

# **The Subprime Crisis and the Effects on the U.S. Banking Industry**

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*Over the last 30 years the U.S. retail and investment banking systems have become enormous. The largest banks in the U.S. have a hand in almost all financial transactions. This has made the recent credit crunch a worldwide contagion. Individuals and institutions have found it harder than ever to finance purchases or projects. In order to understand how we got to this point, one must understand: the development of the housing bubble, the parties involved in the creation of it, and the misaligned incentives that exasperated the problem. These parties include: mortgage lenders, investment banks, and credit rating agencies. A series of misaligned incentives existed throughout the network which linked these three parties. These incentives encouraged the development of a housing bubble, whose pop prompted a worldwide financial crisis.*

According to experts, credit is the lifeblood of an economy. Both firms and individuals find it hard to make large purchases without the use of credit. Credit is simply defined as: "Money loaned" by Forbes Magazine's web site ("Credit", 2009). In the United States, much of this money is loaned by the U.S. banking system.

Traditional banks make their money by holding savings for individual or institutional clients and then either investing this money or loaning it to other clients. In investment banks the process is more complicated but the concept is consistent: banks borrow money at one interest rate and then lend or hope to invest it at a higher interest rate. When markets are rising and delinquencies on loans are low, banking is a very prosperous business. When markets are falling and delinquencies are high, banks begin to lose money and therefore become more reluctant to loan the money they still have. The second scenario is very similar to the circumstances facing banks right now.

During the 1990s, a new type of mortgage loan originated: the subprime mortgage (O'Quinn, 2008). Subprime mortgages are extended to customers with less than favorable credit scores or customers with income levels below the approved income requirement. They are intended to get potential home buyers into homes that they cannot currently afford but should be able to afford in the future. Subprime mortgages are not inherently evil, if the lenders are prudent about whom they extend credit to. Without prudence, subprime mortgages can be very risky. Subprime borrowers are understandably more prone to default on their loans, as large numbers of them have done over the

The Subprime Crisis and The Effects on the U.S. Banking Industry  
last two years.

## The Process

### *Lenders*

The lenders, or the originators, were a crucial part of the recent financial meltdown. After the bursting of the dot-com bubble, the Federal Reserve lowered interest rates considerably in an attempt to stimulate lending. The strategy was successful. In Robert P. O'Quinn's "The U.S. Housing Bubble and the Global Financial Crisis: Vulnerabilities of the Alternative Financial System" (2008), he writes:

Total credit outstanding including total debt securities outstanding in U.S. credit markets and total loans and leases at U.S. depository institutions grew from \$17.087 trillion (equal to 205.8 percent of GDP) on December 31, 1997 to \$38.324 trillion (equal to 276.8 percent of GDP) on December 31, 2007. (p. 5)

The amount of credit outstanding more than doubled, but it is more critical that the growth of credit outpaced the growth GDP. This much growth in lending is not sustainable by lenders alone.

### *Investment Banks*

It would have been impossible for lending to increase at such a fast rate if the lenders were required to keep every loan on their books. In order to extend as many loans as possible, lenders would only hold loans temporarily before selling them to investment banks. The investment banks, or the issuers, would then package the loans together and sell them. These packages are called special purpose vehicles and have fixed interest rates. Types of special purpose vehicles include: asset-backed securities (ABS), residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt-obligations (CDOs), and collateralized mortgage obligations (CMOs) (O'Quinn, 2008, pp. 8-9).

### *Credit Rating Agencies*

Once thousands of mortgage loans or other receivables were packaged together into these special purpose vehicles, they were sent to credit rating agencies. It is the credit rating agency's role to analyze the riskiness of the security. Credit rating agencies work outside the special purpose vehicle industry as well. Credit rating agencies work in many markets to assess the riskiness of any debt instrument, primarily analyzing the risk involved with bond issuers. After analysis, the credit rating agencies then rate the debt instrument; a triple-A rating is typically the highest. A triple-A rating indicates to an investor that the investment is very safe. Many of these very complicated special purpose vehicles were stamped with triple-A rating, even though the origin of their

contents was not necessarily clear to the credit rating agencies.

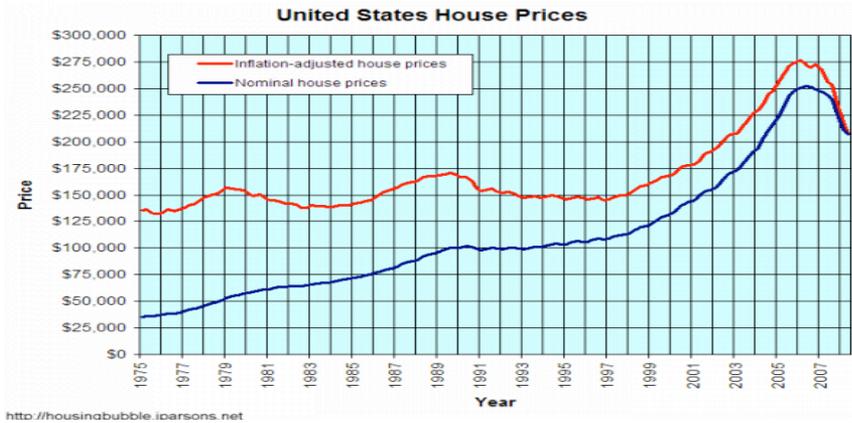
### Buyers

Once packaged and rated, the investment banks would then market the securities to their clients. Investors in the securities included: hedge funds, global investment banks, pension funds, government entities, as well as retail banks. Retail banks were also oftentimes originators of the loans. In the documentary, "House of Cards", CNBC reported that 50% of the securities were sold to clients outside the United States. This is one reason that the economic downturn has not been contained in the U.S.

### Housing Bubble

The result of this sequence of events was a price bubble in the United States housing market. As Figure 1, which was originally compiled by Robert Shiller but was obtained from lesjones.com, indicates below:

Figure 1



The inflation-adjusted average U.S. housing price only grew from about \$130,000 in 1975 to \$150,000 in 1998. This is only a 0.67% annual growth rate against inflation. Comparably, prices increased from \$150,000 in 1998 to \$275,000 in 2006; a 10.4% annual growth rate. This astronomical growth was caused by an increasing pool of home buyers due to lowered lending standards. The rising price can be explained by the classic supply and demand model: the supply of homes was rising at a slower rate than the demand for homes was growing. The quick jump in home prices from 1998 to 2006 was unprecedented and can largely be attributed to a few misaligned incentives. Such a large deviation from the mean growth rate is hard to sustain, and in the second quarter of 2006 home prices began to fall.

## Magnifying Factors

### *Skin in the Game*

The first of these misaligned incentives is the separation of risk from lenders. Lenders were not required to keep any portion of the loans they issued on their books. This caused many lenders to lend recklessly, without regard for whether the borrower would default on their loan (O'Quinn, 2008, p. 21). Issuers did attempt to have mortgage lenders buyback loans that defaulted in a short period of time, but many of the lenders did not have the capital to buy them back and simply went bankrupt.

"Skin in the game" is referring to lenders keeping a portion of the loan on their books, as many auto lenders are required to do. This would give the lenders incentive to act responsibly when evaluating potential loans (O'Quinn, 2008, p. 21).

### *Issuer Pays*

There were also incentives in place for credit rating agencies to act irresponsibly. Credit rating agencies are paid by the issuer, the company who securitizes and then sells the loans. This provides reason to stamp large investment banks' securities with superior ratings, to keep the largest clients satisfied. When discussing Moody's, a large credit rating agency, O'Quinn (2008) writes: "In 1996, Brian Clarkson took over the Moody's division responsible for rating mortgage-related debt securities and began making it 'more client friendly and focused on market gain' from the other rating agencies" (p. 22).

### *Up Front Incentive Plans*

Also contributing to the problem is the incentive compensation plans within investment banks. Bonuses are awarded to employees for transaction volume (selling as many securities as possible) and earnings on investments (using leverage to engage in risky investments). In an interview with *Forbes Magazine* (2008), Franklin Allen is quoted:

So if you look at some of these institutions like Bear Stearns, which started taking big risks—they wanted to develop risk-taking cultures—then in the good times they made inordinate amounts of money. In the bad times, it's other people who are picking up the bills.

Executives at investment banks are aware of the flaw in their compensation system. However, executives acting individually are unable to change the system. If an executive changes his or her compensation system without the cooperation of other executives in the industry, he or she runs the risk of losing his or her best talent. A change will only occur if executives act cooperatively to reform the system (O'Quinn, 2008, pp. 22-23).

## Repercussions

Collectively these factors combined to create a perfect storm in the housing market. Prices soared to unprecedented levels before beginning to tumble back to real market value in the second quarter of 2006. As home prices fell and borrowers got further into their payments, delinquencies began to rise. Loans began to go bad, creating a wave of panic across the financial world, as no one knew who held the bad loans and who held the good loans.

The panic really began in the summer of 2007 when Bear Stearns and BNP-Paribas announced that some of their hedge funds had lost considerable value due to exposure to subprime mortgages. This created a realization among institutions worldwide; their bulletproof U.S. mortgage-backed securities may not be safe investments. Suddenly everyone wanted to sell mortgage-backed securities and no one wanted to buy them. This sent prices plunging, until the market was essentially frozen (“Timeline: Banking Crisis”, 2008).

Because of the sharp drop in the value of mortgage-backed securities, investment banks and retail banks were forced to write-down losses on securities they were holding. This resulted in large losses across the banking industry in the third and fourth quarters of 2007. On March 16, 2008 the crisis intensified when Bear Stearns collapsed. Nearly six months passed before Lehman Brothers filed for bankruptcy on September 14, 2008, suggesting again that the crisis was broader than expected (“Timeline: Banking Crisis”, 2008).

## Current Situation

Since the bankruptcy at Lehman Brothers, no other large American banks have folded but fear still abounds. Banks are afraid to lend because they cannot sacrifice capital if further write-downs occur. Since banks are afraid to lend, neither businesses nor households are able to borrow, therefore both are putting big purchases on hold and businesses are laying-off workers. In the fourth quarter of 2008, the banking industry announced a \$26 billion loss, the first industry loss in 19 years (Moyer, 2008).

Hoping to subdue fears and sort through the banking mess, Treasury Security Timothy Geithner announced that stress tests will be conducted. Although details are unclear, experts feel that banks will be evaluated on their capital ratios. The capital ratio is a bank’s capital divided by the risk weighted assets. The higher the ratio the more secure the bank is likely to be (“Stress-test Mess”, 2009).

These speculations have taken a toll on Bank of America and Citigroup’s stock values. Both are viewed as the most likely to fail Geithner’s tests because of low capital ratios. Between February 16 and 20, 2009, Bank of America and Citigroup’s stock fell by 32% and 44% respectively (“Banks Under Stress”,

2009). Lower stock prices create even more problems for the banks. With stock values lower, they are unable to raise as much capital through potential equity issuances. Many are speculating that some form of nationalization is inevitable for these two.

### Conclusion

There is still a great deal of uncertainty concerning the U.S. financial system. Because banks have begun to slow lending, the contagion has spread into the economy as well. Both individuals and institutions have lost large sums of money in financial markets over the last two years or so. This loss of wealth coupled with the loss of availability of credit has caused many households to cut back on spending. With consumers slow to spend, even the businesses with capital to spare are slow to produce and invest in innovation.

Lawmakers are attacking the problem on two fronts. One goal is to reinstate confidence among consumers and businesses. The government's remedy for this problem is the economic stimulus package passed in February. The other problem is shoring up the U.S. banking system. This may be a more complex problem because the financial system is so opaque. The Federal Reserve has exhausted all of its traditional measures, and anything done within the banking system from here is new territory for Americans. All Americans can do is hope that government officials and banking executives will act responsibly to free up lending, so that the credit markets can return to normalcy.

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