than 1% per year.[9][11] Robert Shiller shows[9] that over long periods, inflation adjusted U.S. home prices increased 0.4% per year from 1890–2004, and 0.7% per year from 1940–2004. Shiller also showed comparable results for housing prices on a single street in Amsterdam (the site of the fabled tulip mania, and where the housing supply is notably limited) over a 350 year period. Such meager returns are dwarfed by investments in the stock and bond markets; although, these investments are not heavily leveraged by fair interest loans. If historic trends hold, it is reasonable to expect home prices to only slightly beat inflation over the long term. Furthermore, one way to assess the quality of any investment is to compute its price-to-earnings (P/E) ratio, which for houses can be defined as the price of the house divided by the potential annual rental income, minus expenses including property taxes, maintenance, insurance, and condominium fees. For many locations, this computation yields a P/E ratio of about 30–40, which is considered by economists to be high for both the housing and the stock markets;[9] historical price-to-rent ratios are 11–12.[91] For comparison, just before the dot-com crash the P/E ratio of the S&P 500 was 45, while in 2005–2007 around 17.[103] In a 2007 article comparing the cost and risks of renting to buying using a buy vs. rent calculator (http://www.nytimes.com/2007/04/10/business/2007_BUYRENT_GRAPHIC.html) , the *New York Times* concluded, "Homeownership, [realtors] argue, is a way to achieve the American dream, save on taxes and earn a solid investment return all at the same time. ... [I]t's now clear that people who chose renting over buying in the last two years made the right move. In much of the country ... recent home buyers have faced higher monthly costs than renters and have lost money on their investment in the meantime. It's almost as if they have thrown money away, an insult once reserved for renters."[104] A 2007 *Forbes* article titled "Don't Buy That House" invokes similar arguments and concludes that for now, "resist the pressure [to buy]. There may be no place like home, but there's no reason you can't rent it."[96]

Promotion in the media



NAR chief economist David Lereah's book[105] in February 2005.



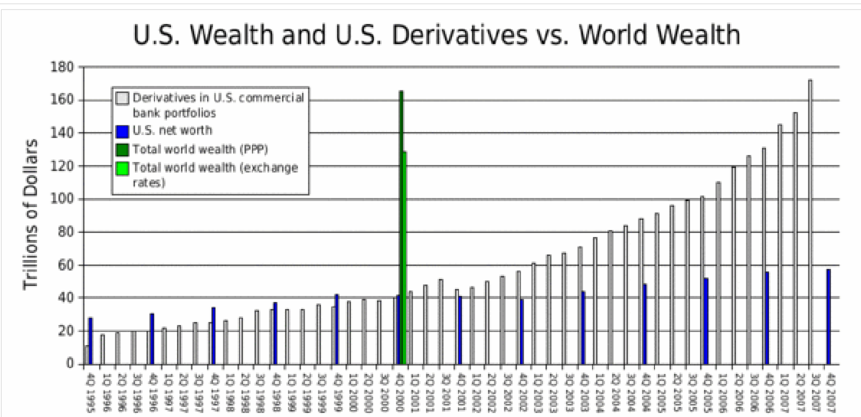
NAR chief economist David Lereah's book[106] in February 2006.

In late 2005 and into 2006, there were an abundance of television programs promoting real estate investment and flipping.[107][108] In addition to the numerous television shows, book stores in cities throughout the United States could be seen showing large displays of books touting real-estate investment, such as NAR chief economist David Lereah's book *Are You Missing the Real Estate Boom?*, subtitled *Why Home Values and Other Real Estate Investments Will Climb Through The End of The Decade - And How to Profit From Them*, published in February 2005.[105] One year later, Lereah retitled his book *Why the Real Estate Boom Will Not Bust - And How You Can Profit from It*.[106]

However, following Fed chairman Ben Bernanke's comments on the "downturn of the housing market" in August 2006,[109] Lereah said in an NBC interview that "we've had a boom marketplace: you've got to correct because booms cannot sustain itself forever [*sic*]."[110] Commenting on the phenomenon of shifting NAR accounts of the national housing market (see David Lereah's comments[110][111][112]), the Motley Fool reported, "There's nothing funnier or more satisfying ... than watching the National Association of Realtors (NAR) change its tune these days. ... the NAR is full of it and will spin the numbers any way it can to keep up the pleasant fiction that all is well."[100]

Upon leaving the NAR in May 2007, Lereah explained to Robert Siegel of National Public Radio that using the word "boom" in the title was actually his publisher's idea, and "a poor choice of titles".[113]

Speculative fever



Total US derivatives and total US wealth 1995–2007 compared to total world wealth in the year 2000

As median home prices began to rise dramatically in 2000–2001 following the fall in interest rates, speculative purchases of homes also increased.[114] *Fortune* magazine's article on housing speculation in 2005 said, "America was awash in a stark, raving frenzy that looked every bit as crazy as dot-com stocks."[7] In a 2006 interview in *BusinessWeek* magazine, Yale economist Robert Shiller said of the impact of speculators on long term valuations, "I worry about a big fall because prices today are being supported by a speculative fever,"[115] and former NAR chief economist David Lereah said in 2005 that "[t]here's a speculative element in home buying now."[111]

Speculation in some local markets has been greater than others, and any correction in valuations is expected to be strongly related to the percentage amount of speculative purchases.[112][116][5] In the same *BusinessWeek* interview, Angelo Mozilo, CEO of mortgage lender Countrywide Financial, said in March 2006, "in areas where you have had heavy speculation, you could have 30% [home price declines]... A year or a year and half from now, you will have seen a slow deterioration of home values and a substantial deterioration in those areas where there has been speculative excess."[115] The chief economist for the National Association of Home Builders, David Seiders, said that California, Las Vegas, Florida and the Washington, D.C., area "have the largest potential for a price slowdown" because the rising prices in those markets were fed by speculators who bought homes intending to "flip" or sell them for a quick profit.[117]

Dallas Fed president Richard Fisher said in 2006 that the Fed held its target rate at 1 percent "longer than it should have been" and unintentionally prompted speculation in the housing market.[118][119]

It should also be noted that various gurus of real estate investments such as Russ Whitney openly advocated the use of no money down property flipping, which led to the demise of many speculators who followed this strategy such as Casey Serin.[120][121]

Crash of the dot-com bubble

Several economists have argued that the stock market crash, especially in the dot-com and technology sectors, in 2000 and the subsequent 70% (or so) drop of the NASDAQ composite index resulted in many people taking their money out of the stock market and purchasing real estate, which many believed to be a more reliable investment.[11][12][122] Yale economist Robert Shiller argued further that "irrational exuberance" was displaced from the fallen stock market to housing: "Once stocks fell, real estate became the primary outlet for the speculative frenzy that the stock market had unleashed."[13]

Historically low interest rates

Another important consequence of the dot-com crash and the subsequent 2001–2002 recession was that the Federal Reserve cut short-term interest rates to historically low levels, from about 6.5% to just 1%. Former Federal Reserve Board Chairman Alan Greenspan admitted that the housing bubble was "fundamentally engendered by the decline in real long-term interest rates."[123] In United States, mortgage rates are typically set in relation to 10-year treasury bond yields, which, in turn, are affected by Federal Funds rates. The Federal Reserve acknowledges the connection between lower interest rates, higher home values, and the increased liquidity the higher home values bring to the overall economy.[124] A Federal Reserve report reads,

> Like other asset prices, house prices are influenced by interest rates, and in some countries, the housing market is a key channel of monetary policy transmission.[125]

For this reason some have criticized then Fed Chairman Alan Greenspan for "engineering" the housing bubble,[126][127][128][129][130][131] saying, e.g., "It was the Federal Reserve-engineered decline in rates that inflated the housing bubble."[12] Between 2000 and 2003, the interest rate on 30-year fixed-rate mortgages fell 2.5 percentage points (from 8% to all-time historical low of about 5.5%). The interest rate on one-year adjustable rate mortgages (1/1 ARMs) fell 3 percentage points (from about 7% to about 4%). Richard Fisher, president of the Dallas Fed, said in 2006 that the Fed's low interest-rate policies unintentionally prompted speculation in the housing market, and that the subsequent "substantial correction [is] inflicting real costs to millions of homeowners."[118][119]

A drop in mortgage interest rates reduces the cost of borrowing and should logically result in an increase in prices in a market where most people borrow money to purchase a home (for instance, in the United States), so that average payments remain constant. If one assumes that the housing market is efficient, the expected change in housing prices (relative to interest rates) can be computed mathematically. The calculation in the sidebox shows that a 1 percentage point change in interest rates would theoretically affect home prices by about 10% (given 2005 rates on fixed-rate mortgages). This represents a 10-to-1 multiplier between percentage point changes in interest rates and percentage change in home prices. For interest-only mortgages (at 2005 rates), this yields about a 16% change in principal for a 1% change in interest rates at current rates. Therefore, the 2% drop in long-term interest rates can account for about a 10 × 2% = 20% rise in home prices if every buyer is using a fixed-rate mortgage (FRM), or about 16 × 3% ≈ 50% if every buyer is using an adjustable rate mortgage (ARM) whose interest rates dropped 3%. Robert Shiller shows that the inflation adjusted U.S. home price increase has been about 45% during this period,[9] an increase in valuations that is approximately consistent with most buyers financing their purchases using ARMs. In areas of the United States believed to have a housing bubble, price increases have far exceeded the 50% that might be explained by the cost of borrowing using ARMs. For example, in San Diego area, average mortgage payments grew 50% between 2001 and 2004. When interest rates rise, a reasonable question is how much house prices will fall, and what effect this will have on those holding negative equity, as well as on the U.S. economy in general. The salient question is whether interest rates are a determining factor in specific markets where there is high sensitivity to housing affordability.

Between 2004 and 2006, the Fed raised interest rates 17 times, increasing them from 1% to 5.25%, before pausing.[132] The Fed paused raising interest rates because of the concern that an accelerating downturn in the housing market could undermine the overall economy, just as the crash of the dot-com bubble in 2000 contributed to the subsequent recession. However, New York University economist Nouriel Roubini asserted that "The Fed should have tightened earlier to avoid a festering of the housing bubble early on."[133]

There was a great debate as to whether or not the Fed would lower rates in late 2007. The majority of economists expected the Fed to maintain the Fed funds rate at 5.25 percent through 2008;[134] however, on September 18, it lowered the rate to 4.75 percent.[135]

Risky mortgage products and lax lending standards

The recent use of subprime mortgages, adjustable rate mortgages, interest-only mortgages, and stated income loans (a subset of "Alt-A" loans, where the borrower did

Differential relationship between interest rates and affordability.
An approximate formula can be obtained that provides the relationship between changes in interest rates and changes in home affordability. The computation proceeds by designating affordability (the monthly mortgage payment) constant, and differentiating the equation for monthly payments

$$\text{monthly payment} = \frac{r}{1-(1+r)^{-N}} Who \times \text{Principal}$$

with respect to the interest rate *r*, then solving for the change in Principal. Using the approximation $(1+r/K)^{NK} \approx e^{Nr}$ ($K \to \infty$, and e = 2.718... is the base of the natural logarithm) for continuously compounded interest, this results in the approximate equation

$$\frac{\Delta\mathrm{Principal}}{\mathrm{Principal}} \approx -\left(1 - \frac{Nre^{-Nr}}{1-e^{-Nr}}\right)\frac{\Delta r}{r}$$

(fixed-rate loans). For interest-only mortgages, the change in principal yielding the same monthly payment is

$$\frac{\Delta\mathrm{Principal}}{\mathrm{Principal}} \approx -\frac{\Delta r}{r}$$

(interest-only loans). This calculation shows that a 1 percentage point change in interest rates would theoretically affect home prices by about 10% (given 2005 rates) on fixed-rate mortgages, and about 16% for interest-only mortgages. Robert Shiller does compare interest rates and overall U.S. home prices over the period 1890–2004 and concludes that interest rates do not explain historic trends for the country.[9]

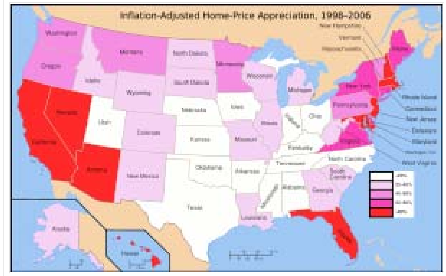
not have to provide documentation to substantiate the income stated on the application; these loans were also called "no doc" (no documentation) loans and, somewhat pejoratively, as "liar loans") to finance home purchases described above have raised concerns about the quality of these loans should interest rates rise again or the borrower is unable to pay the mortgage.[9][17][136][137] In many areas, particularly in those with most appreciation, non-standard loans went from almost unheard of to prevalent. For example, 80% of all mortgages initiated in San Diego region in 2004 were adjustable-rate, and 47% were interest only.

Some borrowers got around downpayment requirements by using seller-funded downpayment assistance programs (DPA), in which a seller gives money to a charitable organizations that then give the money to them. From 2000 through 2006, more than 650,000 buyers got their down payments through nonprofits.[138] According to a Government Accountability Office study, there are higher default and foreclosure rates for these mortgages. The study also showed that sellers inflated home prices to recoup their contributions to the nonprofits.[139]
On May 4, 2006 the IRS ruled that such plans are no longer eligible for non-profit status due to the circular nature of the cash flow, in which the seller pays the charity a "fee" after closing.[140]
On October 31, 2007 the Department of Housing and Urban Development adopted new regulations banning so-called "seller-funded" downpayment programs. Most must cease providing grants on FHA loans immediately; one can operate until March 31, 2008.[138]

Some believe that mortgage standards became lax because of a Moral hazard, where each link in the mortgage chain collected profits while believing it was passing on risk.[141]
Mortgage denial rates for conventional home purchase loans, reported under the Home Mortgage Disclosure Act, have dropped noticeably, from 29 percent in 1998, to 14 percent in 2002 and 2003.[33]

In March 2007, the United States' subprime mortgage industry collapsed due to higher-than-expected home foreclosure rates, with more than 25 subprime lenders declaring bankruptcy, announcing significant losses, or putting themselves up for sale.[142] *Harper's Magazine* warned of the danger of rising interest rates for recent homebuyers holding such mortgages, as well as the U.S. economy as a whole: "The problem [is] that prices are falling even as the buyers' total mortgage remains the same or even increases. ... Rising debt-service payments will further divert income from new consumer spending. Taken together, these factors will further shrink the “real” economy, drive down those already declining real wages, and push our debt-ridden economy into Japan-style stagnation or worse."[70] Factors that could contribute to rising rates are the U.S. national debt, inflationary pressure caused by such factors as increased fuel and housing costs, and changes in foreign investments in the U.S. economy. The Fed raised rates 17 times, increasing them from 1% to 5.25%, between 2004 and 2006.[132] *BusinessWeek* magazine called the option ARM "the riskiest and most complicated home loan product ever created" and warned that over one million borrowers took out $466 billion in option ARMs in 2004 through the second quarter of 2006, citing concerns that these financial products could hurt individual borrowers the most and "worsen the [housing] bust."[143] To address the problems arising from "liar loans", the Internal Revenue Service updated an income verification tool used by lenders to make confirmation of borrower's claimed income to be faster and easier.[136] In April 2007, financial problems similar to the subprime mortgages began to appear with Alt-A loans made to homeowners who were thought to be less risky; the delinquency rate for Alt-A mortgages rose in 2007.[144] The manager of the world's largest bond fund PIMCO, warned in June 2007 that the subprime mortgage crisis was not an isolated event and will eventually take a toll on the economy and whose ultimate impact will be on the impaired prices of homes.[145]

National bubble or local bubbles?



Inflation-adjusted housing prices in the United States by state, 1998–2006.

Home price appreciation has been non-uniform to such an extent that some economists, including former Fed Chairman Alan Greenspan, have argued that United States did not have a nationwide housing bubble per se, but rather a number of local bubbles.[146] However, in 2007 Greenspan admitted that there was a bubble in the US housing market, and that "all the froth bubbles add up to an aggregate bubble."[23] Despite greatly relaxed lending standards and low interest rates, many regions of the country have seen very little growth during the "bubble period". Out of 20 largest metropolitan areas tracked by S&P/Case-Shiller house price index, six (Dallas, Cleveland, Detroit, Denver, Atlanta, and Charlotte) have seen less than 10% price growth in inflation-adjusted terms in 2001–2006.[147]
Seven metropolitan areas (Tampa, Miami, San Diego, Los Angeles, Las Vegas, Phoenix, and Washington DC) have appreciated more than 80% in the same period of time.

Furthermore, housing bubble did not manifest itself in each one of these seven areas at the same time. San Diego and Los Angeles maintained consistently high appreciation rates since late 1990s. Las Vegas and Phoenix didn't develop a bubble until 2003 and 2004, respectively.

Somewhat paradoxically, as the housing bubble deflates,[148] some metropolitan areas (such as Denver and Atlanta) are experiencing high foreclosure rates, even though they didn't record much house appreciation in the first place, and, therefore, did not appear to be part of the national bubble. This was also true of some cities in the Rust Belt such as Detroit[149] and Cleveland[150] where weak local economies caused little appreciation early in the decade, but had declining values and increased foreclosures in 2007. California, Michigan, Ohio and Florida are currently states with the highest foreclosure rates.

Side effects

Unprecedented runup in house prices between 1997 and 2005 had a number of wide ranging effects on the economy of the United States.

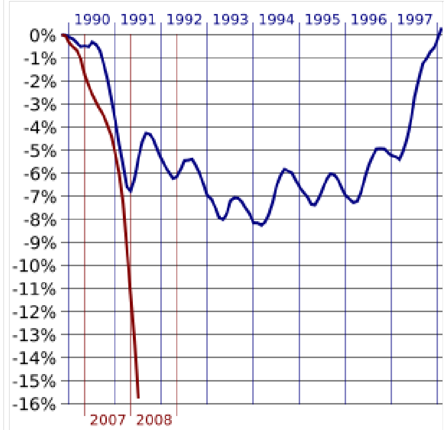
- One of the most direct effects was on construction of new houses. In 2005, 1,283,000 new single-family houses were sold, compared with an average of 609,000 per year during 1990–1995.[151] Largest home builders, such as D. R. Horton, Pulte, and Lennar, saw their largest share prices and revenues in 2004–2005. D. R. Horton's stock went from $3 in early 1997 to all-time high of $42.82 on July 20, 2005. Pulte Corp's revenues grew from $2.33 billion in 1996 to $14.69 billion in 2005.[152][153][154]
- Mortgage equity withdrawals
  - primarily home equity loans and cash-out refinancings - grew considerably since early 1990s. According to estimates by US Federal Reserve, in 2005, homeowners extracted $750 billion from equity of their homes (up from $106 billion in 1996), spending two thirds of it on personal consumption, home improvements, and credit card debt.[155]
- It is widely believed that increased economic activity caused by expanding housing bubble in 2001–2003 was partly responsible for prevention of full-scale recession in U.S. economy following the dot-com bust.[156]
- Rapidly growing house prices and increasing price gradients forced many residents to flee expensive centers of many metropolitan areas, resulting in explosive growth of exurbs in some regions. Population of Riverside County, California almost doubled from 1,170,413 in 1990 to 2,026,803 in 2006, due to its relative proximity to San Diego and Los Angeles. On the East Coast, Loudoun County, Virginia, near Washington, DC, saw its population triple between 1990 and 2006.

Real estate market correction of 2006–2007 resulted in reversal of these trends. As of August 2007, D.R.Horton's and Pulte Corp's shares were down to 1/3 of their respective peaks, as new residential home sales fall. Some cities and regions that experienced fastest growth during 2000–2005 began to show high foreclosure rates.[148]
Weakness in housing industry and loss of mortgage equity withdrawal driven consumption could lead to a recession, but as of mid-2007 this recession was not ascertained.[157] In March 2008, Thomson Financial
reported that the "Chicago Federal Reserve Bank's National Activity Index for February sent a signal that a recession [had] probably begun..."[158]

Housing market correction

Based on the historic trends in valuations of U.S. housing,[9][161] many economists and business

The Washington DC "bubble bench" made famous by the *The Washington Post*;[159] the 49 lockboxes hold keys to unsold units of a 200 unit condominium complex in Fairfax County, Virginia.



Comparison of the percentage change of the Case-Shiller Home Price Index for the housing correction beginning in 2005 (red) and the 1980s–1990s correction (blue), comparing monthly CSI values to the peak value seen just prior to the first declining month all the way through the downturn and the full recovery of home prices.

NAR chief economist David Lereah's Explanation of "What Happened" from the 2006 NAR Leadership Conference[160]

- Boom ended August 2005
- Mortgage rates rose almost one point
- Affordability conditions deteriorated
- Speculative investors pulled out
- Homebuyer confidence plunged
- Resort buyers went to sidelines
- Trade-up buyers to sidelines
- First-time buyers priced out of market

writers have predicted a market correction, ranging from a few percentage points, to 50% or more from peak values in some markets,[162][163][164][15][165] and, in spite of the fact that this cooling has not affected all areas of the U.S., some have warned that it could and that the correction would be "nasty" and "severe".[166][167] Chief economist Mark Zandi of the economic research firm Moody's Economy.com predicted a "crash" of double-digit depreciation in some U.S. cities by 2007–2009.[168][169][2]

In a paper presented at a Federal Reserve Board economic symposium in August 2007, Yale University economist Robert Shiller warned, “the examples we have of past cycles indicate that major declines in real home prices—even 50 percent declines in some places—are entirely possible going forward from today or from the not too distant future.”[46]

Bubble bursts

The booming housing market appears to have halted abruptly for many parts of the U.S. in late summer of 2005, and as of summer 2006, several markets are facing the issues of ballooning inventories, falling prices, and sharply reduced sales volumes. In August 2006, *Barron's* magazine warned, "a housing crisis approaches", and noted that the median price of new homes has dropped almost 3% since January 2006, that new-home inventories hit a record in April and remain near all-time highs, that existing-home inventories are 39% higher than they were just one year ago, and that sales are down more than 10%, and predicts that "the national median price of housing will probably fall by close to 30% in the next three years ... simple reversion to the mean."[15] *Fortune* magazine labelled many previously strong housing markets as "Dead Zones;"[16] other areas are classified as "Danger Zones" and "Safe Havens." *[[Fortune* magazine|Fortune]] *also dispelled "four myths about the future of home prices."[85] In Boston, year-over-year prices are dropping,[170] sales are falling, inventory is increasing, foreclosures are up,[17][18] and the correction in Massachusetts has been called a "hard landing".[171]* The previously booming[11] housing markets in Washington, D.C., San Diego, Phoenix, and other cities have stalled as well.[172][173] Searching the Arizona Regional Multiple Listing Service
(ARMLS) shows that in summer 2006, the for-sale housing inventory in Phoenix has grown to over 50,000 homes, of which nearly half are vacant (see graphic).[19] Several home builders have revised their forecasts sharply downward during summer 2006, e.g., D.R. Horton cut its yearly earnings forecast by one-third in July 2006,[174] the value of luxury home builder Toll Brothers' stock fell 50% between August 2005 and August 2006,[175] and the Dow Jones U.S. Home Construction Index was down over 40% as of mid-August 2006.[176] CEO Robert Toll of Toll Brothers explained, "builders that built speculative homes are trying to move them by offering large incentives and discounts; and some anxious buyers are canceling contracts for homes already being built."[177] Homebuilder Kara Homes, known for their construction of "McMansions", announced on September 13, 2006 the "two most profitable quarters in the history of our company", yet filed for bankruptcy protection less than one month later on 6 October.[178] Six months later on April 10, 2007, Kara Homes sold unfinished developments, causing prospective buyers from the previous year to lose deposits, some of whom put down more than $100,000.[179]

As the housing market began to soften in winter 2005 through summer 2006,[180][181] NAR chief economist David Lereah predicted a "soft landing" for the market.[182]
However, based on unprecedented rises in inventory and a sharply slowing market throughout 2006, Leslie Appleton-Young, the chief economist of the California Association of Realtors, said that she is not comfortable with the mild term "soft landing" to describe what is actually happening in California's real estate market.[183] The *Financial Times* warned of the impact on the U.S. economy of the "hard edge" in the "soft landing" scenario, saying "A slowdown in these red-hot markets is inevitable. It may be gentle, but it is impossible to rule out a collapse of sentiment and of prices... If housing wealth stops rising... the effect on the world's economy could be depressing indeed."[184] "It would be difficult to characterize the position of home builders as other than in a hard landing", said Robert Toll, CEO of Toll Brothers.[185] Angelo Mozilo, CEO of Countrywide Financial, said "I've never seen a soft-landing in 53 years, so we have a ways to go before this levels out. I have to prepare the company for the worst that can happen."[186] Following these reports, Lereah admitted that "he expects home prices to come down 5% nationally", and said that some cities in Florida and California could have "hard landings."[20] National home sales and prices both fell dramatically again in March 2007 according to NAR data, with sales down 13% to 482,000 from the peak of 554,000 in March 2006 and the national median price falling nearly 6% to $217,000 from the peak of $230,200 in July 2006 . The plunge in existing-home sales is the steepest since 1989.[21]
The new home market is also suffering. The biggest year over year drop in median home prices since 1970 occurred in April of 2007. Median prices for new homes fell 10.9 percent according to the Commerce Department.[187]

Based on slumping sales and prices in August 2006, economist Nouriel Roubini warned that the housing sector is in "free fall" and will derail the rest of the economy, causing a recession in 2007.[27] Joseph Stiglitz, winner of the Nobel Prize in economics in 2001, agreed, saying that the U.S. may enter a recession as house prices decline.[188]
The extent to which the economic slowdown, or possible recession, will last depends in large part on the resiliency of the U.S. consumer spending, which now makes up approximately 70% of the US$13.7 trillion economy. The evaporation of the wealth effect amid the current housing downturn could negatively affect the consumer confidence and provide further headwind for the U.S. economy and that of the rest of the world. The World Bank recently lowered the global economic growth rate due to a housing slowdown in the United States, but it does not believe that the U.S. housing malaise will further spread to the rest of the world. The Fed chairman Benjamin Bernanke said in October 2006 that there is currently a "substantial correction" going on in the housing market and that the decline of residential housing construction is one of the "major drags that is causing the economy to slow"; he predicted that the correcting market will decrease U.S. economic growth by about one percent in the second half of 2006 and remain a drag on expansion into 2007.[189] The White House Council of Economic Advisers recently lowered their outlook for U.S. economic growth in 2008 from 3.1 percent to 2.7 percent and forecast higher unemployment, reflecting turmoil in the credit markets and residential real-estate market. The Bush Administration economic advisers also revised their unemployment outlook and predict the unemployment rate could rise slightly above 5 percent, up from the current unemployment rate of 4.6 percent.[190]

Others speculate on the negative impact of the retirement of the Baby Boom generation and the relative cost to rent on the declining housing market.[191][192] In many parts of the United States, it is significantly cheaper to rent the same property than to purchase it; the national median mortgage payment is $1,687 per month, nearly twice the median rent payment of $868 per month.[98] However, the appreciation of home prices in many parts of the country has lured many renters to become homeowners. Yet the appreciation of home values far exceeded the income growth of many of these homebuyers, pushing them to leverage themselves beyond their means. They borrowed even more money in order to purchase homes that were far more expensive than their ability to meet their mortgage obligations. Many of these homebuyers took out adjustable-rate mortgages during the period of low interest rates to purchase homes of their dreams. Initially, they were able to meet their mortgage obligations due to their low "teaser" rates in the first few years. However, as the Federal Reserve Bank exercised monetary contraction policy in 2005, many homeowners were stunned when their adjustable-rate mortgages began to reset to much higher rates in mid-2007 and their monthly payments jumped far above their ability to meet the monthly mortgage payments. Some homeowners began to default on their mortgages in mid-2007 and the cracks in the U.S. housing foundation began to appear.

Subprime mortgage industry collapse

In March 2007, the United States' subprime mortgage industry collapsed due to higher-than-expected home foreclosure

Bank run on the U.K.'s Northern Rock Bank by customers queuing to withdraw savings in a panic related to the U.S. subprime crisis.

rates, with more than 25 subprime lenders declaring bankruptcy, announcing significant losses, or putting themselves up for sale.[142] The stock of the country's largest subprime lender, New Century Financial, plunged 84% amid Justice Department investigations, before ultimately filing for Chapter 11 bankruptcy on April 2, 2007 with liabilities exceeding $100 million.[193] The manager of the world's largest bond fund PIMCO, warned in June 2007 that the subprime mortgage crisis was not an isolated

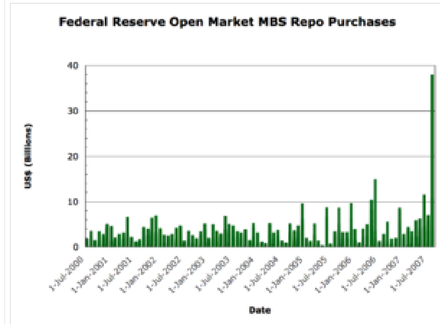
event and will eventually take a toll on the economy and whose ultimate impact will be on the impaired prices of homes.[145] Bill Gross, a "most reputable financial guru",[28] sarcastically and ominously criticized the credit ratings of the mortgage-based CDOs now facing collapse:

> AAA? You were wooed Mr. Moody's and Mr. Poor's, by the makeup, those six-inch hooker heels, and a "tramp stamp." Many of these good looking girls are not high-class assets worth 100 cents on the dollar... [T]he point is that there are hundreds of billions of dollars of this toxic waste... This problem [ultimately] resides in America's heartland, with millions and millions of overpriced homes".[28]

Business week has indicated financial analysts predicting that the subprime mortgage market meltdown would result in earnings reductions for large Wall Street investment banks trading in mortgage-backed securities, especially Bear Stearns, Lehman Brothers, Goldman Sachs, Merrill Lynch, and Morgan Stanley.[142] The solvency of two troubled hedge funds managed by Bear Stearns was imperiled in June 2007 after Merrill Lynch sold off assets seized from the funds and three other banks closed out their positions with them. The Bear Stearns funds once had over $20 billion of assets, but lost billions of dollars on securities backed by subprime mortgages.[194] H&R Block
reported that it made a quarterly loss of $677 million on discontinued operations, which included subprime lender Option One (http://www.oomc.com/) , as well as writedowns, loss provisions on mortgage loans and the lower prices available for mortgages in the secondary market for mortgages. The unit's net asset value fell 21% to $1.1 billion as of April 30, 2007.[195]
The head of the mortgage industry consulting firm Wakefield Co. warned, "This is going to be a meltdown of unparalleled proportions. Billions will be lost." Bear Stearns
pledged up to US$3.2 billion in loans on June 22, 2007 to bail out one of its hedge funds that was collapsing because of bad bets on subprime mortgages.[196] [[Peter Schiff]], president of Euro Pacific Capital, argued that if the bonds in the Bear Stearns funds were auctioned on the open market, much weaker values would be plainly revealed. Schiff added, "This would force other hedge funds to similarly mark down the value of their holdings. Is it any wonder that Wall street is pulling out the stops to avoid such a catastrophe?... Their true weakness will finally reveal the abyss into which the housing market is about to plummet."[197] The *New York Times*
report connects this hedge fund crisis with lax lending standards: "The crisis this week from the near collapse of two hedge funds managed by Bear Stearns stems directly from the slumping housing market and the fallout from loose lending practices that showered money on people with weak, or subprime, credit, leaving many of them struggling to stay in their homes."[196]

On 9 August 2007, BNP Paribas announced that it could not fairly value the underlying assets in three funds as a result of exposure to U.S. subprime mortgage lending markets.[198] Faced with potentially massive (though unquantifiable) exposure, the European Central Bank (ECB) immediately stepped in to ease market worries by opening lines of €96.8 billion (US$130 billion) in low-interest credit.[199] One day after the financial panic about a credit crunch swept through Europe, U.S. Federal Reserve Bank conducted an "open market operation" to inject US$38 billion in temporary reserves into the system to help overcome the ill effects of a spreading credit crunch, on top of a similar move the day before.[200] In order to further ease the credit crunch in the U.S. credit market, the chairman of the Federal Reserve Bank Ben Bernanke decided to lower the discount window rate, which is the lending rate between banks and the Federal Reserve Bank, by 50 basis points to 5.75% from 6.25% at 8:15 a.m. on August 17, 2007. The Federal Reserve Bank stated that the recent turmoil in the U.S. financial markets raised the risk of an economic downturn.

In the wake of the mortgage industry meltdown, Senator Chris Dodd, Chairman of the Banking Committee



Federal Reserve Open Market Purchases of Repo Mortgage Backed Securities (MBS), 2000–2007. After the Federal Reserve Board's low-interest rate policies first contributed to inflating the bubble between 2001–2005,[12] then higher rates and sharply increased foreclosures caused a crisis in the mortgage and credit markets, the Fed purchased an unprecedented US$38 billion dollars of mortgage-backed securities on 10 August 2007 in an effort to inject money and to calm the markets falling in response to concerns about this crisis.[200] Source: New York Federal Reserve (http://www.newyorkfed.org/markets/omo/dmm/historical/tomo .

held hearings in March 2007 and asked executives from the top five subprime mortgage companies to testify and explain their lending practices; Dodd said, "predatory lending practices" endangered the home ownership for millions of people.[8] Moreover, Democratic senators such as Senator Charles Schumer of New York are already proposing a federal government bailout of subprime borrowers, like the one use in the Savings and Loan crisis, in order to save homeowners from losing their residences. Opponents of such proposal assert that government bailout of subprime borrowers is not in the best interests of the U.S. economy because it will simply set a bad precedent, create a moral hazard, and worsen the speculation problem in the housing market. As Dodd proposed a housing bailout to the Senate floor in June 2008 that would assist troubled subprime mortgage lenders such as Countrywide Bank, Dodd admitted that he received special treatment, perks, and campaign donations from Countrywide, who regarded Dodd as a "special" customer and a "Friend of Angelo." Dodd received a $75,000 reduction in mortgage payments from Countrywide at allegedly below-market rates on his Washington, D.C. and Connecticut homes.[66][67] The Chairman of the Senate Finance Committee Kent Conrad and the head of head of Fannie Mae Jim Johnson also received mortgages on favorable terms due to their association with Countrywide CEO Angelo R. Mozilo.[66]

Lou Ranieri of Salomon Brothers, inventor of the mortgage-backed securities market in the 1970s, warned of the future impact of mortgage defaults: "This is the leading edge of the storm. … If you think this is bad, imagine what it's going to be like in the middle of the crisis." In his opinion, more than $100 billion of home loans are likely to default when the problems in the subprime industry appear in the prime mortgage markets.[201] Former Federal Reserve Chairman V praised the rise of the subprime mortgage industry and the tools which it uses to assess credit-worthiness in an April 2005 speech.[202] Because of these remarks, along with his encouragement for the use of adjustable-rate mortgages, Greenspan has been criticized for his role in the rise of the housing bubble and the subsequent problems in the mortgage industry.[203][204] Greenspan later admitted about the subprime mortgage mess that, "I really didn't get it until very late in 2005 and 2006."[24]

On September 13, 2007, the British bank Northern Rock applied to the Bank of England for emergency funds caused by liquidity problems related to the subprime crisis.[47] This precipitated a bank run
at Northern Rock branches across the UK by concerned customers who withdrew "an estimated £2bn withdrawn in just three days".[205]

Alt-A mortgage problems

Subprime and Alt-A loans (including "stated income" loans, which are loans made to home buyers without the verification of their incomes; as home buyers tend to overstate their incomes in order to get the loan amounts they desire to purchase their dream homes, the term "liar's loans" is often used to describe them) account for about 21 percent of loans outstanding and 39 percent of mortgages made in 2006.[144] In April 2007, financial problems similar to the subprime mortgages began to appear with Alt-A loans made to homeowners who were thought to be less risky.[144] American Home Mortgage said that it would earn less and pay out a smaller dividend to its shareholders because it was being asked to buy back and write down the value of Alt-A loans made to borrowers with decent credit; causing company stocks to tumble 15.2 percent. American Home Mortgage filed for bankruptcy in August 2007.[206] The delinquency rate for Alt-A mortgages has been rising in 2007.[144] In June 2007, Standard & Poor's warned that U.S. homeowners with good credit are increasingly falling behind on mortgage payments, an indication that lenders have been offering higher risk loans outside the subprime market; they said that rising late payments and defaults on Alt-A mortgages made in 2006 are "disconcerting" and delinquent borrowers appear to be "finding it increasingly difficult to refinance" or catch up on their payments.[207]
Late payments of at least 90 days and defaults on 2006 Alt-A mortgages have increased to 4.21 percent, up from 1.59 percent for 2005 mortgages and 0.81 percent for 2004, indicating that "subprime carnage is now spreading to near prime mortgages."[28]

Foreclosure rates increase

House in Salinas, California under foreclosure, following the burst of the U.S. real estate bubble.

The 30-year mortgage rates increased by more than a half a percentage point to 6.74 percent during May–June 2007, affecting borrowers with the best credit just as a crackdown in subprime lending standards limits the pool of qualified buyers. The national median home price is poised for its first annual decline since the Great Depression, and the NAR reported that supply of unsold homes is at a record 4.2 million. Goldman Sachs and Bear Stearns, respectively the world's largest securities firm and largest underwriter of mortgage-backed securities in 2006, said in June 2007 that rising foreclosures reduced their earnings and the loss of billions from bad investments in the subprime market imperiled the solvency of several hedge funds. Furthermore, a number of big commercial banks such as Citibank and investment banks such as Merrill Lynch have announced significant write-offs against 3rd and 4th quarter 2007 earnings. As a

result, Citigroup's Board of Directors ousted its CEO Charles Prince and replaced him with Vikram Pandit, a former Morgan Stanley executive and hedge-fund manager, and Merrill Lynch's Board of Directors replaced its CEO Stanley O'Neal with John Thain, an alumni of Goldman Sachs and former CEO of NYSE Euronext. Mark Kiesel, executive vice president of a California-based Pacific Investment Management Co. said,

> It's a blood bath. ... We're talking about a two- to three-year downturn that will take a whol e host of characters with it, from job creation to consumer confidence. Eventually it will take the stock market and corporate profit.[208]

Government bailouts

Many in the U.S. Congress and Administration are proposing government bailouts of the mortgage and credit crisis, similar to the Savings and Loan crisis of the 1980s. Critics of such proposals quickly rebuffed the idea of government bailouts and calling such bailouts irresponsible. They further argued that bailouts would only promote imprudence in the future.

Following the collapse of the subprime mortgage industry in March 2007, Democratic Senator Charles Schumer of New York proposed a federal government bailout of subprime borrowers in order to save homeowners from losing their residences (or to save big banks from losing billions of dollars with taxpayers' money).[8] He was a supporter of Savings and Loan bailout in 1989.[209] Others are quick to point out that such a "bailout" would primarily benefit lenders and Wall Street bankers, who make large campaign contributions to congressmen;[210] Schumer's top nine campaign contributors are all financial institutions who have contributed over $2.5 million to the senator.[211] Schumer also proposed that the OFHEO raise Fannie Mae and Freddie Mac's conforming loan ("affordable") limits from $417,000 to $625,000, thereby allowing these GSEs to back mortgages on homes prices up to $780,000 with a 20% down payment.[212]

On April 18, 2006 home loan giant Freddie Mac has agreed to pay a record $3.8 million fine to settle allegations it made illegal campaign contributions.[213]

Concerns about the impact of the collapsing housing and credit markets on the larger U.S. economy caused President Bush and Fed Chairman Ben Bernanke to announce a limited bailout of the U.S. housing market for homeowners unable to pay their mortgage debts on August 31, 2007.[29] Mr. Bush said that his administration wished to alleviate the subprime mortgage crisis by "helping people who have good credit but who have not made all of their payments on time because of rising mortgage payments" with FHA-Secure.[214] However, homeowners with subprime loans have poor credit by definition; therefore, the immediate intent and scope of Bush's announced plan is not entirely clear.[214] President Bush's largest campaign contributor was Roland E. Arnall, the former CEO of the largest subprime lender in the U.S., Ameriquest, which has since gone out of business;[42] Bush nominated Arnall as the U.S. Ambassador to the Netherlands.[215]
On December 6, 2007, Bush announced a plan to voluntarily and temporarily freeze the introductory mortgage rates (so-called "teaser rate") of a limited number of mortgage debtors holding ARMs
for five years, declaring "I have a message for every homeowner worried about rising mortgage payments: The best you can do for your family is to call 1-800-995-HOPE".[216]
Government officials denied that this proposal is a bailout and acknowledged that it is not a panacea to cure the housing ailment. Treasury Secretary Henry Paulson
admitted that there is no easy solutions to the housing problem and this plan provides more a temporary relief to homeowners facing mortgage-rate resets than a long-term solution to stabilize the housing market. However, some experts criticized this plan as "a Band-Aid when the patient needs major surgery",[57] a "teaser-freezer",[58] and a "bail-out"[59] in which "the liars have won."[60]

Whether the bursting of the U.S. housing bubble will become a partisan issue in the 2008 presidential election is uncertain. During a live interview on CNBC with Maria Bartiromo, New York Senator and 2008 Democratic Presidential Candidate Hillary Rodham Clinton suggested the government set up a $5 billion fund to assist homeowners on the brink of losing their homes.[217] Moreover, she argued that nationwide foreclosures would devastate communities and invite crimes into these neighborhoods. However, skeptics of such schemes questioned whether the $5 billion fund would be sufficient to help 1.4 million homeowners who are expected to lose their homes in 2008 and the first-half of 2009 once their "teaser" mortgage rates are reset to variable market rates which could reach between 11 and 13 percent. On Jan 11, 2008, Democratic presidential contender Hillary Clinton proposed a $70 billion emergency spending package to help victims of the U.S. housing crisis.[218] A potential conflict of interest might arise because Senator Hillary Clinton has been the recipient of major contributions from the mortgage banking industry[219] and her strategist Mark Penn has been linked to Countrywide Mortgage, one of the major subprime lenders.[220]

Some economists say a bail out will create a moral hazard
that encourage future risky lending and borrowing by signaling that in extreme circumstances, the government will bail out bad lenders and borrowers[221] They further argue that government bailouts will only encourage more speculative activities in markets other than housing. Such bailouts will prolong the inevitable consequences of the housing crisis and exacerbate other financial crisis in the future. They also asserted the taxpayers-funded bailout would merely assist real-estate speculators, irresponsible homebuyers, and mortgage fraudsters.

A September 2007 national poll by NBC News and the Wall Street Journal found widespread opposition to a bailout of subprime borrowers facing foreclosure, with 59% of respondents opposing a federal role in preventing foreclosures.[222] Most respondents argued that a government interference in private transactions between homebuyers and lenders would set a bad precedent. Some of them wondered whether the government could compel credit-card companies to freeze the introductory rates of zero percent initially offered to credit-card debtors when debtors got into trouble paying their credit-card bills. Economic experts opined that only market-based solutions would eventually solve the current housing problem. Any non-market-based solutions will only put artificial floor in housing prices across the nation. According to former Fed Chairman Alan Greenspan, the

credit crunch in the financial market would not end until the inventory of homes on the market is liquidated and declines in residential real-estate prices played themselves out.[223]
In other words, supply of and demand for homes must first come to equilibrium before any recovery in U.S. housing market and, after enjoying the housing boom from 2002 to 2007, homeowners must sit through this subsequent housing bust patiently. As former Fed Chairman Alan Greenspan warned before he completed his tenure at the Federal Reserve Bank:

> Any onset of increased investor caution elevates risk premiums and, as a consequence, lowers a sset values and promotes the liquidation of the debt that supported higher asset prices. This is the reason that history has not dealt kindly with the a ftermath of protracted periods of low risk premiums.[224]

Translated into plain English, risk-averse investors would demand higher yields on their investments, thus driving down asset prices especially highly leveraged assets such as real-estate. Therefore, homeowners must deleverage themselves by putting more equities into their homes in order to keep their homes and future homebuyers may have to deposit significant amounts of down-payment in order to get mortgage loans. The protracted period of Americans buying homes with zero down-payment and getting mortgage loans with no or little documentations has finally come to an abrupt end.

In June 2008 Conde Nast Portfolio
reported that numerous Washington, DC politicians over recent years had received mortgage financing at noncompetitive rates from Countrywide Financial because the corporation considered for the officeholders under a program called "FOA's"—"Friends of Angelo."[66] The politicians extended such favorable financing included the chairman of the Senate Banking Committee, Democrat Christopher Dodd, and the chairman of the Senate Budget Committee, Democrat Kent Conrad. The article also noted Countrywide's political action committee had made large donations to Dodd's campaign.[66] Dodd has received approximately $70,000 in campaign contributions from Bank of America, who is buying Countrywide, in the last year-and-a-half before the Countrywide Financial loan scandal broke. [225]
Democrat Senator Dodd proposed that the federal government buy up to $400 Billion in defaulted mortgages.[226] It was reported that Jim Johnson, former CEO of Fannie Mae and an adviser to Sen. Barack Obama, had received loans under the "Friends of Angelo."[68][66]Only Senators Barack Obama and Hillary Clinton have received more Bank of America money than Senator Dodd. [225]

See also

- Savings and Loan crisis
- Resolution Trust Corporation
- 2007 Subprime mortgage financial crisis
- Subprime lending
- Mortgage loan
- Real estate bubble
- Economic crisis of 2008
- List of entities involved in 2007 finance crises
- **The world housing bubble**
  - British property bubble
  - Chinese property bubble
  - Indian property bubble
  - Irish property bubble
  - Japanese asset price bubble
  - New Zealand property bubble
  - Romanian property bubble
  - Russian property bubble
  - Spanish property bubble
- Economic bubble
- dot-com bubble
- Real estate pricing
- Real estate appraisal
- Real estate economics

- Real estate trends
- Creative Real Estate Investing
- Deed in lieu of foreclosure
- Foreclosure consultant
- Barbara Corcoran

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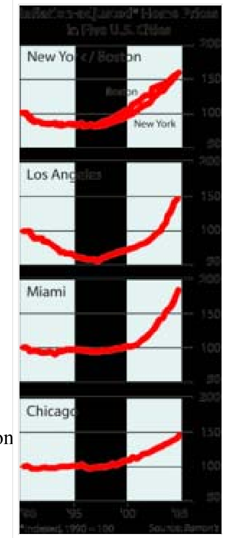

Plot of inflation-adjusted home price appreciation in several U.S. cities, 1990–2005.

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***Fortune* magazine Housing Bubble "Dead Zones"**

"Dead Zones"	"Danger Zones"	"Safe Havens"
Boston	Chicago	Cleveland
Las Vegas	Los Angeles	Columbus
Miami	New York	Dallas
Washington D.C. / Northern Virginia	San Francisco / Oakland	Houston
Phoenix	Seattle	Kansas City
Sacramento		Omaha
San Diego		Pittsburgh

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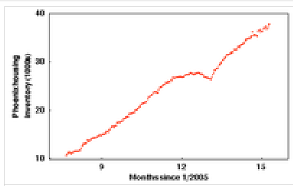

Inventory of houses for sale in Phoenix, AZ (http://www.arizonalisting.info) from July 2005 through March 2006. As of March 10, 2006, well over 14,000 (nearly half) of these for-sale homes are vacant. (Source: Arizona Regional Multiple Listing Service.)

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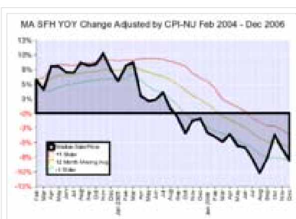

Massachusetts Single Family Home Year-Over-Year Inflation Adjusted Price Changes, 2004–2006, from publicly available U.S. government and Massachusetts Association of Realtors data. Note that: (1) the inflation-adjusted year-over-year price is decreasing; (2) the rate of price decrease is accelerating; (3) the overall shape of this curve is consistent with a market that peaked in summer 2005, with a critical point at mid-August, and is falling. (Source: bostonbubble.com (http://www.bostonbubble.com/forums/v .)

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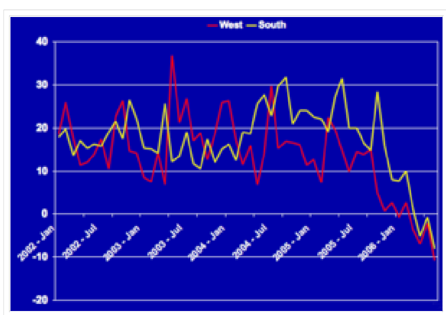

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