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# Understanding the Financial Crisis: Origin and Impact



## Introduction

In 1997, the global economic community suffered a severe downturn spurred by the widespread collapse of the currencies in East Asia. In 1998, global conditions were further strained by a financial crisis in Russia. In 2001, the United States moved into recession following the “dot-com” stock collapse. In 2008, the United States fell again into recession following a rapid decline in housing prices and a consequent rapid contraction in credit.<sup>1</sup> Is the regularity of these events just bad luck? Partially, yes. However, there is a logic that connects them, and understanding the current crisis requires a look back at earlier events.

## Background Issues

Since the early 1980s, the global economy has seen a rapid expansion in the availability of savings due in great part to the rapid economic growth of East Asian economies. Because the U.S. economy has historically been viewed as a financial “safe haven” – a safe place for foreign citizens to bank their savings – foreign citizens have often moved their savings to the United States. The financial crises and dislocations of the 1990s enhanced the perception of the United States as a safe haven.<sup>2</sup> Important to the current crisis, the movement of savings from abroad into this country significantly increased the financial base of the U.S. economy in the 1990s and the early part of this decade.

During the 1990s, the United States was in a globally dominant economic position. This led the federal government and the central bank – the Fed – to act as a global guarantor of economic stability. This was seen in U.S. backing of Mexican debt in 1995 and with the Fed’s significant injection of money into markets following global crises. Unfortunately, these tools were blunt. While they aided the foreign community (and the U.S. economy through greater global stability), these actions tended to again increase the financial funds available in the United States.

Also during the 1990s, and continuing into this decade, the United States ran very large trade deficits. While the cause of these deficits is subject to various

**Dot-com stocks** refer to the technology company stocks that drove the stock market increases of the late 1990s.

A **recession** is a widespread downturn in economic activity.

**Credit** refers to the availability of funds for loans.

A **financial safe haven** is an economy in which foreign citizens may bank their savings dollars with minimal risk of loss.

**The Fed** is an abbreviation for the Federal Reserve Banking System. Since 1913, it has served as the central bank of the United States and is broadly responsible for determining the amount of money in circulation in the U.S. economy.



causal interpretations, the consequence is clear. Any continuing trade deficit must be balanced over time by a net inflow of financial capital from abroad. These inflows again increased the availability of financial assets in the United States

Compounding the complexity of absorbing these financial assets was the significant move toward deregulation throughout the U.S. economy starting with the Carter Administration. During the 1980s and 1990s, deregulation moved into the banking industry and allowed for rapid changes in how banks did business. Two particularly noteworthy changes were the partial revocation of the Glass-Steagall Act in 1980 and 1999, and the significant decreases in restrictions on the formation of interstate branch banking operations. These changes increased the range of activities banks were allowed to engage in and reduced the personal connections between bankers and borrowers. While it would be foolish to conclude that these innovations were universally wrong, the rapidity of their introduction did not allow for a sufficient period of time to develop tools to manage new risks. In retrospect, it is clear that downside risks were underestimated (first in dot-com stocks, second in housing, then in financial derivatives). The introduction of these innovative products, combined with the increased monetary base to fund them, allowed for the consequences of poor risk control to be significant.

Finally, the Financial Accounting Standards Board changed asset-pricing standards effective November 2007. This change introduced “mark-to-market” asset valuation requirements on capital assets. As discussed below, the change in accounting standards served to worsen the credit crisis during 2008.

### Key points

- Foreign savings flowing into the United States made borrowing inexpensive.
- Loose domestic policies made borrowing inexpensive.
- Banking consolidation allowed banks to increase lending.
- Banking deregulation weakened oversight of banks.
- Changes in accounting rules were implemented during the early part of the crisis.

A **trade deficit** exists when imports exceed exports.

**Deregulation** is a reduction in government regulations of business operations.

A **financial derivative** is a financial asset that's value is based on some other financial asset; for instance, a stock option.

The **Financial Accounting Standards Board** determines accounting standards for the United States.

**Mark-to-market** requires assets to be valued at the theoretical market determined price (rather than purchase price or historic value).



## Housing Price Run-Up

Throughout this decade, many people expressed concern about the rapid pace of growth in housing prices. This was a legitimate concern. Between 1994 and 2006, the average price of a single family home increased by almost 200 percent.<sup>3</sup> The fuel for this growth was (1) inexpensive mortgage rates,<sup>4</sup> (2) reduced adherence to banking rules in the mortgage industry, and (3) changes in consumer expectations. Consider these items in turn.

For most people, purchasing a house is a joint purchase – both a house and a mortgage are purchased. Basic economic theory shows that when the price of one good in the pair falls, the demand for the other good increases. Hence, the fall in mortgage rates funded by the factors discussed above serves as the first impetus to rising housing prices.

Further, deregulation of banks changed banking practices. Initially, this was seen in the widespread movement to branch banking and bank consolidation. This has important ramifications for banking practices. Fifty years ago, the neighborhood banker was the primary source for credit. Further, that banker personally knew many of his customers. This offered a casual information channel by which a banker could assess risk. The introduction of larger branch banking institutions eroded this information channel.<sup>5</sup>

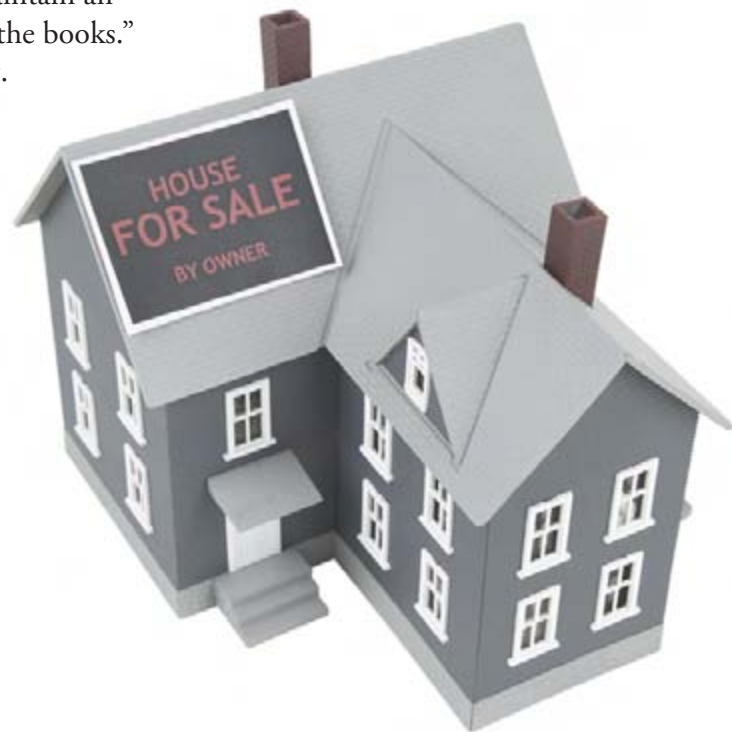
Unfortunately, as the casual information channel was being eroded, the incentive structure within the financial sector further changed. Historically, the issuer of a mortgage was likely to maintain an equity stake in that mortgage – it would remain “on the books.” Financial sector deregulation changed that constraint. Banks and other financial institutions introduced numerous financial derivatives (for instance, Collateralized Debt Obligations – CDOs) that allowed mortgages (and other types of debt) to be packaged and re-sold (and as time went by, re-sold again). This reduced the need for lenders to practice quality oversight – if a loan went bad, it would no longer belong to them. With the growth in foreign savings in the United States and too much domestic money, lenders found many ready

With a **joint purchase**, one item is only purchased with another; the items are referred to as complementary goods.

An **information channel** is a means by which information is obtained.

By maintaining an **equity stake**, bankers keep at least partial ownership of mortgage loans.

A **bad loan** is one that the borrower will not be able to repay.



buyers of this repackaged debt. Mortgage turnover increased as lending practices became increasingly weak.

More important for housing prices as mortgage debt became more easily available, new buyers of housing entered the market – the “subprime” borrower. The influx of these new borrowers who would traditionally not have had access to loans, further spurred housing demand.

Finally, consumer expectations changed as housing prices rose; consumers came to expect housing prices to continue to appreciate at a high rate. This encouraged the entrance of new real estate speculators into the market. These new buyers again drove up housing demand and continued to propel the upsurge in housing prices. This final speculative demand – when piled onto the other forces driving an upsurge in housing prices – formed a housing price bubble.

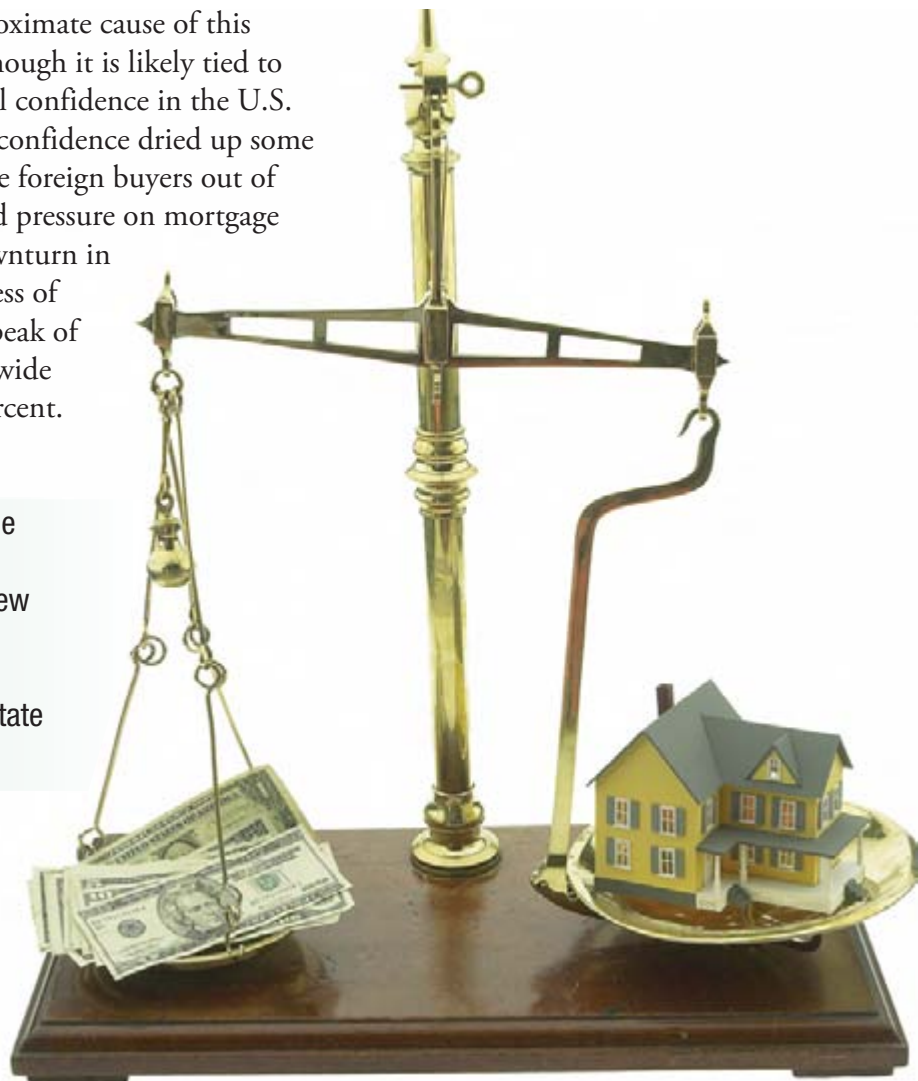
If asset price bubbles never burst, they would not be of concern. Unfortunately, they always do. The proximate cause of this downturn has not been determined, though it is likely tied to the notable decline in the international confidence in the U.S. economy starting in 2006. The fall in confidence dried up some of the foreign savings and pushed some foreign buyers out of the housing market, which put upward pressure on mortgage interest rates and likely started the downturn in the housing market. However, regardless of cause, the effects are clear – since the peak of housing prices in July of 2006, nationwide housing prices have declined by 21 percent.

### Key points

- Cheap mortgages drove up home prices.
- Banking deregulation allowed new potential borrowers to enter the housing market.
- Households began using real estate as a speculative asset.

**Subprime** borrowers do not have the credit history, income, or down payment traditionally required to obtain a mortgage.

An **asset price bubble** forms when the value of an item (for instance, a house) is significantly above the long-run sustainable price of the asset. Typically, a price bubble forms during a period of speculative buying.



## Credit Crisis

The credit crisis is a direct outgrowth of the fall in housing prices that began in 2006. While many channels exist by which the housing prices enter the financial sector, the core connection is straightforward. Every bank or other financial entity in the United States is required to have capital assets backing its loans. As a rough approximation for every \$10 in loans issued by a commercial bank, a bank must have \$1 in capital assets. With the introduction of financial derivatives, financial entities widely used mortgage-backed securities as a share of the capital backing their operations. As housing prices decline, the value of mortgage-backed securities decline. Because banks' capital assets are declining in value, they must issue fewer loans. The tightening of credit conditions necessitated by this logic starts a downward spiral.

First, tighter credit narrows the market for housing. The fall in demand begins pushing housing prices further down. Recent buyers of houses begin to find they owe more on a house than the house is worth (negative equity); this encourages them to walk away from mortgage obligations and foreclosures increase. As foreclosures increase, the value of properties next to foreclosed houses declines. This pushes more homeowners into a situation of negative equity.

Second, the continued decline in housing prices further reduces the value of mortgage-backed financial derivatives. As they decline, credit conditions further tighten. This becomes an increasing problem as variable rate mortgages begin to reset. Those who were planning to refinance prior to the interest rate reset find they are unable to do so; regrettably, some also find that they are unable to afford the now higher payments. Another round of foreclosures ensues.

This cycle continues until the capital assets are fully re-priced (we are not there yet), stopping the continued contraction in lending. This contractionary cycle is made more severe by requirements to “mark-to-market.” With mortgage-backed derivatives falling in value, the market for these assets has effectively disappeared;

**Capital assets** are the cash, real estate equity, stocks, bonds, or financial derivatives owned by a financial institution that determine the owners' equity and that establish its financial security.

**Mortgage-backed securities** may be mortgages or financial derivatives based on mortgages (e.g., CDOs).

**Negative equity** exists when the value of an asset (a home) is less than what is owed on that asset.

A **foreclosure** occurs when a homeowner defaults on making payments on his/her mortgage and ownership reverts to the lender.

With a **variable-rate mortgage**, the interest rate on the loan resets (typically to a higher rate) over time.

A **refinanced loan** is one in which the original loan is paid off through the issuance of a new loan with new terms for payment



as such, the market value of these assets is close to zero (though they can realistically be expected to rebound in value within five years). However, if valued at zero now, the extent of the credit constriction must be more severe.

Because the housing market and mortgage-backed derivatives were the early locus of the problem, the discussion above broadly focused on those areas. Unfortunately, the crisis spirals outward from those sectors. As credit conditions tighten, consumer loans, loans for business operating expenses, and loans for corporate expansion become increasingly difficult to obtain. This drives down the sales of many items and forces many otherwise well-functioning firms into failure. The effects of this broader downturn are currently being seen in markedly higher rates of unemployment. If the collapse in credit becomes significant enough, it could spiral the economy into a serious economic downturn. For historical comparison, the last time credit conditions became this poor was during the Great Depression (though the contraction then was greater AND there were other contributing issues to the Great Depression that are not currently present). Another way of looking at it, the current credit issues are about three times greater in extent than the Savings and Loan Crisis of the 1980s (though it will not be surprising if the extent of the crisis grows).

### Key points

- Falling asset values forced fewer loans to be issued.
- Fewer loans reduced the demand for housing; this reinforced the initial decline in home prices.
- Reduced lending constrained production throughout the economy.

**Business operating expenses** refers to the daily expenses (for example, payroll) that a business must cover. Commonly, businesses cover these expenses through a line of credit.

The **Savings and Loan Crisis** was caused by a similar surge in housing prices and loose lending practices. However, fewer regions of the economy saw house price increases and lending was constrained to one small portion of the financial industry.



## Fixes and Lessons

Fixing the credit crisis will not be easy. On October 3, 2008, the Emergency Economic Stabilization Act (EESA) became law.<sup>6</sup> This law, along with the earlier interventions, is directed at stopping the downward slide in loan availability by shoring up the capital assets backing lending. Effectively, this bill gives the Treasury Department the charge to buy capital assets that are currently becoming worthless in exchange for government debt (though debt exchange is not the sole option). Because U.S. government debt is effectively without risk, a continued fall in capital asset values by financial institutions is avoided. Unfortunately, this requires transferring these risky assets to the government, which points to two key concerns with the legislation. First, will it work? Second, how much will it cost? Neither question can be answered now. We will know if the intervention worked two years from now – if it does, the economy will have recovered. Answering the second question will take more time. The purchases under EESA will total roughly \$700 billion.<sup>7</sup> But, the government gets something in exchange – the risky assets. If these assets continue to fall in value, the cost of the bailout will be close to the cost of the purchases (worse – this is most likely to occur if the bailout did not work). However, if the assets begin to perform again as the markets stabilize, the government should be able to recover a significant portion of the \$700 billion.

A final concern about the bailout links to the notion of “moral hazard.” Moral hazard arises when offering protection from a negative outcome increases the likelihood of future bad outcomes. To see this concern, consider the following scenario. Suppose the bailout works and works well. Further, suppose that the remaining financial firms come through the downturn with minimal harm. What lesson will these firms have learned? First, that the government will shield them from the cost of poor management of risk. Second, that the protection will leave them without damage in the long run. If this is the case, what would a business do that saw a great – though risky – chance for profits 10 years from now? Would it be more likely to pursue this end? If so, the current bailout merely sets the stage for future crises.<sup>8</sup>

The **Treasury Department** manages financial affairs, including the issuance of debt, for the federal government.

**Moral hazard** exists when offering protection from a negative outcome encourages more of the behavior that leads to the negative outcome.



What lessons can be learned from this crisis? First, no single factor caused it. Lenders, borrowers, and regulators are all at fault – lenders through poor risk management, borrowers through excessive borrowing and over-valuation of real estate, and regulators through lax enforcement of the financial sector. Second, given that this is the second speculative bubble to have formed and burst in the United States in the past 15 years, better financial risk management is required. However, better risk management is not easy. The globally interconnected economy is more complex than the economy of 50 years ago. Until our management mechanisms improve sufficiently to better quantify the new and little understood risks of this economy, households, businesses, and government must tread more carefully. Perhaps twice burned will be sufficient to teach this lesson.

### Key point

- The value of assets held by banks must be restored so that they can resume lending.



## Footnotes

- <sup>1</sup> Technically, the U.S. economy is not officially in a recession at the time this document is written (early October 2008). However, it is likely that the Business Cycle Dating Committee of the National Bureau of Economic Research will date a recession as having started sometime during 2008. For more information, see <http://www.nber.org/cycles/recessions.html>.
- <sup>2</sup> These events include the movement to the euro in Europe, the Mexican peso crisis in 1994-95, the previously mentioned financial crises in East Asia in the late 1990s, and the Russian crisis in 1998.
- <sup>3</sup> Housing market price changes are calculated from the Case-Shiller Housing Price Index.
- <sup>4</sup> Conforming 30-year mortgage rates averaged 5.7 percent between 2003 and 2005.
- <sup>5</sup> This should not be taken as an argument against branch banking that offers both lower interest rates to borrowers and higher profits to the banks. However, the loss of this information channel spurred the need for better risk-management tools.
- <sup>6</sup> In the short time since its passage, discussions have already begun alter the EESP. Therefore, the final nature of the government action is unlikely to be known for some time.
- <sup>7</sup> This figure does not include previous expenditures tied to the interventions with AIG or Bear Stearns.
- <sup>8</sup> It is worth noting that the same cautionary tale can be told from the mortgagee side. Borrowers who are bailed out through government action may be made equally likely to over-borrow in future periods.

