

SPECIAL REPORT

Subprime mortgage crisis

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One version of chaos theory opines that a butterfly flapping its wings in Beijing could produce a change in atmospheric pressure that in turn could cause a tornado in Texas. This “butterfly effect” graphically demonstrates the theory whereby a small change in one area can cause a chain of events that leads to a major effect somewhere else. For the last several months the evening news have been saturated with the subprime mortgage crisis, it is difficult to understand how it happened and the way is affecting the United States, Canada and the rest of the world. Losses derived for direct investments or sophisticated securitized instruments led to downturns in many housing markets around the world, followed by a general tightening of credit and turmoil in international financial markets.

Introduction

The subprime mortgage crisis is an ongoing economic problem manifesting itself through liquidity issues in the global banking system owing to foreclosures which accelerated in the United States in late 2006 and triggered a global financial crisis through 2007 and 2008. The crisis began with the bursting of the US housing bubble^{1 2} and high default rates on “subprime” and other adjustable rate mortgages (ARM) made to higher-risk borrowers with lower income or lesser credit history than “prime” borrowers. Loan incentives and a long-term trend of rising housing prices encouraged borrowers to assume mortgages, believing they would be able to refinance at more favourable terms later. However, once housing prices started to drop moderately in 2006–2007 in many parts of the U.S., refinancing became more difficult. Defaults and foreclosure activity increased dramatically as ARM interest rates reset higher. During 2007, nearly 1.3 million U.S. housing properties were subject to foreclosure activity, up 79% from 2006.³

The mortgage lenders that retained credit risk (the risk of payment default) were the first to be affected, as borrowers became unable or unwilling to make payments. Major banks and other financial institutions around the world have reported losses of approximately U.S. \$435 billion as of July 17, 2008^{4 5}. Owing to a form of financial engineering called securitization, many mortgage lenders had passed the rights to the mortgage payments and related credit/default risk to third-party investors via mortgage-backed securities (MBS) and collateralized debt obligations (CDO). Corporate, individual and institutional investors holding MBS or CDO faced significant losses, as the value of the underlying mortgage assets declined. Stock markets in many countries declined significantly.

The widespread dispersion of credit risk and the unclear effect on financial institutions caused lenders to reduce lending activity or to make loans at higher interest rates. Similarly, the ability of corporations to obtain funds through the issuance of commercial paper was affected. This aspect of the crisis is consistent with a credit crunch. The liquidity concerns drove central banks around the world to take action to provide

funds to member banks to encourage the lending of funds to worthy borrowers and to re-invigorate the commercial paper markets.

The subprime crisis also places downward pressure on economic growth, because fewer or more expensive loans decrease investment by businesses and consumer spending, which drive the economy. A separate but related dynamic is the downturn in the housing market, where a surplus inventory of homes has resulted in a significant decline in new home construction and housing prices in many areas. This also places downward pressure on growth.⁶ With interest rates on a large number of subprime and other ARM due to adjust upward during the 2008 period, U.S. legislators, the U.S. Treasury Department, and financial institutions are taking action. A systematic program to limit or defer interest rate adjustments was implemented to reduce the effect. In addition, lenders and borrowers facing defaults have been encouraged to cooperate to enable borrowers to stay in their homes. Banks have sought and received over \$250 billion in additional funds from investors to offset losses.⁷ The risks to the broader economy created by the financial market crisis and housing market downturn were primary factors in several decisions by the U.S. Federal reserve to cut interest rates and the economic stimulus package passed by Congress and signed by President George W. Bush on February 13, 2008.^{8 9 10} Both actions are designed to stimulate economic growth and inspire confidence in the financial markets.

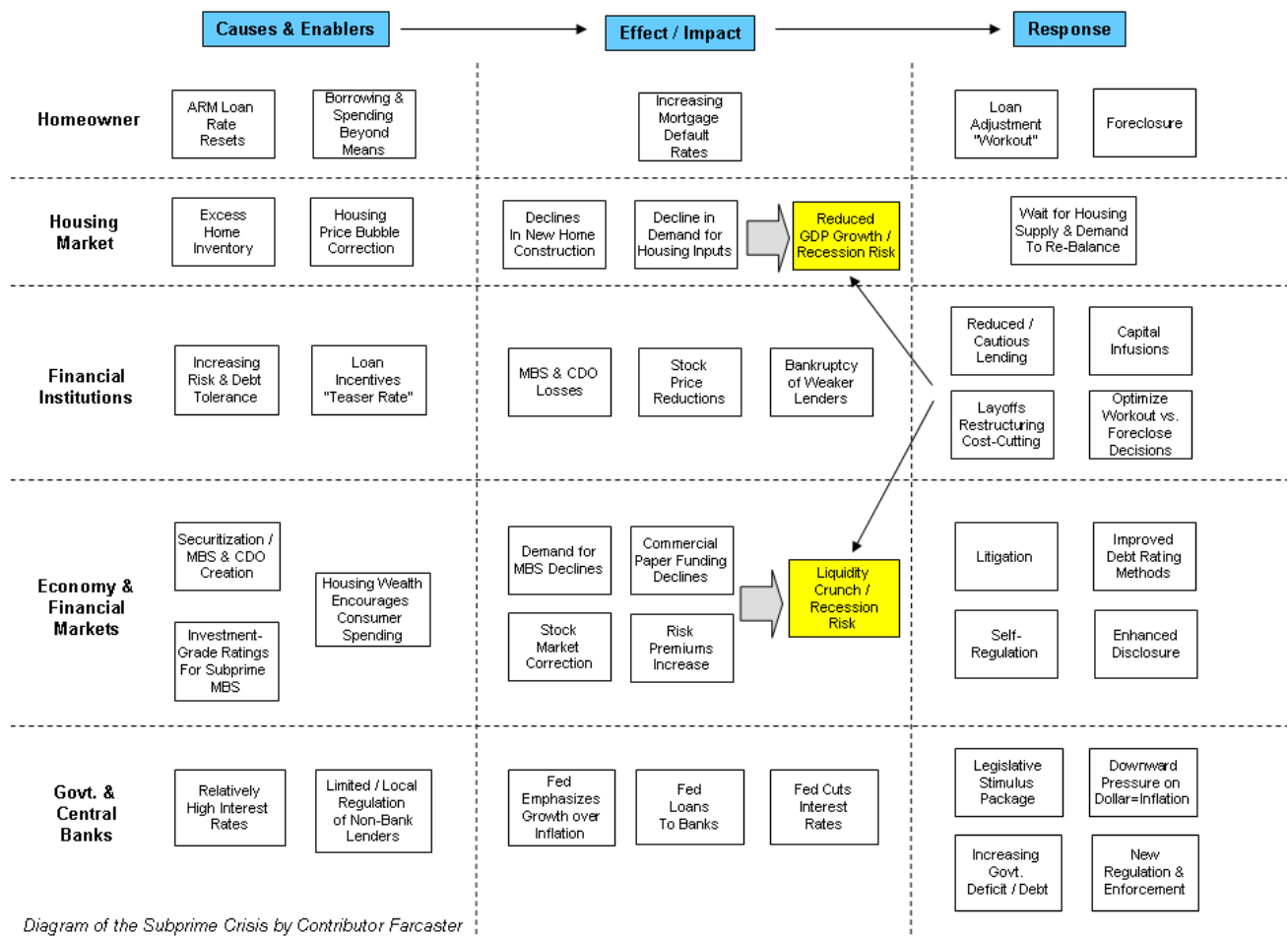


Diagram of the Subprime Crisis by Contributor Farcaster

Figure 1 - Diagram of the Subprime Crisis

Background information

The term subprime lending refers to the practice of making loans to borrowers who do not qualify for market interest rates owing to various risk factors, such as income level, size of the down payment made, credit history, and employment status. The value of U.S. subprime mortgages was estimated at \$1.3 trillion as of March 2007,¹¹ with over 7.5 million first-lien subprime mortgages outstanding.¹² Approximately 16% of subprime loans with adjustable rate mortgages (ARM) were 90-days delinquent or in foreclosure proceedings as of October 2007, roughly triple the rate of 2005.¹³ By January 2008, the delinquency rate had risen to 21%¹⁴ and by May 2008 it was 25%.¹⁵

Subprime ARM's only represent 6.8% of the loans outstanding in the US, yet they represent 43.0% of the foreclosures started during the third quarter of 2007.¹⁶ During 2007, nearly 1.3 million properties were subject to 2.2 million foreclosure filings, up 79% and 75% respectively versus 2006. Foreclosure filings including default notices, auction sale notices and bank repossessions can include multiple notices on the same property.¹⁷ More homeowners continue to receive foreclosure notices, with one in every 519 households receiving a foreclosure filing in April, 2008.¹⁸

The estimated value of subprime adjustable-rate mortgages (ARM) resetting at higher interest rates is U.S. \$400 billion for 2007 and \$500 billion for 2008. Reset activity is expected to increase to a monthly peak in March 2008 of nearly \$100 billion, before declining.¹⁹ An average of 450,000 subprime ARM's are scheduled to undergo their first rate increase each quarter in 2008.²⁰

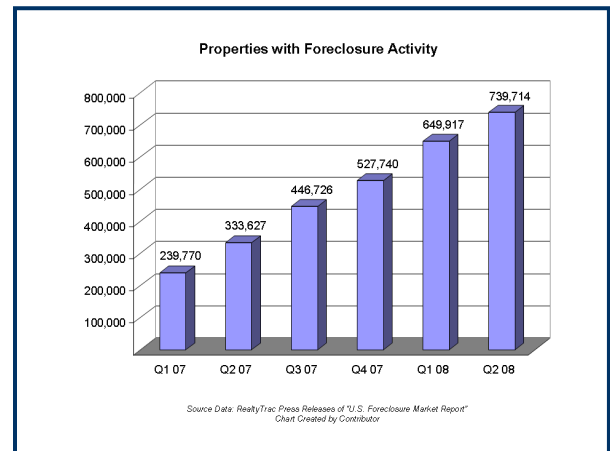


Figure 2 Number of U.S. Household Properties Subject to Foreclosure Actions by Quarter

Understanding the causes and risks of the subprime crisis

The reasons for this crisis are varied and complex.²¹ Understanding and managing the ripple effect through the world-wide economy poses a critical challenge for governments, businesses, and investors. The crisis can be attributed to a number of factors, such as the inability of homeowners to make their mortgage payments; poor judgment by the borrower and/or the lender; and mortgage incentives such as "teaser" interest rates that later rise significantly. Further, declining home prices have made refinancing more difficult. As a result of innovations in securitization, risks related to the inability of homeowners to meet mortgage payments have been distributed broadly, with a series of consequential impacts. There are four primary categories of risk involved:

- **Credit risk:** Traditionally, the risk of default (called credit risk) would be assumed by the bank originating the loan. However, due to innovations in securitization, credit risk is frequently transferred to third-party investors. The rights to mortgage payments have been repackaged into a variety of complex investment vehicles, generally categorized as mortgage-backed securities (MBS) or collateralized debt obligations (CDO). A CDO, essentially, is a repacking of existing debt, and in recent years MBS collateral has made up a large proportion of issuance. In exchange for purchasing MBS or CDO and assuming credit risk, third-party investors receive a claim on the mortgage assets and related cash flows, which become collateral in the event of default.
- **Asset price risk:** MBS and CDO asset valuation is complex and related “fair value” or “mark to market” accounting is subject to wide interpretation. The valuation is derived from both the collectability of subprime mortgage payments and the existence of a viable market into which these assets can be sold, which are interrelated. Rising mortgage delinquency rates have reduced demand for such assets. Banks and institutional investors have recognized substantial losses as they revalue their MBS downward. Several companies that borrowed money using MBS or CDO assets as collateral have faced margin calls, as lenders executed their contractual rights to get their money back. There is some debate regarding whether fair value accounting should be suspended or modified temporarily, as large write-downs of difficult to value MBS and CDO assets may have exacerbated the crisis.²²
- **Liquidity risk:** Many companies rely on access to short-term funding markets for cash to operate (i.e., liquidity), such as the commercial paper and repurchase markets. Companies and structured investment vehicles (SIV) often obtain short-term loans by issuing commercial paper, pledging mortgage assets or CDO as collateral. Investors provide cash in exchange for the commercial paper, receiving money-market interest rates. However, because of concerns regarding the value of the mortgage asset collateral linked to subprime and Alt-A loans, the ability of many companies to issue such paper has been significantly affected.²³ The amount of commercial paper issued as of October 18, 2007 dropped by 25%, to \$888 billion, from the August 8 level. In addition, the interest rate charged by investors to provide loans for commercial paper has increased substantially above historical levels.²⁴
- **Counterparty risk:** Major investment banks and other financial institutions have taken significant positions in credit derivative transactions, some of which serve as a form of credit default insurance. Due to the effects of the risks above, the financial health of investment banks has declined, potentially increasing the risk to their counterparties and creating further uncertainty in financial markets. The recent demise and bailout of Bear-Stearns was due in-part to its role in these derivatives.²⁵

Understanding the effect on corporations and investors

Average investors and corporations face a variety of risks owing to the inability of mortgage holders to pay. These vary by legal entity. Some general exposures by entity type include:

- **Bank corporations:** The earnings reported by major banks are adversely affected by defaults on mortgages they issue and retain. Companies value their mortgage assets (receivables) based on estimates of collections from homeowners. Companies record expenses in the current period to adjust this valuation, increasing their bad debt reserves and reducing earnings. Rapid or unexpected changes in mortgage asset valuation can lead to volatility in earnings and stock prices. The ability of lenders to predict future collections is a complex task subject to a multitude of variables.²⁶ Additionally, a bank's mortgage losses may cause it to reduce lending or seek additional funds from the capital markets, if necessary to maintain compliance with capital reserve regulatory requirements.
- **Mortgage lenders and Real Estate Investment Trusts:** These entities face similar risks to banks. In addition, they have business models with significant reliance on the ability to regularly secure new financing through CDO or commercial paper issuance secured by mortgages. Investors have become reluctant to fund such investments and are demanding higher interest rates. Such lenders are at increased risk of significant reductions in book value owing to asset sales at unfavourable prices and several have filed bankruptcy.²⁷
- **Special purpose entities (SPE):** Like corporations, SPE are required to revalue their mortgage assets based on estimates of collection of mortgage payments. If this valuation falls below a certain level, or if cash flow falls below contractual levels, investors may have immediate rights to the mortgage asset collateral. This can also cause the rapid sale of assets at unfavourable prices. Other SPE called structured investment vehicles (SIV) issue commercial paper and use the proceeds to purchase securitized assets such as CDO. These entities have been affected by mortgage asset devaluation. Several major SIV are associated with large banks.²⁸
- **Investors:** Stocks or bonds of the entities above are affected by the lower earnings and uncertainty regarding the valuation of mortgage assets and related payment collection. Many investors and corporations purchased MBS or CDO as investments and incurred related losses.

Causes of the crisis

The housing downturn

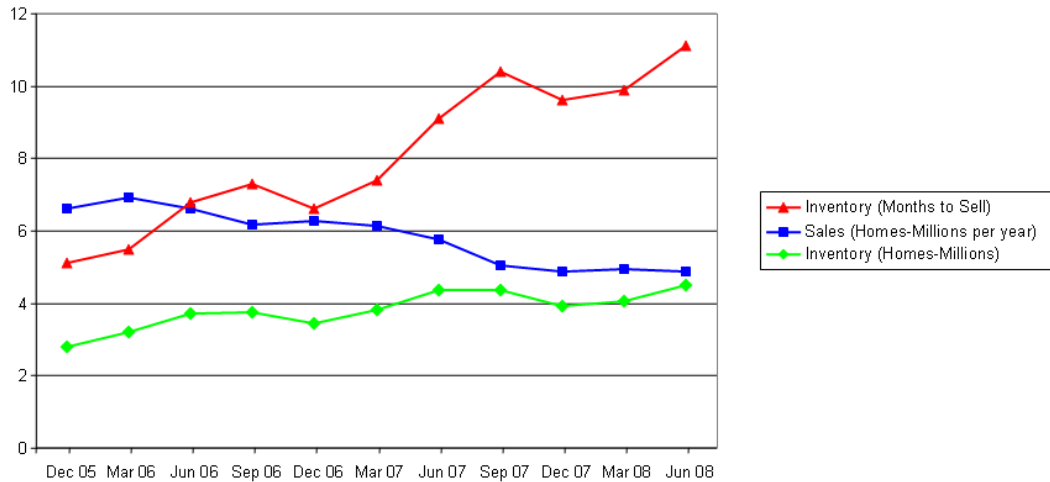
Subprime borrowing was a major contributor to an increase in home ownership rates and the demand for housing. The overall U.S. homeownership rate increased from 64 percent in 1994 (about where it was since 1980) to a peak in 2004 with an all time high of 69.2 percent.²⁹

This demand helped fuel housing price increases and consumer spending. Between 1997 and 2006, American home prices increased by 124%.³⁰ Some homeowners used the increased property value experienced in the housing bubble to refinance their homes with lower interest rates and take out second mortgages against the added value to use the funds for consumer spending. U.S. household debt as a percentage of income rose to 130% during 2007, versus 100% earlier in the decade.³¹

A culture of consumerism is a factor. In the early 2000's recession that began in early 2001 and which was exacerbated by the September 11, 2001 terrorist attacks, Americans were asked by the current President, George W. Bush, to spend their way out of economic decline and "Get down to Disney World in Florida."³² This call linking patriotism to shopping echoed the urging of former President Bill Clinton to "get out and shop"³³, and corporations like General Motors produced commercials with the same theme.

Overbuilding during the boom period, increasing foreclosure rates and unwillingness of many homeowners to sell their homes at reduced market prices have significantly increased the supply of housing inventory available. Sales volume (units) of new homes dropped by 26.4% in 2007 versus the prior year. By January 2008, the inventory of unsold new homes stood at 9.8 months based on December 2007 sales volume, the highest level since 1981.³⁴ Further, a record of nearly four million unsold existing homes were for sale,³⁵ including nearly 2.9 million that were vacant.³⁶

This excess supply of home inventory places significant downward pressure on prices. As prices decline, more homeowners are at risk of default and foreclosure. According to the S&P/Case-Shiller housing price index, by November 2007, average U.S. housing prices had fallen approximately 8% from their 2006 peak.³⁷ However, there was significant variation in price changes across U.S. markets, with many appreciating and others depreciating.³⁸ The price decline in December 2007 versus the year-ago period was 10.4%. As of February 2008, housing prices are expected to continue declining until this inventory of surplus homes (excess supply) is reduced to more typical levels.



Each sales data point (blue line) is annualized based on the most recent month's rate of sale. The inventory figure (green line) represents the number of homes for sale at a point in time. The inventory months to sell (red line) is how many months it would take to sell the existing inventory.

Source Data: National Association of Realtors (NAR)
 Chart Created by Contributor

Figure 3 - Existing Homes Sales, Inventory, and Months Supply, By Quarter

Role of borrowers

A variety of factors have contributed to an increase in the payment delinquency rate for subprime ARM borrowers, which recently reached 21%, roughly four times its historical level.¹⁴

Easy credit, combined with the assumption that housing prices would continue to appreciate, also encouraged many subprime borrowers to obtain ARM's they could not afford after the initial incentive period. Once housing prices started depreciating moderately in many parts of the U.S. (see APPENDIX 3 - United States Housing Market Correction and APPENDIX 4 - United States Housing Bubble), refinancing became more difficult. Some homeowners were unable to re-finance and began to default on loans as their loans reset to higher interest rates and payment amounts. Other homeowners, facing declines in home market value or with limited accumulated equity, are choosing to stop paying their mortgage. They are essentially "walking away" from the property and allowing foreclosure, despite the impact to their credit rating.³⁹

Misrepresentation of loan application data is another contributing factor. In a Jan 13, 2008 column in the New York Times, George Mason University economics professor Tyler Cowen wrote, "There has been plenty of talk about 'predatory lending,' but 'predatory borrowing' may have been the bigger problem. As much as 70 percent of recent early payment defaults had fraudulent misrepresentations on their original loan applications, according to one recent study. The research was done by BasePoint Analytics, which helps banks and lenders identify fraudulent transactions; the study looked at more than three million loans from 1997 to 2006, with a majority from 2005 to 2006. Applications with

misrepresentations were also five times as likely to go into default. Many of the frauds were simple rather than ingenious. In some cases, borrowers who were asked to state their incomes just lied, sometimes reporting five times actual income; other borrowers falsified income documents by using computers.”⁴⁰

US Department of the Treasury suspicious activity report of mortgage fraud increased by 1,411 percent between 1997 and 2005.⁴¹

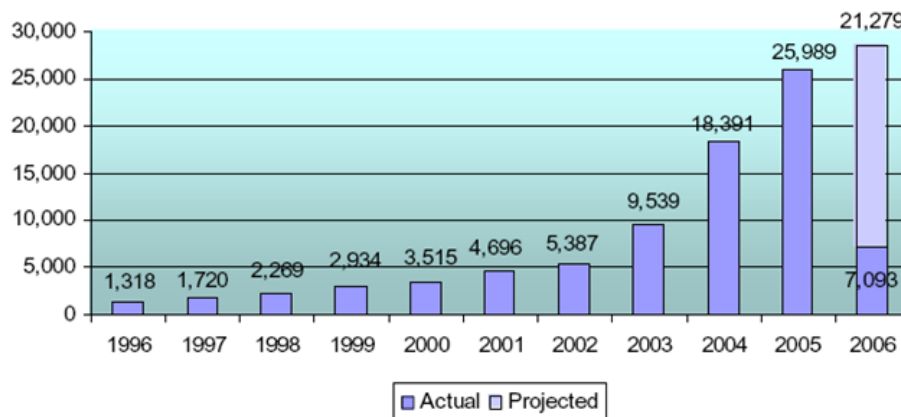


Figure 4 - Mortgage fraud by borrowers from US Department of the Treasury

Role of financial institutions

A variety of factors have caused lenders to offer an increasing array of higher-risk loans to higher-risk borrowers. These high risk loans included the “No Income, No Job and no Assets” loans, sometimes referred to as Ninja loans. The share of subprime mortgages to total originations was 5% (\$35 billion) in 1994⁴², 9% in 1996⁴³, 13% (\$160 billion) in 1999⁴², and 20% (\$600 billion) in 2006.^{43 44} A study by the Federal Reserve indicated that the average difference in mortgage interest rates between subprime and prime mortgages (the “subprime markup” or “risk premium”) declined from 2.8 percentage points (280 basis points) in 2001, to 1.3 percentage points in 2007. In other words, the risk premium required by lenders to offer a subprime loan declined. This occurred even though subprime borrower and loan characteristics declined overall during the 2001–2006 period, which should have had the opposite effect. The combination is common to classic boom and bust credit cycles.⁴⁵

In addition to considering higher-risk borrowers, lenders have offered increasingly high-risk loan options and incentives. One example is the interest-only adjustable-rate mortgage (ARM), which allows the homeowner to pay just the interest (not principal) during an initial period. Another example is a “payment option” loan, in which the homeowner can pay a variable amount, but any interest not paid is added to the principal. Further, an estimated one-third of ARM originated between 2004–2006 had “teaser” rates below 4%, which then increased significantly after some initial period, as much as doubling the monthly payment.⁴⁶

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.⁴⁷

Critics note that the Bankruptcy Abuse Prevention and Consumer Protection Act did nothing to curtail the predatory practices of credit card companies, such as exorbitant interest rates, rising and hidden fees, targeting minors and the recently bankrupt for new cards. The bill's critics pointed out that these practices are significant contributors to the growth of consumer bankruptcies.⁴⁸

Role of securitization

Securitization is a structured finance process in which assets, receivables or financial instruments are acquired, classified into pools, and offered as collateral for third-party investment.⁴⁹ Due to securitization, investor appetite for mortgage-backed securities (MBS), and the tendency of rating agencies to assign investment-grade ratings to MBS, loans with a high risk of default could be originated, packaged and the risk readily transferred to others. Asset securitization began with the structured financing of mortgage pools in the 1970's.⁵⁰ The securitized share of subprime mortgages (i.e., those passed to third-party investors) increased from 54% in 2001, to 75% in 2006.⁴⁵ Alan Greenspan stated that the securitization of home loans for people with poor credit — not the loans themselves — were to blame for the current global credit crisis.⁵¹

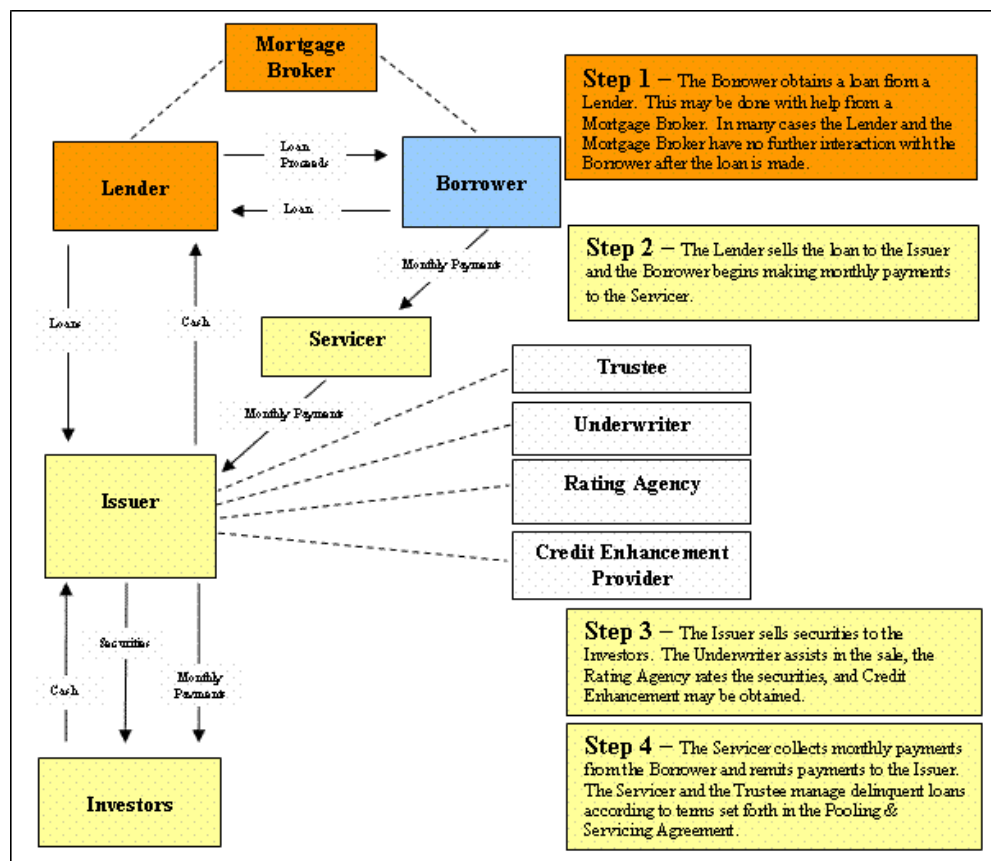


Figure 5 - Borrowing Under a Securitization Structure

Role of mortgage brokers

Mortgage brokers do not lend their own money. There is not a direct correlation between loan performance and income. In the U.S. they have a financial incentive for selling complex, adjustable rate mortgages (ARM's), since they earn significantly higher commissions.⁵²

According to a study by Wholesale Access Mortgage Research & Consulting Inc., in 2004 U.S. Mortgage brokers originated 68% of all residential loans in the U.S., with subprime and Alt-A loans accounting for 42.7% of brokerages' total production volume.⁵³

The chairman of the (U.S.) Mortgage Bankers Association claimed brokers profited from a home loan boom but didn't do enough to examine whether borrowers could repay.⁵⁴

Role of mortgage underwriters

Underwriters determine if the risk of lending to a particular borrower under certain parameters is acceptable. Most of the risks and terms that underwriters consider fall under the three C's of underwriting: credit, capacity and collateral.

In 2007, 40 percent of all subprime loans were generated by automated underwriting.⁵⁵ An Executive vice president of Countrywide Home Loans Inc. stated in 2004 "Prior to automating the process, getting an answer from an underwriter took up to a week. We are able to produce a decision inside of 30 seconds today. ... And previously, every mortgage required a standard set of full documentation."⁵⁶ Some think that users whose lax controls and willingness to rely on shortcuts led them to approve borrowers that under a less-automated system would never have made the cut are at fault for the subprime meltdown.⁵⁷

Role of government and regulators

Economist Robert Kuttner has criticized the repeal of the Glass-Steagall Act as contributing to the subprime meltdown.⁵⁸ A taxpayer-funded government bailout related to mortgages during the Savings and Loan crisis may have created a moral hazard and acted as encouragement to lenders to make similar higher risk loans.⁵⁹ Additionally, there is debate among economists regarding the effect of the Community Reinvestment Act, with detractors claiming it encourages lending to uncreditworthy consumers^{60 61} and defenders claiming a thirty year history of lending without increased risk.^{62 63 64}

Some have argued that, despite attempts by various U.S. states to prevent the growth of a secondary market in repackaged predatory loans, the Treasury Department's Office of the Comptroller of the Currency, at the insistence of national banks, struck down such attempts as violations of Federal banking laws.⁶⁵

In response to a concern that lending was not properly regulated, the House and Senate are both considering bills to regulate lending practices.⁶⁶

Lawmakers received favourable treatment from financial institutions involved in the subprime industry; see Countrywide Financial political loan scandal, below.

Role of credit rating agencies

Credit rating agencies are now under scrutiny for giving investment-grade ratings to securitization transactions (CDOs and MBSs) based on subprime mortgage loans. Higher ratings were justified by various credit enhancements including overcollateralization (pledging collateral in excess of debt issued), credit default insurance, and equity investors willing to bear the first losses. Critics claim that conflicts of interest were involved, as rating agencies are paid by the firms that organize and sell the debt to investors, such as investment banks.⁶⁷ On June 11, 2008 the U.S. Securities and Exchange Commission proposed far-reaching rules designed to address perceived conflicts of interest between rating agencies and issuers of structured securities. The proposal would, among other things, prohibit a credit rating agency from issuing a rating on a structured product unless information on assets underlying the product was available, prohibit credit rating agencies from structuring the same products that they rate, and require the public disclosure of the information a credit rating agency uses to determine a rating on a structured product, including information on the underlying assets. The last proposed requirement is designed to facilitate “unsolicited” ratings of structured securities by rating agencies not compensated by issuers.⁶⁸

As of July 2008, Standard & Poors (S&P) had downgraded 902 tranches of U.S. residential mortgage backed securities (RMBS) and CDO’s of asset-backed securities (ABS) that had been originally rated “triple-A” out of a total of 4,083 tranches originally rated “triple-A;” 466 of those downgrades of “triple-A” securities were to speculative grade ratings. S&P had downgraded a total of 16,381 tranches of U.S. RMBS and CDO’s of ABS from all ratings categories out of 31,935 tranches originally rated, over half of all RMBS and CDO’s of ABS originally rated by S&P.⁶⁹ Since certain types of institutional investors are allowed to only carry investment-grade (e.g., “BBB” and better) assets, there is an increased risk of forced asset sales, which could cause further devaluation.⁷⁰

Role of central banks

Central banks are primarily concerned with managing the rate of inflation and avoiding recessions. They are also the “lenders of last resort” to ensure liquidity. They are less concerned with avoiding asset bubbles, such as the housing bubble and dot-com bubble. Central banks have generally chosen to react after such bubbles burst to minimize collateral impact on the economy, rather than trying to avoid the bubble itself. This is because identifying an asset bubble and de-

termining the proper monetary policy to properly deflate it are not proven concepts.⁷¹ There is significant debate among economists regarding whether this is the optimal strategy.⁷²

Federal Reserve actions raised concerns among some market observers that it could create a moral hazard. Some industry officials said that Federal Reserve Bank of New York involvement in the rescue of Long-Term Capital Management in 1998 would encourage large financial institutions to assume more risk, in the belief that the Federal Reserve would intervene on their behalf.⁷³

A contributing factor to the rise in home prices was the lowering of interest rates earlier in the decade by the Federal Reserve, to diminish the blow of the collapse of the dot-com bubble and combat the risk of deflation.⁷⁴ From 2000 to 2003, the Federal Reserve lowered the federal funds rate target from 6.5% to 1.0%. The central bank was concerned with promoting continued economic expansion after the dot-com bubble, and believed that interest rates could be lowered safely because the rate of inflation was low. The Federal Reserve's inflation figures, however, were flawed. Richard W. Fisher, President and CEO of the Federal Reserve Bank of Dallas, stated that the Federal Reserve's interest rate policy during this time period was misguided by this erroneously low inflation data, thus contributing to the housing bubble:

“A good central banker knows how costly imperfect data can be for the economy. This is especially true of inflation data. In late 2002 and early 2003, for example, core PCE measurements were indicating inflation rates that were crossing below the 1 percent “lower boundary.” At the time, the economy was expanding in fits and starts. Given the incidence of negative shocks during the prior two years, the Fed was worried about the economy's ability to withstand another one. Determined to get growth going in this potentially deflationary environment, the FOMC adopted an easy policy and promised to keep rates low. A couple of years later, however, after the inflation numbers had undergone a few revisions, we learned that inflation had actually been a half point higher than first thought.

In retrospect, the real fed funds rate turned out to be lower than what was deemed appropriate at the time and was held lower longer than it should have been. In this case, poor data led to a policy action that amplified speculative activity in the housing and other markets. Today, as anybody not from the former planet of Pluto knows, the housing market is undergoing a substantial correction and inflicting real costs to millions of homeowners across the country. It is complicating the task of achieving our monetary objective of creating the conditions for sustainable non-inflationary growth.”⁷⁵

Effects

Effect on stock markets

On July 19, 2007, the Dow Jones Industrial Average hit a record high, closing above 14,000 for the first time.⁷⁶ By August 15, the Dow had dropped below 13,000 and the S&P 500 had crossed into negative territory year-to-date. Similar drops occurred in virtually every market in the world, with Brazil and Korea being hard-hit. Large daily drops became common, with, for example, the KOSPI dropping about 7% in one day,⁷⁷ although 2007's largest daily drop by the S&P 500 in the U.S. was in February, a result of the subprime crisis.

Mortgage lenders^{78 79} and home builders^{80 81} fared terribly, but losses cut across sectors, with some of the worst-hit industries, such as metals and mining companies, having only the vaguest connection with lending or mortgages.⁸²

Crisis has caused panic in financial markets and encouraged investors to take their money out of risky mortgage bonds and shaky equities and put it into commodities as "stores of value".

Effect on financial institutions

See also: "APPENDIX 1 - Subprime Crisis Impact Timeline" and "APPENDIX 2 - List of writedowns due to subprime crisis"

Many banks, mortgage lenders, real estate investment trusts (REIT), and hedge funds suffered significant losses as a result of mortgage payment defaults or mortgage asset devaluation. As of May 21, 2008 financial institutions had recognized subprime-related losses and write-downs exceeding U.S. \$379 billion.⁵

Profits at the 8,533 U.S. banks insured by the FDIC declined from \$35.2 billion to \$646 million (89 percent) during the fourth quarter of 2007 versus the prior year, due to soaring loan defaults and provisions for loan losses. It was the worst bank and thrift quarterly performance since 1990. For all of 2007, these banks earned approximately \$100 billion, down 31 percent from a record profit of \$145 billion in 2006. Profits declined from \$35.6 billion to \$19.3 billion during the first quarter of 2008 versus the prior year, a decline of 46%.^{83 84}

Other companies from around the world, such as IKB Deutsche Industriebank⁸⁵, have also suffered significant losses⁸⁶ and scores of mortgage lenders have filed for bankruptcy.⁸⁷ Top management has not escaped unscathed, as the CEO's of Merrill Lynch and Citigroup were forced to resign within a week of each other.⁸⁸ Various institutions follow-up with merger deals.⁸⁹

In addition, Northern Rock and Bear Stearns⁹⁰ have required emergency assistance from central banks. IndyMac was shut down by the FDIC on July 11, 2008.

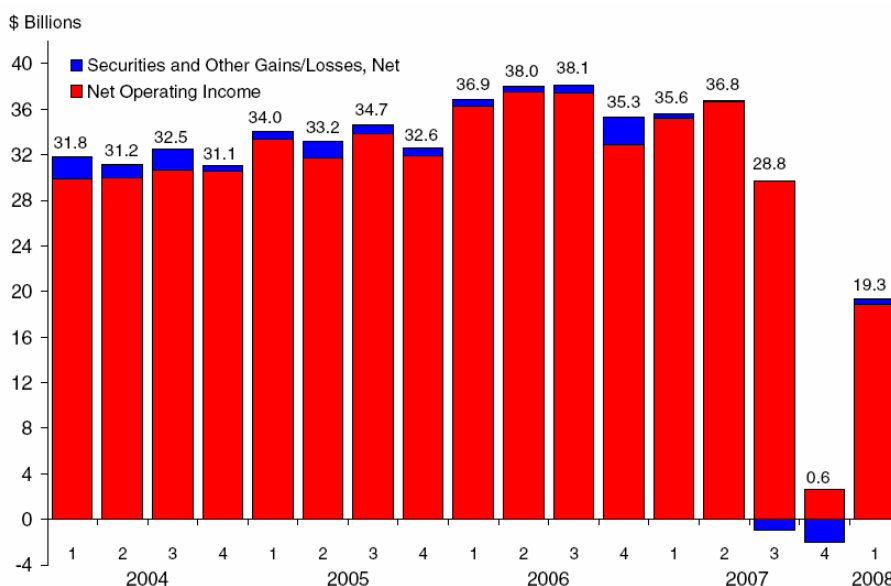
The crisis also affected Indian banks which have ventured into USA. ICICI, India's second largest bank, has reported mark-to-market loss of \$263 million in its

loans and investment exposures. Other state owned banks such as State Bank of India, Bank of India and Bank of Baroda have refused to release their figures.⁹¹

At least 100 mortgage companies have either shut down, suspended operations or been sold since 2007.⁹²

As increasing amounts of bad debt are passed on to professional debt collectors, the collection industry is projected to grow by 9.5 percent in 2008 and will continue to experience growth as long as delinquencies continue to mount.⁹³

Quarterly U.S. Bank Earnings 2004 - Present



Source: FDIC Quarterly Banking Profile Q1 2008

Figure 6 -FDIC Graph - U.S. Bank & Thrift Profitability By Quarter

“Waves” of the credit crunch

The TED spread and other indicators of credit risk⁹⁴ show that the credit crisis since August 2007 has come in three waves, the ebbing of which has been roughly coincident with the first rate cuts from the Fed, the introduction of emergency new monetary facilities by the Fed, and the Fed-assisted sale of Bear Stearns, respectively.

Effect on insurance companies

There is concern that some homeowners are turning to arson as a way to escape from mortgages they can't or refuse to pay. The FBI reports that arson grew 4% in suburbs and 2.2% in cities from 2005 to 2006. As of January 2008, the 2007 numbers were not yet available.^{95 96}

Effect on municipal bond “monoline” insurers

A secondary cause and effect of the crisis relates to the role of municipal bond “monoline” insurance corporations such as Ambac and MBIA. By insuring municipal bond issues, those bonds achieve higher debt ratings. However, some of these companies also insured CDO’s backed by low-rated tranches of subprime mortgage-backed securities, and as default rates on those MBS have risen, the insurers have suffered significant losses.⁹⁷ As a result, rating agencies have downgraded several bond insurers-as well as the bonds they insure^{98 99} -some to low speculative grade rating categories.^{100 101} The downgrades further threaten the bond insurers because they become unable to underwrite new business going forward. The downgrades may also require financial institutions holding the bonds to lower their valuation or to sell them, as some entities (such as pension funds) are only allowed to hold the highest-grade bonds. The effect of such devaluation on institutional investors and corporations holding the bonds (including major banks) has been estimated as high as \$200 billion. Regulators are taking action to encourage banks to lend the required capital to certain monoline insurers, to avoid such an impact.¹⁰² However, rather than recapitalizing insurance units plagued by exposure to subprime related products, some insurers are focused on moving excess capital to previously dormant units that could continue to underwrite new business.¹⁰³

Effect on home owners

According to the S&P/Case-Shiller housing price index, by November 2007, average U.S. housing prices had fallen approximately 8% from their 2006 peak.³⁷ However, there was significant variation in price changes across U.S. markets, with many appreciating and others depreciating.³⁸ The price decline in December 2007 versus the year-ago period was 10.4%. Sales volume (units) of new homes dropped by 26.4% in 2007 versus the prior year. By January 2008, the inventory of unsold new homes stood at 9.8 months based on December 2007 sales volume, the highest level since 1981.³⁴

Housing prices are expected to continue declining until this inventory of surplus homes (excess supply) is reduced to more typical levels. As MBS and CDO valuation is related to the value of the underlying housing collateral, MBS and CDO losses will continue until housing prices stabilize.⁷¹

As home prices have declined following the rise of home prices caused by speculation and as re-financing standards have tightened, a number of homes have been foreclosed and sit vacant. These vacant homes are often poorly-maintained and sometimes attract squatters and/or criminal activity with the result that increasing foreclosures in a neighbourhood often serve to further accelerate home price declines in the area. Rents have not fallen as much as home prices with the result that in some affluent neighbourhoods’ homes that were formerly owner occupied are now occupied by renters. In select areas falling home prices along with a decline in the U.S. dollar have encouraged foreigners to buy homes for either occasional use and/or long term investments. Addi-

tional problems are anticipated in the future from the impending retirement of the baby boomer generation. It is believed that a significant proportion of baby boomers are not saving adequately for retirement and were planning on using their increased property value as a “piggy bank” or replacement for a retirement-savings account. This is a departure from the traditional American approach to homes where “people worked toward paying off the family house so they could hand it down to their children”.¹⁰⁴

Effect on jobs of the financial sector

According to Bloomberg, from July 2007 to March 2008 financial institutions laid off more than 34,000 employees.⁹² In April, job cut announcements continued with Citigroup announcing an extra 9,000 layoffs for the remainder of 2008, back in January 2008 Citigroup had already slashed 4,200 positions.¹⁰⁵

Also in April, Merrill Lynch said that it planned to terminate 2,900 jobs by the end of the year.¹⁰⁶ At Bear Stearns there is fear that half of the 14,000 jobs could be eliminated once JP Morgan completes its acquisition.⁹² Also that month, Wachovia cut 500 investment banker positions¹⁰⁷, Washington Mutual cut its payroll by 3,000 workers¹⁰⁸ and the Financial Times reported that RBS may cut up to 7,000 job positions worldwide.¹⁰⁹ ¹¹⁰ 40,000 workers in the City of London's financial district are expected to lose their jobs.

Effect on minorities

There is a disproportionate level of foreclosures in some minority neighbourhoods.¹¹¹ ¹¹²

About 46% of Hispanics and 55% of African Americans who obtained mortgages in 2005 got higher-cost loans compared with about 17% of whites and Asians, according to Federal Reserve data. Other studies indicate they would have qualified for lower-rate loans.¹¹²

Effect on tenants

Many renters have been forced from their homes by foreclosures due to their landlords defaulting on loans. According to a January study by the Mortgage Bankers Association, one out of every seven Maryland homes that lenders began foreclosure proceedings on last summer was not occupied by the owner. Foreclosure voids any lease agreement, and renters have no legal right to continue renting.¹¹³

Effect on world economy

When the crisis first came to light, many analysts called it a domestic problem--one that would only affect US housing markets. However, the crisis quickly spread throughout the world. In September 2007, Northern Rock a British Bank, experienced an old fashioned "run on the bank" after it was revealed that the bank was having trouble raising liquidity. Within one day, customers had withdrawn an estimated £1 billion. This was the first bank run in Britain since 1866¹¹⁴. The Bank of China (the #2 bank in China) announced in August of 2007, that it holds \$9.7 billion dollars of US Subprime debt.¹¹⁵ In January of 2008, Korean markets fell due to the "selling spree" of shares of US mortgages.¹¹⁶ Because of the global economy, and the huge Subprime "pool" of mortgages that was bought by investors world wide, the International Monetary Fund (IMF) "says that the worldwide losses stemming from the US subprime mortgage crisis could run to \$945 billion."¹¹⁷ It has yet to be seen if the US's stimulus plan will be enough to help the global economy too.

Actions to manage the crisis

The Federal Reserve

The U.S. central banking system, the Federal Reserve, in partnership with central banks around the world, has taken several steps to address the crisis. Federal Reserve Chairman Ben Bernanke stated in early 2008: "Broadly, the Federal Reserve's response has followed two tracks: efforts to support market liquidity and functioning and the pursuit of our macroeconomic objectives through monetary policy."¹¹⁴

In August 2007, the Federal Open Market Committee announced that "downside risks to growth have increased appreciably," a signal that interest rate cuts might be forthcoming.¹¹⁸ Between September 18, 2007 and April 30, 2008, the target for the Federal funds rate was lowered from 5.25% to 2% and the discount rate was lowered from 5.75% to 2.25%, through six separate actions.^{119 120} The discount rate is the interest rate charged to commercial banks and other depository institutions on loans they receive from their regional Federal Reserve Bank's lending facility via the Discount window.

The Fed and other central banks have conducted open market operations to ensure member banks have access to funds (i.e., liquidity). These are effectively short-term loans to member banks collateralized by government securities. Central banks have also lowered the interest rates charged to member banks (called the discount rate in the U.S.) for short-term loans.¹²¹ Both measures effectively lubricate the financial system, in two key ways. First, they help provide access to funds for those entities with illiquid mortgage-backed securities. This helps these entities avoid selling the MBS at a steep loss. Second, the available funds

stimulate the commercial paper market and general economic activity. Specific responses by central banks are included in the subprime crisis impact timeline.

The Fed is using the Term auction facility (TAF) to provide short-term loans (liquidity) to banks. The Fed increased the monthly amount of these auctions to \$100 billion during March 2008, up from \$60 billion in prior months. In addition, term repurchase agreements expected to cumulate to \$100 billion were announced, which enhance the ability of financial institutions to sell mortgage-backed and other debt. The Fed indicated that both the TAF and repurchase agreement amounts will continue and be increased as necessary.¹²² During March 2008, the Fed also expanded the types of institutions to which it lends money and the types of collateral it accepts for loans.¹²³

Fed Chairman Bernanke also delivered a speech March 4, 2008 titled “Reducing Preventable Mortgage Foreclosures.” He advocated several solutions, including the reduction of loan principal amounts.¹²⁴ This solution was highlighted to address a growing concern that an estimated 8.8 million U.S. homeowners (10%) with negative equity (homes worth less than the mortgage principal) will have a financial incentive to “walk away” from the property, further exacerbating the crisis.¹²⁵

In March 2008, the Fed also provided funds and guarantees to enable bank J.P. Morgan Chase to purchase Bear Stearns, a large financial institution with substantial mortgage-backed securities (MBS) investments that had recently plunged in value. This action was taken in part to avoid a potential fire sale of nearly U.S. \$210 billion of Bear Stearns' MBS and other assets, which could have caused further devaluation in similar securities across the banking system.¹²⁶ ¹²⁷ In addition, Bear had taken on a significant role in the financial system via credit derivatives, essentially insuring against (or speculating regarding) mortgage and other debt defaults. The risk to its ability to perform its role as a counterparty in these derivative arrangements was another major threat to the banking system.¹²⁸

In July 2008, the Fed finalized new rules that apply to mortgage lenders. Fed Chairman Ben Bernanke stated that the rules “prohibit lenders from making higher-priced loans without due regard for consumers' ability to make the scheduled payments and require lenders to verify the income and assets on which they rely when making the credit decision. Also, for higher-priced loans, lenders now will be required to establish escrow accounts so that property taxes and insurance costs will be included in consumers' regular monthly payments...Other measures address the coercion of appraisers, servicer practices, and other issues. We believe the new rules will help to restore confidence in the mortgage market.”¹²⁹

Loan modification/Loss Mitigation/Hope Now Alliance

Lenders and homeowners both may benefit from avoiding foreclosure, which is a costly and lengthy process. Some lenders have taken action to reach out to

homeowners to provide more favourable mortgage terms (i.e., refinancing, loan modification or Loss Mitigation). Homeowners have also been encouraged to contact their lenders to discuss alternatives.¹³⁰

President George W. Bush announced a plan voluntarily and temporarily to freeze the mortgages of a limited number of mortgage debtors holding ARM's, declaring "I have a message for every homeowner worried about rising mortgage payments: The best you can do for your family is to call (sic)"¹³¹ the correct number 1-888-995-HOPE.¹³² A refinancing facility called FHA-Secure was also created.¹³³ This is part of an ongoing collaborative effort between the US Government and private industry to help some sub-prime borrowers called the Hope Now Alliance.¹³⁴

The Hope Now Alliance released a report in February, 2008 indicating it helped 545,000 subprime borrowers with shaky credit in the second half of 2007, or 7.7 percent of 7.1 million subprime loans outstanding in September 2007. A spokesperson acknowledged that much more must be done.¹³⁵ During February 2008, a program called "Project Lifeline" was announced. Six of the largest U.S. lenders, in partnership with the Hope Now Alliance, agreed to defer foreclosure actions for 30 days for homeowners 90 or more days delinquent on payments. The intent of the program was to encourage more loan adjustments, to avoid foreclosures.¹³⁶

Corporations, trade groups, and consumer advocates have begun to cite statistics on the numbers and types of homeowners assisted by loan modification programs. There is some dispute regarding the appropriate measures, sources of data, and adequacy of progress. A report issued in January 2008 showed that mortgage lenders modified 54,000 loans and established 183,000 repayment plans in the third quarter of 2007, a period in which there were 384,000 new foreclosures. Consumer groups claimed the modifications affected less than 1 percent of the 3 million subprime loans with adjustable rates that were outstanding in the third quarter.¹³⁷

The State Foreclosure Prevention Working Group, a coalition formed by 11 state attorney's general and bank regulators, reported in April 2008 that the increasing pace of foreclosures exceeds the ability of loan servicers to keep up. Seventy percent of subprime mortgage holders are not getting the help required. Nearly two-thirds of loan workouts require more than six weeks to complete under the current "case-by-case" method of review. The group has recommended applying a more systematic method of loan modification that can automatically be applied to a large number of struggling homeowners and slowing down the pace of foreclosures.¹³⁸

Bank financial health

Major financial institutions had obtained over \$260 billion in new capital (i.e., cash investments) as of May, 2008.¹³⁹ Such capital is used to help banks maintain required capital ratios (an important measure of financial health), which have

declined significantly due to subprime loan or CDO losses. This capital was raised by issuing such instruments as bonds or preferred stock to investors in exchange for cash. Such capital rising has been advocated by the leaders of the U.S. Federal Reserve and the Treasury Department.¹⁴⁰ Well-funded banks are in a better position to loan at favourable interest rates, which offsets the liquidity and uncertainty aspects of the crisis. That banks and securities firms have been able to place such large volumes of debt with investors is an indication to some analysts that these firms will survive the credit crisis.¹⁴¹

Banks have obtained some of this capital from sovereign wealth funds, which are entities that control the surplus savings of developing countries. An estimated U.S. \$69 billion has been invested by these entities in large financial institutions over the past year. On January 15, 2008, sovereign wealth funds provided a total of \$21 billion to two major U.S. financial institutions. Sovereign wealth funds are estimated to control nearly \$2.9 trillion. Much of this wealth is oil and gas related. As they represent the surplus funds of governments, these entities carry at least the perception that their investments have underlying political motives.¹⁴²

Certain major banks have also reduced their dividend payouts¹⁴³ to increase liquidity and further dividend reductions are expected by some analysts in 2008.¹⁴⁴ Of the 3,776 U.S. FDIC insured institutions that paid common stock dividends in the first quarter of 2007, almost half (48 percent) paid lower dividends in the first quarter of 2008, including 666 institutions that paid no dividends. Insured institutions paid \$14.0 billion in total dividends in the first quarter, down \$12.2 billion (46.5 percent) from a year earlier.¹⁴⁵

Credit rating agencies

Credit rating agencies help evaluate and report on the risk involved with various investment alternatives. The rating processes can be re-examined and improved to encourage greater transparency to the risks involved with complex mortgage-backed securities and the entities that provide them. Rating agencies have recently begun to aggressively downgrade large amounts of mortgage-backed debt.¹⁴⁶ In addition, rating agencies have begun taking action to address perceived or actual conflicts of interest, including additional internal monitoring programs, third party reviews of rating processes, and board updates.¹⁴⁷

Regulation

Regulators and legislators are considering action regarding lending practices, bankruptcy protection, tax policies, affordable housing, credit counselling, education, and the licensing and qualifications of lenders.¹⁴⁸ Regulations or guidelines can also influence the nature, transparency and regulatory reporting required for the complex legal entities and securities involved in these transac-

tions. Congress also is conducting hearings help identify solutions and apply pressure to the various parties involved.¹⁴⁹

A sweeping proposal was presented March 31, 2008 regarding the regulatory powers of the U.S. Federal Reserve, expanding its jurisdiction over other types of financial institutions and authority to intervene in market crises.¹⁵⁰

The U.S House passed a bill in early April, 2008 that would offer government insurance on \$300 billion in new mortgages to refinance loans for an estimated 500,000 borrowers facing foreclosure and an additional 15 billion to affected states to buy and fix foreclosed homes.¹⁵¹

In the wake of a subprime mortgage crisis and questions about Countrywide's VIP program, ethics experts and key senators recommend that members of congress should be required to disclose information about their mortgages.¹⁵²

Law enforcement

The number of FBI agents assigned to mortgage-related crimes increased by 50 percent between 2007 and 2008.^{153 154} In June 2008, The FBI stated that its mortgage fraud caseload has doubled in the past three years to more than 1,400 pending cases.¹⁵⁵ Between 1 March and 18 June 2008, 406 people were arrested for mortgage fraud in an FBI sting across the country. People arrested include buyers, sellers and others across the wide-ranging mortgage industry. On 19 June 2008, two former Bear Stearns managers were arrested by the FBI, and were the first Wall Street executives arrested related to the subprime lending crisis. They were suspected of misleading investors about the risky subprime mortgage market.¹⁵⁶

Litigation

Litigation related to the subprime crisis is underway. A study released in February 2008 indicated that 278 civil lawsuits were filed in federal courts during 2007 related to the subprime crisis. The number of filings in state courts were not quantified but are also believed to be significant. The study found that 43 percent of the cases were class actions brought by borrowers, such as those that contended they were victims of discriminatory lending practices. Other cases include securities lawsuits filed by investors, commercial contract disputes, employment class actions, and bankruptcy-related cases. Defendants included mortgage bankers, brokers, lenders, appraisers, title companies, home builders, servicers, issuers, underwriters, bond insurers, money managers, public accounting firms, and company boards and officers.¹⁵⁷

Former Bear Stearns managers were named in civil lawsuits brought in 2007 by investors, including Barclays Bank PLC, who claimed they had been misled. Barclays claimed that Bear Stearns knew that certain assets in the High-Grade Structured Credit Strategies Enhanced Leverage Master Fund were worth much

less than their professed values. The suit claimed that Bear Stearns managers devised “a plan to make more money for themselves and further to use the Enhanced Fund as a repository for risky, poor-quality investments.” The lawsuit said Bear Stearns said that the enhanced fund was up almost 6% through June 2007 — when “in reality, the portfolio's asset values were plummeting.”¹⁵⁶

Media

The media can help educate the public and parties involved.²¹ It can also ensure the top subject material experts are engaged and have a voice to ensure a reasoned debate about the pros and cons of various solutions.¹⁵⁸

Economic Stimulus Act of 2008

President Bush also signed into law on February 13, 2008 an economic stimulus package of \$168 billion, mainly in the form of income tax rebates, to help stimulate economic growth.¹⁰ The economic stimulus package included the mailing of rebate checks to taxpayers. Such mailings started the week of April 28, 2008. These mailings, however, coincided with unexpected all-time jumps in food and gasoline prices. This coincidence prompted some to question whether the stimulus package would have the desired effect or whether consumers would just use it to make up for the gap generated by the higher food and fuel prices. Some Congressmen even contemplated legislation for a second round of stimulus rebate checks to ensure the initial intention of the stimulus package had the expected effect. The Treasury Secretary strongly opposed such initiative. Senators McCain and Clinton, meanwhile proposed eliminating the federal gasoline tax for the summer months instead.^{159 160}

Fannie Mae and Freddie Mac

The Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac), two large government-sponsored enterprises, are the two largest single mortgage backing entity in the United States. Between the two corporations, they back nearly half of all

2008 GSE support plan

The 2008 GSE support plan was announced by United States Treasury Secretary Henry Paulson on July 13, 2008, after a week in which the shares of government sponsored enterprises Fannie Mae and Freddie Mac fell almost by half. The plan contained three measures: an increase in the line of credit available to the GSEs from Treasury, so as to provide liquidity; the right for Treasury to purchase equity in the GSEs, so as to provide capital; and a consultative role for the Federal Reserve in a reformed GSE regulatory system. On the same day, the Federal Reserve announced that the Federal Reserve Bank of New York would have the right to lend to the GSEs as necessary.

mortgages, around \$12 trillion as of 2008.¹⁶¹ During the mortgage crises, some in the investment community feared the corporations would run out of capital. Both corporations insisted that they were financially solid, with sufficient capital to continue their businesses, but stock prices in both corporations dropped steadily nonetheless.

Due to their size, and key role in the US housing market, it had long been speculated that the US Government would take action to bolster both companies in such a situation. In July of 2008, this speculation became reality, as the Treasury Department and Federal Reserve bank announced plans to support both groups by raising credit limits, offering Federal Reserve loans at commercial banking rates, and possibly allowing the Treasury itself to purchase shares.¹⁶² While analysts disagreed on the financial need for such a bailout, the investor confidence provided by an explicit government show of support was likely needed in any case.

Expectations and forecasts

The legacy of Alan Greenspan has been cast into doubt with Senator Chris Dodd claiming he created the “perfect storm”.¹⁶³ Alan Greenspan has remarked that there is a one-in-three chance of recession from the fallout. Nouriel Roubini, a professor at New York University and head of Roubini Global Economics, has said that if the economy slips into recession “then you have a systemic banking crisis like we haven't had since the 1930s”.¹⁶⁴

On September 7, 2007, the Wall Street Journal reported that Alan Greenspan has said that the current turmoil in the financial markets is in many ways “identical” to the problems in 1987 and 1998.¹⁶⁵

The Associated Press described the current climate of the market on August 13, 2007, as one where investors were waiting for “the next shoe to drop” as problems from “an overheated housing market and an overextended consumer” are “just beginning to emerge.” MarketWatch has cited several economic analysts with Stifel Nicolaus claiming that the problem mortgages are not limited to the subprime niche saying “the rapidly increasing scope and depth of the problems in the mortgage market suggest that the entire sector has plunged into a downward spiral similar to the subprime woes whereby each negative development feeds further deterioration”, calling it a “vicious cycle” and adding that they “continue to believe conditions will get worse”.¹⁶⁶

Citigroup economists stated in mid-March 2008 regarding the likelihood of a recession that “The self-feeding downturn now in place shows signs of becoming deeply entrenched.”¹⁶⁷

As of November 22, 2007, analysts at a leading investment bank estimated losses on subprime CDO would be approximately U.S. \$148 billion.¹⁶⁸ As of December 22, 2007, a leading business periodical estimated subprime defaults between U.S. \$200–300 billion.¹⁶⁹ As of March 1, 2008 analysts from three large financial institutions estimated the impact would be between U.S. \$350–600 billion.¹⁷⁰

On March 20, 2008, the Organization for Economic Cooperation and Development downgraded its economic forecasts for the United States, the Eurozone and Japan for the first half of 2008.¹⁷¹

Alan Greenspan, the former Chairman of the Federal Reserve, stated: “The current credit crisis will come to an end when the overhang of inventories of newly built homes is largely liquidated, and home price deflation comes to an end. That will stabilize the now-uncertain value of the home equity that acts as a buffer for all home mortgages, but most importantly for those held as collateral for residential mortgage-backed securities. Very large losses will, no doubt, be taken as a consequence of the crisis. But after a period of protracted adjustment, the U.S. economy, and the world economy more generally, will be able to get back to business.”⁷¹

In May 2008, United States foreclosure filings rose an unprecedented 48 percent, “up nearly 50 percent compared with a year earlier.”¹⁷² The cause is attributed to a combination of decreasing home values, weak housing sales, stricter mortgage lending criteria and the increasingly sluggish U.S. economy. Homeowners in desperate financial straits are presented with fewer options on how to resolve their debt. Aggravating this problem, mortgage rates are increasing due to the perception of what the Federal Reserve might do to battle inflation. Further, it has been recently reported that inflation rates issued by the U.S. government are manipulated in such a way as not to truly reflect the real inflation rate.¹⁷³



NOTES

¹ “Episode 06292007”. [Bill Moyers Journal](#). PBS. 2007-06-29. [Transcript](#)

² Justin Lahart (2007-12-24). “[Egg Cracks Differ In Housing, Finance Shells](#)”, [WSJ.com](#), [Wall Street Journal](#). “It’s now conventional wisdom that a housing bubble has burst. In fact, there were two bubbles, a housing bubble and a financing bubble. Each fueled the other, but they didn’t follow the same course.”

³ “[U.S. FORECLOSURE ACTIVITY INCREASES 75 PERCENT IN 2007](#)”, [realtytrac.com](#), RealtyTrac Inc.

⁴ http://www.bloomberg.com/apps/news?pid=20601087&sid=atGti_UmcPnM&refer=home

⁵ Yalman Onaran (2008-05-19). “[Subprime Losses Top \\$379 Billion on Balance-Sheet Marks: Table](#)”, [Bloomberg.com](#), [Bloomberg L.P.](#)

⁶ [Ben S. Bernanke](#). “[The economic outlook](#)” U.S. House of Representatives (2008-01-17).

-
- ⁷ ["Bernanke Urges 'Hunkering' Banks to Raise Capital"](#), [Bloomberg LP](#) (2008-05-15).
- ⁸ [Federal Reserve](#) (2008-01-22). ["FRB: Press Release--FOMC statement--January 22, 2008"](#). [Press release](#).
- ⁹ ["Full speed ahead"](#), [The Economist](#) (2008-01-24).
- ¹⁰ Jeannine Aversa (2008-02-13). ["Rebate Checks in the Mail by Spring"](#), [The Huffington Post](#), [Arianna Huffington](#).
- ¹¹ ["How severe is subprime mess?"](#), [msnbc.com](#), [Associated Press](#) (2007-03-13).
- ¹² [Ben S. Bernanke](#). ["The Subprime Mortgage Market"](#) [Chicago, Illinois](#) (2007-05-17).
- ¹³ [Ben S. Bernanke](#). ["The Recent Financial Turmoil and its Economic and Policy Consequences"](#) [New York, New York](#) (2007-10-17).
- ¹⁴ [Ben S. Bernanke](#). ["Financial Markets, the Economic Outlook, and Monetary Policy"](#) [Washington, D.C.](#) (2008-01-10).
- ¹⁵ Bernanke, Ben S. ["Mortgage Delinquencies and Foreclosures"](#) Columbia Business School's 32nd Annual Dinner, New York, New York (2008-05-05).
- ¹⁶ [Mortgage Bankers Association](#) (2007-06-12). ["Delinquencies and Foreclosures Increase in Latest MBA National Delinquency Survey"](#). [Press release](#).
- ¹⁷ ["U.S. FORECLOSURE ACTIVITY INCREASES 75 PERCENT IN 2007"](#), [RealtyTrac](#) (2008-01-29).
- ¹⁸ ["FORECLOSURE ACTIVITY INCREASES 4 PERCENT IN APRIL"](#), [realitytrac.com](#), [RealtyTrac Inc](#)
- ¹⁹ ["ARM resets peaking: Borrowers unprepared - Oct. 17, 2007"](#).
- ²⁰ ["FRB: Testimony--Chairman Bernanke on the economic situation and outlook--November 8, 2007"](#) (2008).
- ²¹ ["FT.com / Video & Audio / Interactive graphics - Credit squeeze explained"](#) (2008).
- ²² ["The Mark-to-Market Melee"](#), [Newsweek](#), [Washington Post Company](#).
- ²³ ["Subprime mortgage woes infect commercial paper market - MarketWatch"](#) (2008).
- ²⁴ Neil Unmack (2007-10-18). ["Rhinebridge Commercial Paper SIV May Not Repay Debt \(Update1\)"](#), New York City, United States: [Bloomberg L.P.](#)
- ²⁵ ["The \\$2 bail-out"](#). [The Economist](#). [The Economist Group](#)
- ²⁶ ["BofA: The Credit Crunch Takes Its Toll"](#) (2008).
- ²⁷ ["Thornburg Braces for Tough Times Ahead"](#) (2008).
- ²⁸ ["SIVs, next shoe to drop in global credit crisis? - International Business Times -"](#) (2008).
- ²⁹ ["CENSUS BUREAU REPORTS ON RESIDENTIAL VACANCIES AND HOMEOWNERSHIP"](#), U.S. Census Bureau (October 26, 2007).
- ³⁰ ["CSI: credit crunch"](#) (2008).
- ³¹ ["America's economy"](#) (2008).
- ³² ["At O'Hare, President Says "Get On Board" "](#)
- ³³ ["TIMEurope.com: How the world has changed"](#) (2008).
- ³⁴ ["New home sales fell by record amount in 2007 - Real estate - MSNBC.com"](#) (2008).

- ³⁵ ["Housing Meltdown"](#) (2008).
- ³⁶ [Vacant homes 2.9MM](#)
- ³⁷ ["America's economy"](#) (2008).
- ³⁸ [Microsoft Word - 3Q07hpi.doc](#)
- ³⁹ ["Troubled borrowers are walking away from their homes - Feb. 6, 2008"](#)
- ⁴⁰ [So We Thought. But Then Again . . . - New York Times](#)
- ⁴¹ [Reported Suspicious Activities](#)
- ⁴² ["Warning signs of a bad home loan \(Page 2 of 2\)"](#) (2008).
- ⁴³ ["NPR: Economists Brace for Worsening Subprime Crisis"](#) (2008).
- ⁴⁴ [FRB: Speech-Bernanke, Fostering Sustainable Homeownership-March 14, 2008](#)
- ⁴⁵ ["Understanding the Subprime Mortgage Crisis"](#) (2008)
- ⁴⁶ ["NPR Article NPR: Economists Brace for Worsening Subprime Crisis"](#) (2008).
- ⁴⁷ Lewis, Holden (April 18, 2007). ["'Moral hazard' helps shape mortgage mess"](#), Bankrate.com.
- ⁴⁸ ["Testimony of Professor Elizabeth Warren to the U.S. Senate Judiciary Committee"](#), February 10, 2005.
- ⁴⁹ Black's Law Dictionary (7th ed)
- ⁵⁰ ["Asset Securitization Comptroller's Handbook"](#). US Comptroller of the Currency Administrator of National Banks (November 1997)
- ⁵¹ ["Greenspan sees signs of credit crisis easing - Stocks & economy - MSNBC.com"](#) (2008)
- ⁵² ["Mortgage brokers get fatter payoff for selling riskier loans North County Times - North San Diego and Southwest Riverside County News"](#) (2008).
- ⁵³ ["New Research About Mortgage Brokers Published"](#) (2008).
- ⁵⁴ ["Brokers, bankers play subprime blame game - Real estate - MSNBC.com"](#) (2008).
- ⁵⁵ Lynnley Browning (2007-03-27). ["The Subprime Loan Machine"](#), *nytimes.com*, New York City: Arthur Ochs Sulzberger, Jr.
- ⁵⁶ ["Bank Systems & Technology"](#) (2008).
- ⁵⁷ ["REALTOR Magazine-Daily News-Are Computers to Blame for Bad Lending?"](#) (2008).
- ⁵⁸ ["The Bubble Economy"](#) (2008).
- ⁵⁹ Weiner, Eric (November 29, 2007). ["Subprime Bailout: Good Idea or 'Moral Hazard'"](#), NPR.org.
- ⁶⁰ DiLorenzo, Thomas J. (2007-09-06). ["The Government-Created Subprime Mortgage Meltdown"](#). [LewRockwell.com](#).
- ⁶¹ Liebowitz, Stan. ["The Real Scandal - How feds invited the mortgage mess"](#). [New York Post](#).
- ⁶² Gordon, Robert. ["Did Liberals Cause the Sub-Prime Crisis?"](#). [The American Prospect](#).
- ⁶³ Seidman, Ellen. ["No, Larry, CRA Didn't Cause the Sub-Prime Mess"](#). [New American Foundation](#).
- ⁶⁴ Barr, Michael. ["Prepared Testimony of Michael S. Barr"](#). [U.S. House of Representatives](#).

-
- ⁶⁵ Bagley, Nicholas (2008-01-24). "[Crashing the Subprime Party: How the feds stopped the states from averting the lending mess.](#)". Slate.
- ⁶⁶ "[Free Preview - WSJ.com](#)" (2008).
- ⁶⁷ [Buttonwood | Credit and blame | Economist.com](#)
- ⁶⁸ "[SEC Proposes Comprehensive Reforms to Bring Increased Transparency to Credit Rating Process](#)" (2008).
- ⁶⁹ "[Tructure Finance Rating Transitions](#)" (2008).
- ⁷⁰ "[Credit markets](#)" (2008).
- ⁷¹ "[The Wall Street Journal Online - Featured Article](#)" (2008).
- ⁷² "[Assets and their liabilities](#)" (2008).
- ⁷³ Thomas J. McCool (2000-02-23). "[Responses to Questions Concerning Long-Term Capital Management and Related Events](#)" (.pdf). *General Government Division*. [Government Accountability Office](#).
- ⁷⁴ "[Federal Reserve Board: Monetary Policy and Open Market Operations](#)".
- ⁷⁵ Richard W. Fisher (2006-11-02). "[Confessions of a Data Dependent: Remarks before the New York Association for Business Economics](#)".
- ⁷⁶ "[Finally! Dow finishes above 14,000 - Jul. 19, 2007](#)".
- ⁷⁷ "[National, World and Business News](#)" (2008).
- ⁷⁸ "Yahoo! – Raitt Financial Mover" (2008).
- ⁷⁹ "[Thornburg says no bankruptcy as shares sink](#)" (2008).
- ⁸⁰ "[Housing starts, building permits both at 10-year low - Aug. 16, 2007](#)".
- ⁸¹ "Yahoo! – Sector Wrap Homebuilders" (2008).
- ⁸² "[Mining, metals companies hammered on debt jitters, M&A; chill - MarketWatch](#)" (2008).
- ⁸³ [FDIC Quarterly Profile Q1 08](#)
- ⁸⁴ [FDIC Profile FY 2007 Pre-Adjustment](#)
- ⁸⁵ "[Carnage on Wall Street as loans go bad](#)".
- ⁸⁶ "[UBS subprime losses mount, bank deep in red](#)" (2008).
- ⁸⁷ "[Bloomberg.com: Worldwide](#)" (2008).
- ⁸⁸ "[Prince out as Citigroup CEO; more writedowns disclosed - Nov. 4, 2007](#)".
- ⁸⁹ "[Similar deals expected to follow Countrywide sale](#)". *Mark McSherry*. Reuters.
- ⁹⁰ [BBC NEWS | Business | Q&A: Bear Stearns banking crisis](#)
- ⁹¹ [ICICI feels the subprime jitters, takes \\$263-mn hit](#)
- ⁹² [Bloomberg.com: Worldwide](#)
- ⁹³ [IBISWorld](#)
- ⁹⁴ "[Credit Crisis: Third Wave](#)". Calculated Risk

- ⁹⁵ Lewis, Marilyn (January 28, 2008). "[Broke homeowners linked to arsons](#)", MSN money.
- ⁹⁶ Birger, Jon (January 10 2008). "[Will foreclosures spark an arson boom?](#)", Fortune.
- ⁹⁷ "[Who Will Feel The Downgrades Of MBIA And Ambac, And By How Much](#)" (2008).
- ⁹⁸ "[Moody's downgrades MBIA's rating to A2; outlook is negative](#)" (2008).
- ⁹⁹ "[Moody's downgrades Ambac to Aa3; outlook is negative](#)" (2008).
- ¹⁰⁰ "[Moody's downgrades Security Capital Assurance subs XLCA and XLFA to B2; outlook is negative](#)" (2008).
- ¹⁰¹ "[Moody's downgrades FGIC's rating to B1; outlook is negative](#)" (2008).
- ¹⁰² "[Bond insurers](#)" (2008).
- ¹⁰³ "[Ambac Seeks Approval for Connie Lee Capitalization](#)" (2008).
- ¹⁰⁴ "[A house should not be your retirement piggy bank - MarketWatch](#)" (2008).
- ¹⁰⁵ [Citigroup posts another loss, cuts 9,000 more jobs - Apr. 18, 2008](#)
- ¹⁰⁶ [NY Times - Merrill Posts a Loss and Plans to Cut 2,900 More Jobs](#)
- ¹⁰⁷ [Merrill Lynch Joins Pink Slip Parade: 3,000 More Employees Cut | workforce.com](#)
- ¹⁰⁸ [Rundown of job cuts by the nation's big banks - International Herald Tribune](#)
- ¹⁰⁹ [Royal Bank of Scotland suggests planned job cuts could increase - International Herald Tribune](#)
- ¹¹⁰ [RBS job cuts: Bank admits staff losses are 'inevitable' - Scotsman.com Business](#)
- ¹¹¹ Manny Fernandez (October 15, 2007). "[Study Finds Disparities in Mortgages by Race](#)". [The New York Times](#).
- ¹¹² "[Minorities hit hard by rising costs of subprime loans - USATODAY.com](#)" (2008).
- ¹¹³ Jamie Smith Hopkins (2008-05-15). "[Out without warning](#)", [The Baltimore Sun](#), Timothy E Ryan.
- ¹¹⁴ [The bank that failed The Economist](#)
- ¹¹⁵ [Subprime Effects Felt Worldwide | Stock Market News & Stocks to Watch from StraightStocks](#)
- ¹¹⁶ [Digital Chosunilbo \(English Edition\) : Daily News in English About Korea](#)
- ¹¹⁷ [IMF says worldwide losses stemming from the US subprime mortgage crisis could run to \\$945 billion](#)
- ¹¹⁸ [FRB: Press Release-FOMC statement-August 17, 2007](#)
- ¹¹⁹ [FRB: Press Release-FOMC Statement-September 18, 2007](#)
- ¹²⁰ [FRB: Press Release-FOMC statement-March 18, 2008](#)
- ¹²¹ "[FRB: Speech--Bernanke, The Recent Financial Turmoil and its Economic and Policy Consequences--October 15, 2007](#)" (2008).
- ¹²² [FRB: Press Release-Federal Reserve announces two initiatives to address heightened liquidity pressures in term funding markets-March 7, 2008](#)
- ¹²³ [Investment Firms Tap Fed for Billions: Financial News - Yahoo! Finance](#)
- ¹²⁴ [FRB: Speech-Bernanke, Reducing Preventable Mortgage Foreclosures-March 4, 2008](#)

- ¹²⁵ [Housing Market Spirals, No End in Sight: Financial News - Yahoo! Finance](#)
- ¹²⁶ [JPMorgan to buy Bear Stearns for \\$2 a share - U.S. business - MSNBC.com](#)
- ¹²⁷ [After Bear Stearns, others could be at risk - U.S. business - MSNBC.com](#)
- ¹²⁸ [Investment banks | The \\$2 bail-out | Economist.com](#)
- ¹²⁹ <http://www.federalreserve.gov/newsevents/testimony/bernanke20080715a.htm>
- ¹³⁰ "[Criticism rains down on mortgage industry - USATODAY.com](#)" (2008).
- ¹³¹ "[President Bush Discusses Housing](#)" (December 6, 2007).
- ¹³² "[Fact Sheet: Helping American Families Keep Their Homes](#)" (December 6, 2007).
- ¹³³ "[HUD News Release 07-123](#)" (2008).
- ¹³⁴ <http://www.fsround.org/media/pdfs/AllianceRelease.pdf>
- ¹³⁵ "[Hope Now says nearly 8% of subprime borrowers helped - Feb. 6, 2008](#)".
- ¹³⁶ "[Major lenders put freeze on foreclosures - Feb. 12, 2008](#)".
- ¹³⁷ "[Report: More Foreclosures Than Workouts: Financial News - Yahoo! Finance](#)" (2008).
- ¹³⁸ [Report: No help yet for most subprime borrowers - Apr. 22, 2008](#)
- ¹³⁹ [Raising Capital Getting Harder For Banks: Financial News - Yahoo! Finance](#)
- ¹⁴⁰ [Bloomberg.com: Worldwide](#)
- ¹⁴¹ [Bloomberg.com: Worldwide](#)
- ¹⁴² "[Capital markets](#)" (2008).
- ¹⁴³ [Citi dividend cut criticized; move suggests more losses to come - MarketWatch](#)
- ¹⁴⁴ [More banks likely to cut dividends: Bernstein | Reuters](#)
- ¹⁴⁵ [FDIC Q1 '08 Banking Profile](#)
- ¹⁴⁶ "[S&P downgrades ratings on 1,413 classes of subprime-backed securities worth \\$22.02 billion - International Herald Tribune](#)" (2008).
- ¹⁴⁷ [S&P Rating Process Oversight](#)
- ¹⁴⁸ [JEC October Subprime Report - FINAL](#)
- ¹⁴⁹ "[Speaker Nancy Pelosi](#)" (2008).
- ¹⁵⁰ [Plan would expand Fed's power to intervene in financial crisis - CNN.com](#)
- ¹⁵¹ Alex Veiga (2008-05-14). "[US foreclosure filings surge 65 percent in April](#)", *Yahoo News*, Santa Clara, California: Associated Press.
- ¹⁵² "[Congress keeps mortgages off books](#)", Politico
- ¹⁵³ "[2 former Bear Stearns hedge fund managers charged](#)", *Press of Atlantic City*
- ¹⁵⁴ "[FBI Cracks Down On Mortgage Fraud](#)", CBS news
- ¹⁵⁵ "[Malicious" Mortgage Fraud - More than 400 Charged Nationwide](#)

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- ¹⁵⁶ [Ex-Bear Stearns managers arrested at their homes](#) By Tom Hays, Associated Press
- ¹⁵⁷ "[Subprime lawsuits on pace to top S&L cases - The Boston Globe](#)" (2008).
- ¹⁵⁸ "[YouTube - Cramer: Bernanke, Wake Up](#)" (2008).
- ¹⁵⁹ CBS Evening News with Katie Curic. April 29, 2008.
- ¹⁶⁰ [Bush: I've No Magic Wand For Gas Prices, At White House Press Conference, President Says Congress Is Blocking Proposals To Lower Prices - CBS News](#)
- ¹⁶¹ Duhigg, Charles, "[Loan-Agency Woes Swell From a Trickle to a Torrent](#)", The New York Times, Friday, July 11, 2008
- ¹⁶² Luhby, Tami, [CNN Money](#), Monday, July 14, 2008
- ¹⁶³ "[FT.com / Companies / US & Canada - Fed rapped over subprime loans](#)" (2008).
- ¹⁶⁴ "[Subprime crisis could pack political punch](#)" (2008).
- ¹⁶⁵ "[Greenspan sees turmoil similar to 1987:report](#)", Reuters (September 7, 2007).
- ¹⁶⁶ "[U.S. mortgage, housing markets seen caught in 'vicious cycle' - MarketWatch](#)" (2008).
- ¹⁶⁷ [New York Times - Fed Chief Shifts Path, Inventing Policy in Crisis](#)
- ¹⁶⁸ "[Bank capital](#)" (2008).
- ¹⁶⁹ "[The credit crunch](#)" (2008).
- ¹⁷⁰ [Bloomberg.com - Financial Firms Face \\$600 Billion of Losses, UBS Says](#)
- ¹⁷¹ [OECD cuts world growth outlook - CNN.com](#)
- ¹⁷² "[The Raw Story - Featured Article](#)" (2008).
- ¹⁷³ "[Harpers Organization - Featured Article](#)" (2008).

APPENDIX 1 - Subprime Crisis Impact Timeline

The subprime crisis impact timeline begins with a context that includes the Dot-com bubble, Early 2000s recession, United States housing bubble, and the bubble burst (market correction) in 2005 which resulted in the subprime crisis itself in 2007 and its consequences.

Context and summary

- ❖ 1985–1991: Savings and Loan Crisis
- ❖ 1999: Gramm-Leach-Bliley Act deregulates banking, insurance and securities into a financial services industry.
- ❖ 1995–2001: Dot-com bubble
 - 1998: inflation-adjusted home price appreciation exceeds 10%/year in most West Coast metropolitan areas
 - 2001: dot-com bubble collapse
- ❖ 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% (May 2000) to 1.75% (December 2001).
 - 2002: Annual home price appreciation of 10% or more in California, Florida, and most North-eastern states.
 - 2004-2005: Arizona, California, Florida, Hawaii, and Nevada record price increases in excess of 25% per year.
- ❖ 2005–ongoing: 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 build-up. U.S. Home Construction Index is down over 40% as of mid-August 2006 compared to a year earlier.
 - 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. The subprime mortgage industry collapses, and a surge of foreclosure activity (twice as bad as 2006) and rising interest rates threaten to depress prices further as problems in the subprime markets spread to the near-prime and prime mortgage markets. The U.S. Treasury secretary calls the bursting housing bubble “the most signifi-

cant risk to our economy.”

- February–March: 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.
- 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 .
- 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.
- 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. Ameriquest, once the largest subprime lender in the U.S., goes out of business;
- 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, blamed former Fed-chairman Alan Greenspan's low interest rate policies for stoking the U.S. housing boom and subsequent bust, and Yale University economist Robert Shiller warned of possible home price declines of fifty percent.
- 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.
- September 17: Former Fed Chairman Alan Greenspan said “we had a bubble in housing” 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 point (0.5%) in an attempt to limit damage to the economy from the housing and credit crises.

- 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.
- September 30: Affected by the spiralling mortgage and credit crises, Internet banking pioneer NetBank goes bankrupt, and the Swiss bank UBS announced that it lost US\$690 million in the third quarter.
- October 10: Hope Now Alliance was created by the US Government and private industry to help some sub-prime borrowers.
- October 15–17: A consortium of U.S. banks backed by the U.S. government announced a “super fund” of \$100 billion to purchase mortgage-backed securities whose mark-to-market value plummeted in the subprime collapse. Both Fed chairman Ben Bernanke and Treasury Secretary Hank Paulson expressed alarm about the dangers posed by the bursting housing bubble; 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.”
- October 31: Federal Reserve lowers the federal funds rate by 25 basis points to 4.5%.
- 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 and temporarily freeze the mortgages of a limited number of mortgage debtors holding adjustable rate mortgages (ARM). He also asks Members Of Congress to: 1. pass legislation to modernize the FHA. 2. temporarily reform the tax code to help homeowners refinance during this time of housing market stress. 3. pass funding to support mortgage counselling. 4. pass legislation to reform Government Sponsored Enterprises (GSEs) like Freddie Mac and Fannie Mae. .

❖ 2008:

- March 14, 2008: Bear Stearns gets Fed funding as shares plummet .
- March 16, 2008: Bear Stearns gets acquired for \$2 a share by JPMorgan Chase in a fire sale avoiding bankruptcy. The deal is backed by Federal Reserve providing up to \$30B to cover possible Bear Stearn losses. .
- May 6, 2008 UBS AG Swiss bank announced plans to cut 5,500 jobs by the middle of 2009

Specific Impacts by Firm or Sector

Wall Street investment banks and other financial institutions around the world have also been affected. On June 20, 2007, Merrill Lynch seized \$800 million in assets from

two Bear Stearns hedge funds that were involved in securities backed by subprime loans. The two funds are now essentially worthless.

American Home Mortgage Investment Corporation (AHMI, Melville, New York) filed Chapter 11 bankruptcy on August 6, 2007, after a layoff of its employees the week before. Accredited Home Lenders reported on August 10 that the company expected to see up to a \$60 million loss for the first quarter 2007.

On 8 August 2007, Mortgage Guaranty Insurance Corporation (MGIC, Milwaukee, Wisconsin) announced it would discontinue its purchase of Radian Group (Philadelphia, Pennsylvania) after suffering a billion-dollar loss of its investment in Credit-Based Asset Servicing and Securitization (C-BASS, New York]). C-BASS is seeking to restructure its financing. The MGIC-Radian transaction would have been a \$4.9 billion deal.

Later, on August 9, French bank BNP Paribas stopped valuing three of its funds and suspended all withdrawals by investors after United States subprime mortgage woes had caused “a complete evaporation of liquidity”.

Goldman Sachs' \$8 billion Global Alpha hedge fund, its largest, reportedly lost 26% in 2007. Later, on August 13, the company announced that a group of investors invested more in its Global Equity Opportunities fund by infusing \$3 billion after it lost 28% of its total value in one week. Also, Citigroup has reported taking \$700 million in losses in its credit business in July and August 2007.

On August 14, several media outlets reported that another fund, Sentinel Management Group, suspended redemptions for investors and sold off \$312 million worth of assets. Three days later, Sentinel filed for Chapter 11 bankruptcy protection amid ongoing legal action with respect to this move. US and European stock indices continued to fall. Later that same day Thornburg Mortgage, a jumbo mortgage lender, announced they were delaying their dividend after facing margin calls and disruptions in funding mortgages in the commercial paper and asset-backed securities markets. Thornburg shares fell over 46% in trading on the NYSE.

On August 15, the stock of Countrywide Financial, which is the largest mortgage lender in the United States, fell around 13% on the New York Stock Exchange, its largest one-day decline since the 1987 stock market crash, on fears that the company could face bankruptcy. This comes a day after Countrywide said foreclosures and mortgage delinquencies had risen to their highest levels since early 2002.

Rams Home Loans Group, an Australian lender, announced on August 16 that the company was unable to refinance short-term debt as buyers stayed away from the credit markets. The company said they were unable to sell AUD\$ 6.17 billion of extendable commercial paper, which is the company's largest source of funding for loans. Rams shares fell as much as 41% on the Australian Stock Exchange. A AUD\$ 140 million private sector bailout by Westpac was announced on October 2 due to the lender's inability to refinance its loans. The deal valued Rams at AUD\$0.40 per share.

On August 29 the Australian Hedge Fund, Basis Capital's “Basis Yield Alpha Fund” applied for bankruptcy protection. Investors in the fund are unlikely to get any of their money back as the fund falls under the weight of its exposure to subprime credit in the US.

United States, Asian, and European stock markets also continued to struggle with the turmoil in the credit markets into early September. A report on existing home sales released on September 5 said that the number of Americans buying existing homes had dropped by its largest amount since 2001, when the report first came into existence. Earnings estimates from investment banks such as Lehman Brothers and Morgan Stanley were cut significantly. Homebuilding stocks, such as Lennar and D.R. Horton, continued to decline.

On September 7, a report by the US Labor Department announced that non-farm payrolls fell by 4,000 in August 2007, the first month of negative job growth since August 2003. The number fell well short of expectations, as analysts were expecting payrolls to grow by 110,000. The Dow Jones Industrials fell by as much as 180 points on the news. Cited as a reason for the unexpected weakness in the job market are the problems in the housing and credit markets.

On September 13, British bank Northern Rock applied to the Bank of England for emergency funds caused by liquidity problems. Concerned customers produced "an estimated £2bn withdrawn in just three days".

On October 5, Merrill Lynch announced a US\$5.5 billion loss as a consequence of the subprime crisis, which was revised to \$8.4 billion on October 24, a sum that credit rating firm Standard & Poor's called "startling".

Central Bank Response Timeline

Central banks around the world have begun coordinated efforts of their own to increase liquidity in their own currencies to stabilize foreign exchange rates (thus stemming a further fall in the American dollar and diminishing any incentive to sell them off) and prevent the probable significant global consequences a run on the American dollar would cause. It marks the first time the American, European, and Japanese central banks have taken such actions together since the aftermath of the September 11, 2001 terrorist attacks.

As of August 10, 2007, the United States Federal Reserve (Fed) has injected a combined 43 billion USD, the European Central Bank (ECB) 156 billion Euros (214.6 billion USD), and the Bank of Japan 1 trillion Yen (8.4 billion USD). Smaller amounts have come from the central banks of Australia, and Canada.

Fed injected \$30 billion to ensure the effective Federal funds rate trades at the target rate (it had begun to trade significantly above target). It later injected \$38 billion to lower the effective federal funds rate and continued to inject various amounts thereafter.

The European Central Bank (ECB) injected €61 billion, and the Federal Reserve injected \$68 billion into their respective banking systems on Friday, 10 August 2007 in order to calm their markets, on top of the €95 billion the ECB had injected on Thursday, 9 August 2007. The Federal Reserve further injected \$24 billion into the US financial system that day. On 13 August, the ECB injected another €47.67 billion into the banking sys-

tem and noted that credit conditions were “normalizing” while the Bank of Japan injected another ¥600 billion.

On August 17, the Federal Reserve cut the discount rate by half a percent to 5.75% from 6.25% while leaving the federal funds rate unchanged in an attempt to stabilize financial markets.

A September 5 report by Barclays Capital stated that since the Federal Reserve and European Central Bank had injected funds into their respective financial systems, conditions in the credit market have gotten even worse, not better. The LIBOR rate, the interest rate that banks charge each other rose to 5.72%, the highest it had been in seven years. However, the Beige Book, a survey compiled by the Federal Reserve about business conditions in different parts of the United States, concluded that the credit crunch has had a “limited” impact so far on the rest of the economy .

On September 6, after having already injected billions of dollars over the past weeks, “the Federal Reserve added \$31.25 billion in temporary reserves to the US money markets, the latest move to keep credit markets from drying up.” These reserves are temporary loans to banks, using securities as collateral. The loans must be repaid within two weeks.

December 11th, Fed sets up TAF as an added tool to alleviate financial strain.

APPENDIX 2 - List of writedowns due to subprime crisis

Write-downs on the value of loans,
MBS and CDOs due to the subprime mortgage crisis

| Country | Company | Business Type | Loss (Billion \$) |
|----------------|------------------------|------------------|-------------------|
| Switzerland | UBS AG | bank | \$37.7 bln |
| United States | Citigroup | bank | \$39.1 bln |
| United States | Merrill Lynch | investment bank | \$29.1 bln |
| United States | Morgan Stanley | investment bank | \$11.5 bln |
| France | Crédit Agricole | bank | \$4.8 bln |
| United Kingdom | HSBC | bank | \$20.4 bln |
| United States | Bank of America | bank | \$7.95 bln |
| Canada | CIBC | bank | \$3.2 bln |
| Germany | Deutsche Bank | bank | \$7.7 bln |
| Japan | Mizuho Financial Group | bank | \$5.5 bln |
| United Kingdom | Barclays Capital | investment bank | \$3.1 bln |
| United States | Bear Stearns | investment bank | \$2.6 bln |
| United Kingdom | Royal Bank of Scotland | bank | \$15.2 bln |
| United States | Washington Mutual | savings and loan | \$2.4 bln |
| Switzerland | Swiss Re | re-insurance | \$2.04 bln |
| United States | Lehman Brothers | investment bank | \$3.93 bln |
| Germany | LBBW | bank | \$1.1 bln |
| United States | JP Morgan Chase | bank | \$5.5 bln |
| United States | Goldman Sachs | investment bank | \$1.5 bln |
| United States | Freddie Mac | mortgage GSE | \$4.3 bln |
| Switzerland | Credit Suisse | bank | \$9.0 bln |
| United States | Wells Fargo | bank | \$2.9 bln |
| United States | Wachovia | bank | \$11.1 bln |
| Canada | RBC | bank | \$1.2 bln |
| United States | Fannie Mae | mortgage GSE | \$0.896 bln |
| United States | MBIA | bond insurance | \$3.3 bln |
| Germany | Hypo Real Estate | bank | \$0.580 bln |
| United States | Ambac Financial Group | bond insurance | \$3.5 bln |

| Country | Company | Business Type | Loss (Billion \$) |
|----------------------------|------------------------------|---------------|-------------------|
| Germany | Commerzbank | bank | \$1.1 bln |
| France | Société Générale | bank | \$3.0 bln |
| France | BNP Paribas | bank | \$0.870 bln |
| Germany | WestLB | bank | \$2.74 bln |
| United States | American International Group | insurance | \$11.1 bln |
| Germany | BayernLB | bank | \$6.7 bln |
| France | Natixis | bank | \$1.75 bln |
| United States | Countrywide | mortgage bank | \$4.0 bln |
| Germany | DZ Bank | bank | \$2.1 bln |
| Belgium | Fortis | bank | \$2.3 bln |
| India | ICICI Bank | bank | \$0.264 bln |
| Germany | IKB Deutsche Industriebank | bank | \$3.45 bln |
| Japan | Aozora Bank | bank | \$0.397 bln |
| Germany | Dresdner Bank | bank | \$3.49 bln |
| United Kingdom | HBOS | bank | \$7.06 bln |
| United Kingdom | Lloyds TSB | bank | \$1.32 bln |
| People's Republic of China | Bank of China | bank | \$2.0 bln |
| People's Republic of China | ICBC | bank | \$0.448 bln |

APPENDIX 3 - United States Housing Market Correction

A United States housing market correction is a market correction or “bubble bursting” of a United States housing bubble; the most recent one started in 2005. A real estate bubble is a type of economic bubble that occurs periodically in local or global real estate markets. A housing bubble is characterized by rapid increases in the valuations of real property such as housing until unsustainable levels are reached relative to incomes, price-to-rent ratios, and other economic indicators of affordability. This in turn is followed by a market correction in which decreases in home prices can result in many owners holding negative equity, a mortgage debt higher than the value of the property.

Timeline

Timeline 1985–ongoing

- ❖ 1985–1991: Savings and Loan crisis
 - January 1989: One-month drop sales of 12.6 percent.
 - 1986–1991: New homes constructed dropped from 1.8 to 1 million, the lowest rated since World War II.
- ❖ 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
 - 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
 - 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%.
 - 2002–2003: Mortgage denial rate of 14 percent for conventional home purchase loans, half of 1997

- 2002: Annual home price appreciation of 10% or more in California, Florida, and most North-eastern states.
- 2004: U.S. homeownership rate peaked with an all time high of 69.2 percent.
- 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 build-up. 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.”

Timeline 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. The subprime mortgage industry collapses, and a surge of foreclosure activity (twice as bad as 2006) and rising interest rates threaten to depress prices further as problems in the subprime markets spread to the near-prime and prime mortgage markets. The U.S. Treasury secretary calls the “ongoing housing correction, the most significant risk to our economy.”

- ❖ 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.
- ❖ 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.
- ❖ 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.
- ❖ 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. Ameriquest, once the largest subprime lender in the U.S., goes out of business;
- ❖ September 1–3: Fed Economic Symposium in Jackson Hole, WY addresses the housing recession that jeopardizes U.S. growth. Several critics argue that the Fed should use regulation and interest rates to

prevent asset-price bubbles, blame former Fed-chairman Alan Greenspan's low interest rate policies for stoking the U.S. housing boom and subsequent bust, and Yale University economist Robert Shiller warns of possible home price declines of 50 percent.

- ❖ September 17: Former Fed Chairman Alan Greenspan says “we had a bubble in housing” 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.
- ❖ 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.
- ❖ September 30: Affected by the spiralling mortgage and credit crises, Internet banking pioneer NetBank goes bankrupt, the first FDIC-insured bank to fail since the savings and loan crisis,, and the Swiss bank UBS announced that it lost US\$690 million in the third quarter.
- ❖ September 30: Prices fall 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.
- ❖ October 10: U.S. Government and private industry create Hope Now Alliance to help some sub-prime borrowers.
- ❖ October 15–17: A consortium of U.S. banks backed by the U.S. government announce a “super fund” or super-SIV” of \$100 billion to purchase mortgage-backed securities whose mark-to-market value plummeted in the subprime collapse. Fed chairman Ben Bernanke expresses alarm about the dangers posed by the bursting housing bubble;) Secretary of the Treasury Paulson says “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.”
- ❖ 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 fall 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 prices have fallen.
- ❖ October 31: The Department of Housing and Urban Development adopts new regulations banning so-called “seller-funded” downpayment programs.
- ❖ 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 announces a plan to voluntarily freeze the mortgages of a limited number of mortgage debtors holding ARM's for 5 years. The plan is run by the Hope Now Alliance. Its phone number is 1-888-995-HOPE. Some experts criticize the plan as “a Band-Aid when the patient needs major surgery”, a “teaser-freezer”, and a “bail-out”.
- ❖ 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, 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.

- ❖ 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 prices 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. 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.
- ❖ December 28: The U.S. Commerce Department reports that November 2007 new home sales were down 9% to a seasonally-adjusted annual rate of 647,000, the lowest sales rate since April 1995.

Market correction predictions

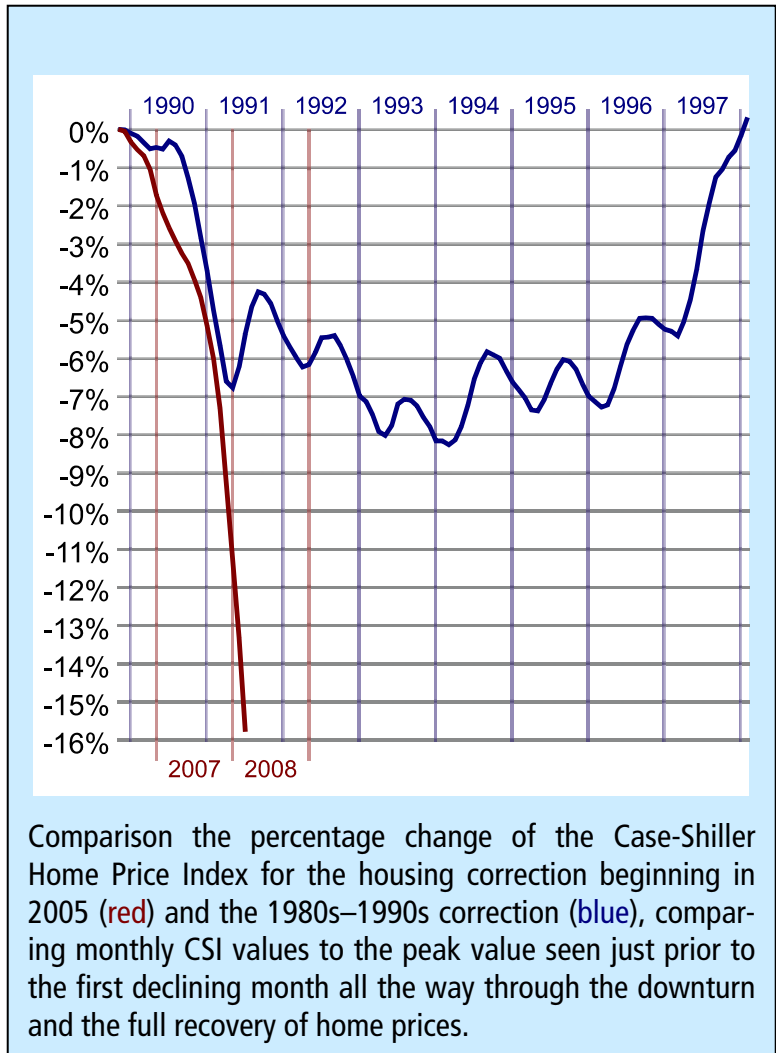
Based on the historic trends in valuations of U.S. housing, many economists and business writers have predicted a market correction, ranging from a few percentage points, to 50% or more from peak values in some markets, and, in spite of the fact that this cooling has not affected all areas of the U.S., some have warned that it could and that the correction would be "nasty" and "severe". Chief economist Mark Zandi of the research firm Moody's Economy.com predicted a "crash" of double-digit depreciation in some U.S. cities by 2007–2009.

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." Fortune magazine labelled many previously strong housing markets as "Dead Zones;" other areas are classified as "Danger Zones" and "Safe Havens." Fortune also dispelled "four myths about the future of home prices." In Boston, year-over-year prices are dropping, sales are falling, inventory is increasing, foreclosures are up, and the correction in Massachusetts has been called a "hard landing". The previously booming housing markets in Washington DC, San Diego CA, Phoenix AZ, and other cities have stalled as well. 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). 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, the value of luxury home builder Toll Brothers' stock fell 50% between August 2005 and August 2006, and the Dow Jones U.S. Home Construction Index was down over 40% as of mid-August 2006. 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.” Homebuilder Kara Homes, known for their construction of “McMansions”, announced on 13 September 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. Six months later on 10 April 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.

As the housing market began to soften in winter 2005 through summer 2006, NAR chief economist David Lereah predicted a “soft landing” for the market. 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. 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 raising ... the effect on the world’s economy could be depressing indeed.” “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. 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.” 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.” 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. The new home market is also suffering. The biggest year over year drop in median home prices since 1970 occurred in April 2007. Median prices for new homes fell 10.9 percent according to the Commerce Department.



Comparison 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.

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. 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. 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.

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. 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.

NAR chief economist David Lereah's Explanation of “What Happened” from the 2006 NAR Leadership Conference

- 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



Figure 7 - Home Sweet Home: cover of the June 13, 2005 issue of Time magazine

Home Sweet Home: cover of the June 13, 2005 issue of Time magazine illustrating the mania for home buying. The appearance of this cover was taken as a sign of the bubble's peak.

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 BosWash megalopolis, and the Southwest 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. The U.S. Treasury Secretary called the bursting housing bubble “the most significant risk to our economy.”

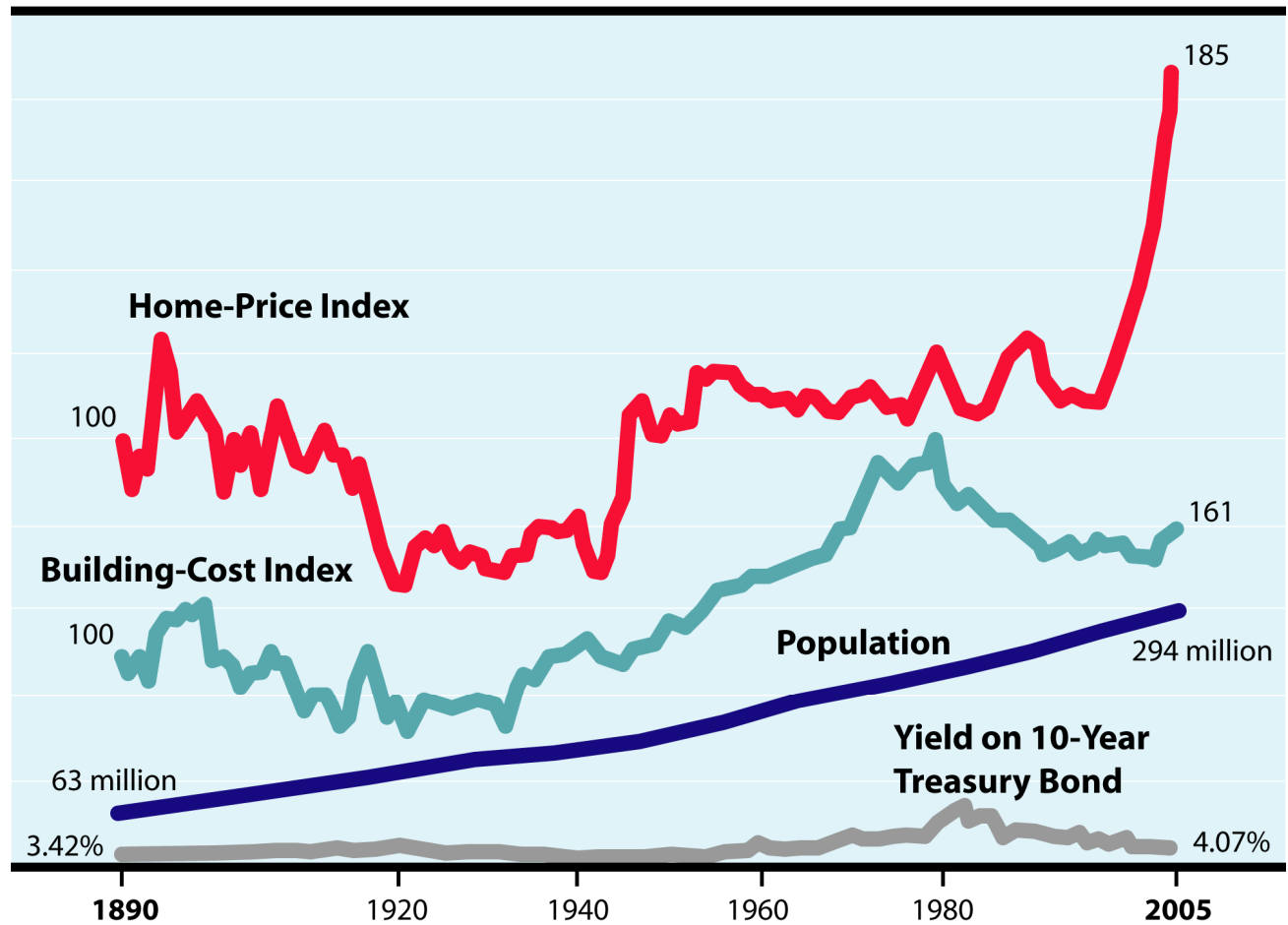
Housing bubbles may occur in local or global real estate markets. They are typically characterized, in their late stages, by rapid increases in the valuations of real property until unsustainable levels are reached relative to incomes, price-to-rent ratios, and other economic indicators of affordability. 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. This bubble may be related to the stock market or dot-com bubble of the 1990s. 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, which began for the U.S. housing market in 2005–2006. Former U.S. Federal Reserve Board Chairman Alan Greenspan said “we had a bubble in housing” 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.” 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”, and concurred with Yale economist Robert Shiller's warning that home prices appear overvalued and that the correction could last years with trillions of dollars of home value being lost. Greenspan warned of “large double digit declines” in home values “larger than most people expect.” 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 sec-

tor 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.” 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. 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. 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.

Inflation-adjusted U.S. home prices, Population, Building costs, and Bond yields (1890–2005)



Source: *Irrational Exuberance*, 2d ed. (Fig. 2.1)

Figure 8 - Inflation-adjusted U.S. home prices, population, building costs, and Bond yields (1890-2005)

Robert Shiller's plot of U.S. home prices, population, building costs, and bond yields, from Irrational Exuberance, 2d ed. 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.

Timeline

See APPENDIX 3 - United States Housing Market Correction Timeline

Identifying the housing bubble

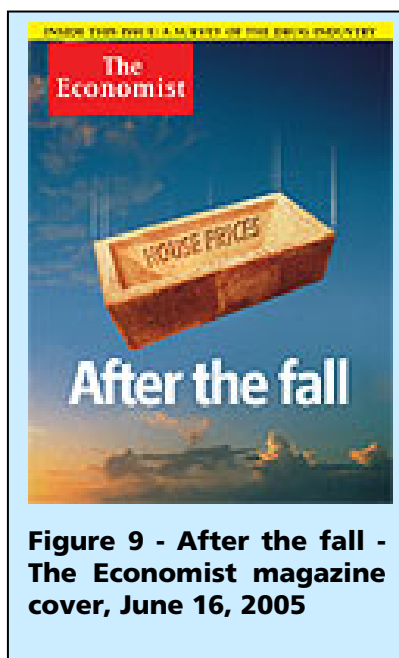


Figure 9 - After the fall - The Economist magazine cover, June 16, 2005

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. The Economist magazine said that “the worldwide rise in house prices is the biggest bubble in history,” 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.” 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.”

Based on markedly declining 2006 market data, including lower sales, rising inventories, falling median prices, and increased foreclosure rates, some economists have concluded that the correction in the U.S. housing market began in 2006. 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.” The chief economist of Freddie Mac and the director of Harvard University's Joint Center for Housing Studies (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. However, some have suggested that the funding that the JCHS receives from the real estate industry may have affected their judgment. 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.” Among other statements, the

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reports say that people “should 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.” Following reports of rapid sales declines and price depreciation in August 2006, 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'.”

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.

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.” 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 neighbourhood with a couple of foreclosures on the block, a couple of auction signs in the yards, that's going to be a neighbourhood that's stigmatized. The innocent houses that just happen to be sitting next to those properties are going to take a hit.”

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”. Following the 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. 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.

Causes

These are the most important causes of the U.S. housing bubble:

- Mania for home ownership
- Belief that housing is a good investment

- Promotion in the media
- Speculative fever
- Crash of the dot-com bubble
- Historically low interest rates
- Risky mortgage products and lax lending standards

Side effects

Unprecedented run-up 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. 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.
- 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.
- 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.
- 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. 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. In March 2008, Thomson Financial reported that the "Chicago Federal Reserve Bank's National Activity Index for February sent a signal that a recession probably begun..."

Share prices of Fannie Mae and Freddie Mac plummet in 2008 as investors worry that they do not have sufficient capital to cover losses on their \$5 trillion portfolio of loans and guarantees on loans.

Housing market correction

See APPENDIX 3 - United States Housing Market Correction

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