

Ouachita Baptist University

## Scholarly Commons @ Ouachita

---

Honors Theses

Carl Goodson Honors Program

---

2012

### Bailing Out America: An Honors Thesis Addressing the Bailout and Financial Crisis of 2008

Reuben Cash

*Ouachita Baptist University*

Follow this and additional works at: [https://scholarlycommons.obu.edu/honors\\_theses](https://scholarlycommons.obu.edu/honors_theses)



Part of the [Business Administration, Management, and Operations Commons](#), [Corporate Finance Commons](#), [Economic History Commons](#), [Economic Policy Commons](#), and the [Political Economy Commons](#)

---

#### Recommended Citation

Cash, Reuben, "Bailing Out America: An Honors Thesis Addressing the Bailout and Financial Crisis of 2008" (2012). *Honors Theses*. 35.

[https://scholarlycommons.obu.edu/honors\\_theses/35](https://scholarlycommons.obu.edu/honors_theses/35)

This Thesis is brought to you for free and open access by the Carl Goodson Honors Program at Scholarly Commons @ Ouachita. It has been accepted for inclusion in Honors Theses by an authorized administrator of Scholarly Commons @ Ouachita. For more information, please contact [mortensona@obu.edu](mailto:mortensona@obu.edu).

## SENIOR THESIS APPROVAL

This Honors Thesis Entitled

“Bailing Out America”

Written By

Reuben Cash

And submitted in partial fulfillment of the requirements for completion of the Carl Goodson Honors Program meets the criteria for acceptance and has been approved by the undersigned readers.

Dr. Phil Rice, Thesis Director

Dr. Marshall Horton, Second Reader

Dr. Randall Wight, Third Reader

Dr. Barbara Pemberton, Honors Program Director

Spring Semester 2012

THE CARL GOODSON HONORS PROGRAM AT OUACHITA BAPTIST UNIVERSITY

# Bailing Out America

---

An Honors Thesis Addressing the Bailout and  
Financial Crisis of 2008

**By Reuben Cash**

**Spring 2012**

This paper is the final part of an honors thesis study undertaken by Reuben Cash, a senior as of the publication date and member of the Class of 2012 at Ouachita Baptist University.

The research and writing of this paper was completed throughout Cash's undergraduate career from Fall 2008 until Spring 2012. Each Spring semester since 2009, Cash has presented a portion of this paper at the Carl Goodson Honors Program Scholar's Day event at Ouachita Baptist University. The entirety of the research from all four years is contained in this document, representing the fulfillment of the requirements to graduate with honors program completion from Ouachita Baptist University.

This paper represents the intellectual property of Reuben Cash. All rights are reserved.

Please direct comments, concerns, and questions to Reuben Cash at the following email address: [hebrews136life@gmail.com](mailto:hebrews136life@gmail.com)

Published 2012 at Ouachita Baptist University in Arkadelphia, Arkansas.

## Abstract

This paper analyzes the financial crisis of 2008 and the resulting government intervention of the Troubled Asset Relief Program, or more generally called “the bailout.” Beginning with historical context of past interventions, it sets forth an understanding of the economic environment of 2008. After explaining the mechanics of the financial crisis, it proposes that the reinsurance products underlying the financial markets in 2008 were based on unsound accounting and risk management principles. Based on this proposition, the representational faithfulness and fairness of mark-to-market accounting principles are examined. The paper concludes that a short-term financial focus is largely to blame for the crisis, while the government bailout intervention itself was helpful in remediating the adverse situation.

## Table of Contents

<b>Abstract</b> .....	4
Table of Contents .....	5
<b>Introduction</b> .....	6
Part I: Historical Background .....	8
Part II: The 2008 <b>Crisis</b> .....	14
Part III: The Birth of TARP .....	25
Part IV: Analysis of TARP .....	31
Timeline .....	37
Part V: The Short- <b>Term</b> .....	38
Part VI: Conclusions on TARP .....	41
<b>Appendices</b> .....	46
Appendix I: <b>Mark-to-Market Accounting</b> .....	46
Appendix II: Credit Default <b>Swaps</b> .....	53
Appendix III: Naked Puts .....	57
Appendix IV: Fundamental Values .....	60
Appendix V: Other Bailout Activities of <b>Note</b> .....	63
<b>Sources</b> .....	66

## Introduction

During a five month period from October, 2008 through February, 2009, Congress passed and the President signed into law two controversial and unusual legislative tomes. First, the Troubled Asset Relief Program (TARP), part of the Emergency Economic Stabilization Act of 2008, became law on October 3, 2008. Second, the American Recovery and Reinvestment Act of 2009 was passed on February 17, 2009. The purpose of TARP was to prevent the collapse of the U.S. financial markets. The Recovery Act provided appropriations for a variety of economic stimulus activity, especially through creation of employment.

The focus of this paper is on the financial crisis of 2008 and the resulting government intervention intended to reclaim the economy through stabilizing the financial markets. Thus, the TARP bailout is the primary intervention to be considered. The subsequent intervention of the Federal Reserve and the United States Treasury, among other entities, in the U.S. financial markets represented the application of a controversial economic idea: that the government can successfully step in to stave off the collapse of financial markets and institutions with a bailout. Is this idea correct?

While the measures of the bailout's success are subjective, a conclusion can still be reached. This is especially true with the benefit of nearly four years to help analyze and understand economic changes. This paper concludes that the bailout has done more to help the economy as a whole than to hurt it. Certainly, mistakes were made in the execution of the government intervention. However, on the whole, both Main Street and Wall Street have benefitted from TARP and the outcropping interventions that were executed.

These statements do not mean that the underlying problem has been solved. On the contrary, the financial crisis of 2008 has shown that the short-term focus of U.S. financial markets and institutions can have disastrous consequences. It is this short-term focus that is the root cause. While the economy has moved beyond imminent financial collapse with the bailout's help, the causal obsession with the short-term still remains. If the reader gains one point from this paper, let it be this:

*An inordinate focus on the short-term is financial suicide.*

## Part I: Historical Background

Placing an economic event in historical sequence is challenging. Clearly classifying historical events as causal factors or as events that result from these factors is an important distinction. Determining whether market behavior subsequent to an economic crisis has been changed to a statistically significant level is difficult because economics tracks a continual flow (the production and consumption choices of society and individuals) rather than a series of unrelated, isolated events. Thus, there are two possible outcomes of historical examination. It is possible that historical events such as the Great Depression and the Savings and Loans crisis are merely resurfacing in a new form with the onslaught of bank failures and the economic contraction like that of 2007-present. Otherwise, one may hold that the current economic situation bears no relationship other than great similarity with events of the past. In this case, the economic flow no more connects particular events than a rug connects the furniture sitting on it. Nevertheless, similarity alone can bring great lessons. Therefore, a thorough examination of events leading up to the current bailout should prove essential to gaining a grasp of our current state of economic rescue affairs.

The Great Depression was a turning point toward our modern economy. After the stock market crash of 1929, free markets lost much of their omnipotent status as self-regulators. Government spending intervention, according to the theories of John Maynard Keynes, began to be considered acceptable, if not essential, during times of severe economic slowdown. During the Depression, the Dow Jones Industrial Average fell 89% and unemployment reached 25%. This makes today's levels look like an economic boom. Could these levels be reached again? Experts differ in opinion:

*"[Today's crisis] is similar [to the Depression] in that it's a worldwide crisis and there are many financial institutions in deep trouble. In the 1930s, 1930 to '33, we lost something like 7,000 or 8,000 banks. We have the potential to do something like that now, but I think we're going to avoid it."* -Richard Sylla, New York University

*"The world has looked at us for years as the pioneers of financial engineering... Suddenly, it looks like not only did we overstep, but we can't even sustain that system. We're going to close that system down. That would seem to me to be a huge, huge change in America's economic position in the world "- Paul Solman, NewsHour correspondent [77]*

As the U.S. economy was continuing to languish under President Hoover's administration in 1930 and 1931, Franklin Roosevelt successfully campaigned on the Keynesian public works spending platform of the New Deal. In today's crisis, the U.S. government has chosen to traverse previously uncharted lengths of interventionism with its bailout legislation. This expedition is prompted by fear of markets being unable to save themselves. Similarly, Roosevelt intervened to an unprecedented level in his day through pouring money into public works: the Civilian Conservation Corps, the Tennessee Valley Authority, and the Works Progress Administration. These organizations increased employment by over 10% at a large taxpayer expense. [8] [9] [10]

The most relevant Great Depression era entity for purposes of comparison with modern bailouts is probably the Reconstruction Finance Corporation (RFC). In 1932, Congress created the RFC with a starting grant of \$500 million and authority to borrow up to \$2 billion. The goal of the RFC legislation was "to provide emergency financing facilities [a term referring to means of accessing bailout funds] for financial institutions; to aid in financing agriculture, commerce, and industry; to purchase preferred stock, capital notes, or debentures of banks and trust companies; and to make loans and allocations of its funds as prescribed by law." This mission was later enlarged to include general economic stabilization. In the end, around two thirds of the

RFC's money went to defense-related expenditures surrounding World War II. This has caused critics to contend that the RFC was eclipsed by the war effort in economic impact. [8] [17]

The RFC bears resemblance to our current bailout. The \$2 billion allocated is roughly equivalent to \$31 billion today. However, this later grew to some \$50 billion in the RFC's 25-year life span as the organization's expectations were expanded. The current bailout has been expanded to include automakers and others. So too the RFC found itself serving more purposes than originally intended. How well did it serve its original purpose, stimulating liquidity in the economy and keeping banks afloat? During the months immediately following the RFC's creation, publicly held currency and bank suspensions both decreased indicating a positive effect on banking. However, loans as a percentage of net bank deposits decreased from 92% to 57% from 1929 to 1935, indicating a freezing of liquidity. [7] [8] [11] [36]

There are three arguments against the RFC. First, it directed money not to consumers, but to large institutions. The use of public funds for a bailout of a financial institution is rarely a popular action. Second, the RFC's effect was mitigated by tax and tariff policies. It is important for government to avoid negating the effects of a bailout by failing to coordinate other areas of policy. Third, open bookkeeping regulations demanded disclosure of institutions receiving aid. If an institution had to disclose to the public that it is seeking assistance due to insolvency, a run on that institution may occur. The problem of widespread distrust of the very institutions that were supposed to have been receiving assistance could have caused insolvency to become a self-fulfilling prophecy.

In order to receive RFC assistance, an institution was required to allocate and segregate a certain amount of collateral to capitalize itself. These collateral requirements of the RFC were controversial. On the one hand, this reduced taxpayer exposure to risk, but on the other it took

assets from banks with a limiting effect on liquidity. The RFC lasted around 25 years, being dissolved and distributed to various entities in 1957. Congress found extensive corruption in a closing investigation of the organization. In the end, the RFC's level of success is questionable at best. Nonetheless, it remains a poignant example of the lender of last resort. [7]

Once a nation's economy has fallen back on a lender of last resort, such lenders will likely be resurrected in some form again in the future. A second example in U.S. history was the Resolution Trust Corporation (RTC), established in 1989 during the Savings and Loans Crisis. Federal deposit insurance, required of the S&Ls in 1934, has been cited as a factor leading up to the crisis. This insurance cost each S&L institution the same amount despite its individual degree of risk. This was "actuarially unsound," according to Bert Ely, an S&L expert. [17]

Ely points to a prohibition of adjustable-rate mortgages as well as limits on interest rates that S&Ls were allowed to charge as causes of the S&L Crisis. These factors did not allow S&Ls to charge sufficiently for their lending services and remain competitive. Fannie Mae and Freddie Mac themselves played a role, driving down interest rates on mortgages further with their publicly backed lending. When Paul Volcker, Federal Reserve Chairman, tightened the money supply in 1979, interest rates soared. This left the heavily restricted S&L rates in the dust, and the industry declared losses of almost \$9 billion in 1981 and 1982. The industry was insolvent, with the entire S&L industry portfolio of mortgages coming to a mere 15% of the industry's liabilities. [17] [90] [91]

Deregulation followed, causing the S&Ls to take even wilder risks. Accounting standards were lowered outrageously, with negative net worth sometimes being counted as "goodwill" capital for firms. By the late 1980s, the problem remained unresolved. The Federal Savings and

Loan Insurance Corporation (FSLIC), which was responsible for insuring failing S&Ls in a similar manner to the FDIC insuring banks, was nearing bankruptcy itself. [14]

In 1989, Congress passed the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) and arranged for around \$50 billion to clean up the crisis, with a \$30 billion long-term bond issue and a Treasury funds appropriation. This action established the RTC and abolished the FSLIC. The RTC was to operate for a limited time with congressional oversight and FDIC guidance. In its lifetime, the agency resolved some 747 S&Ls worth around \$394 billion. Estimates for total costs of the cleanup and restructuring run from \$145 to \$160 billion. Obviously, these costs are enormous, but critics argue that the cost of not bringing forth the lender (or in this case, perhaps *de post facto* insurer) of last resort would be much greater. In 2004, the U.S. boasted some 886 S&Ls with assets over \$1.35 trillion. Washington Mutual, however, one of the largest S&L corporations with assets of \$307 billion, has since gone bankrupt during the 2007-2008 financial crisis. [14] [90] [91]

Despite one's opinion of the RTC, the path it took resembles the path of our current bailout. It was born in the midst of a crisis. It was somewhat rudimentary and greatly controversial. It acted quickly, because speed of response was critical to its mission. It used large sums of money to achieve what could have been the aversion of a banking collapse, or what could have been the perpetuation of a flawed industry. The similarity of our current economic recovery plan to the S&L Crisis recovery plan (or plans, depending on how one counts them) is fascinating, especially considering the proximity of the two events in history.

What about other bailouts? In U.S. history, smaller bailouts are abundant, especially in the past century. Each typically focused on one particular company, with varying degrees of success. The Penn Central Railroad bailout of 1970 resulted in a \$3.2 billion taxpayer cost, but

produced the Conrail Corporation. In 1971, the government bailed out Lockheed to avoid job loss and to maintain national defense and earned millions in loan fees. In 1975, the government bailed out the City of New York with billions of dollars in loans, but all were successfully repaid. The 1974 bailout of Franklin National bank resulted in millions of dollars of unpaid interest and the partitioning of bank assets. The 1980 international bailout of Chrysler, in which the U.S. government participated, resulted in a profit of over \$660 million. In the 1984 bailout of Continental Illinois National Bank and Trust Company, the FDIC lost \$1.8 billion. The 2001 airline industry bailout through stock warrants and loans grossed a disputed profit of between \$141.7 and \$327 million dollars with a later loss of around \$23.2 million. Success or failure of these bailouts followed the RTC and RFC's pattern: hit or miss and highly disputed. It appears that there is no such thing in history as a bailout whose success is universally lauded.[5]

Plainly the current recovery actions are by no means the first example of bailout or lender of last resort intervention in the U.S. economy. As such, there are obviously many lessons to be learned about our current recovery actions from the past. While this section of this paper has demonstrated the precedents of our current TARP bailout, conclusions based on the similarity of our current economic recovery plan to the past will later follow. As this historical context has shown, government has not been shy in the past century about intervening when the financial markets struggle exceptionally. It is not fair to say that the intervention of 2008 is without comparison of scope or form, but simply that it is unique to its own era of history.

Whether one chooses to view the RTC as a success or not, the economy indisputably found the ability to move beyond the S&L Crisis . Financial markets were restored to health in the 1990s. Once again the economic cycle reached a boom period. In fact, that very boom had quite a lot to do with the financial crisis of 2008.

## Part II: The 2008 Crisis

Several precipitating factors of the current economic crisis and the bailout act merit consideration here. An understanding of where the market turmoil originated will aid an understanding of the bailout itself. Subprime and so-called NINJA (No Income No Job Approved) lending practices, the real estate bubble crash, and adjustable-rate mortgages (ARMs) are all interconnected factors leading to the bailout. Perhaps the most often discussed issue is the securitization of mortgages into complicated investment instruments known as mortgage-backed securities (MBSs) and collateralized debt obligations (CDOs) and subsequent speculation on these complex securities. The Community Reinvestment Act (CRA), mark-to-market accounting and the Sarbanes-Oxley Act, moral hazard and credit default swaps are also worthy topics for examination.

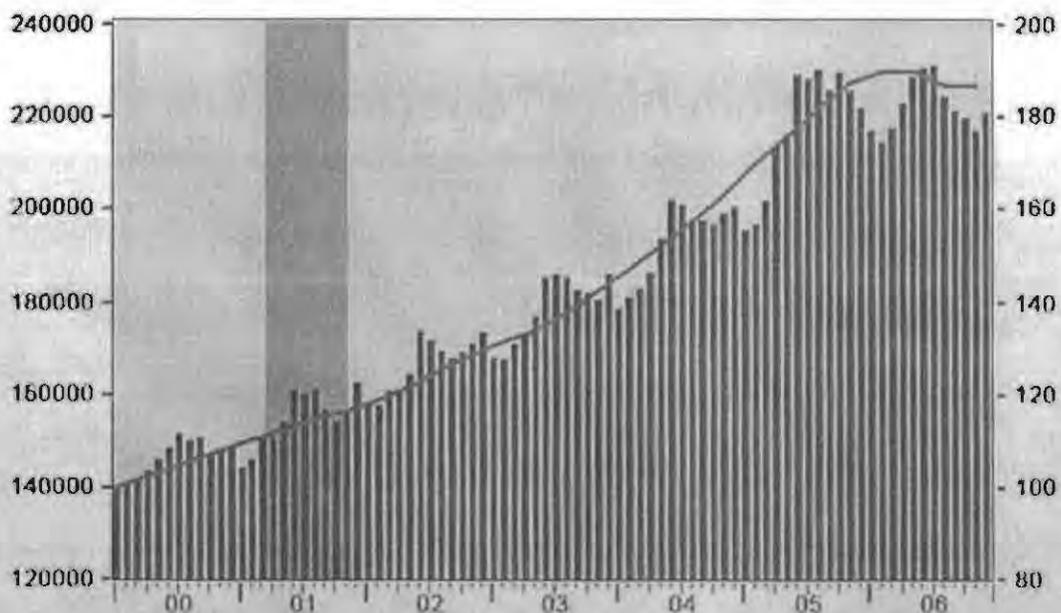
The average price of a U.S. home in November of 2008 was 9% lower than just a year before. This historic drop signified an inherent malfunction in the housing market. The market had been overbid and now was experiencing an adjustment in value. Subprime lending had skyrocketed, giving more people the means to purchase housing and bidding up prices. Fannie Mae and Freddie Mac, the quasi-governmental agencies known as Government Sponsored Entities or GSEs, drove much of the subprime lending expansion. The GSEs were required by law to meet strict government requirements to lend large sums to low-income families and high-risk borrowers, who historically depend more on subprime lending. The following chart illustrates the unsustainable increase in home prices experienced before the crisis. [2] [38] [83]

## Rising Home Values

NAR Median Sales Price: Existing 1-Family Homes, United States \$

S&P / Case-Shiller Home Price Index: U.S. National | SA, Q1-00=100

■ Recession

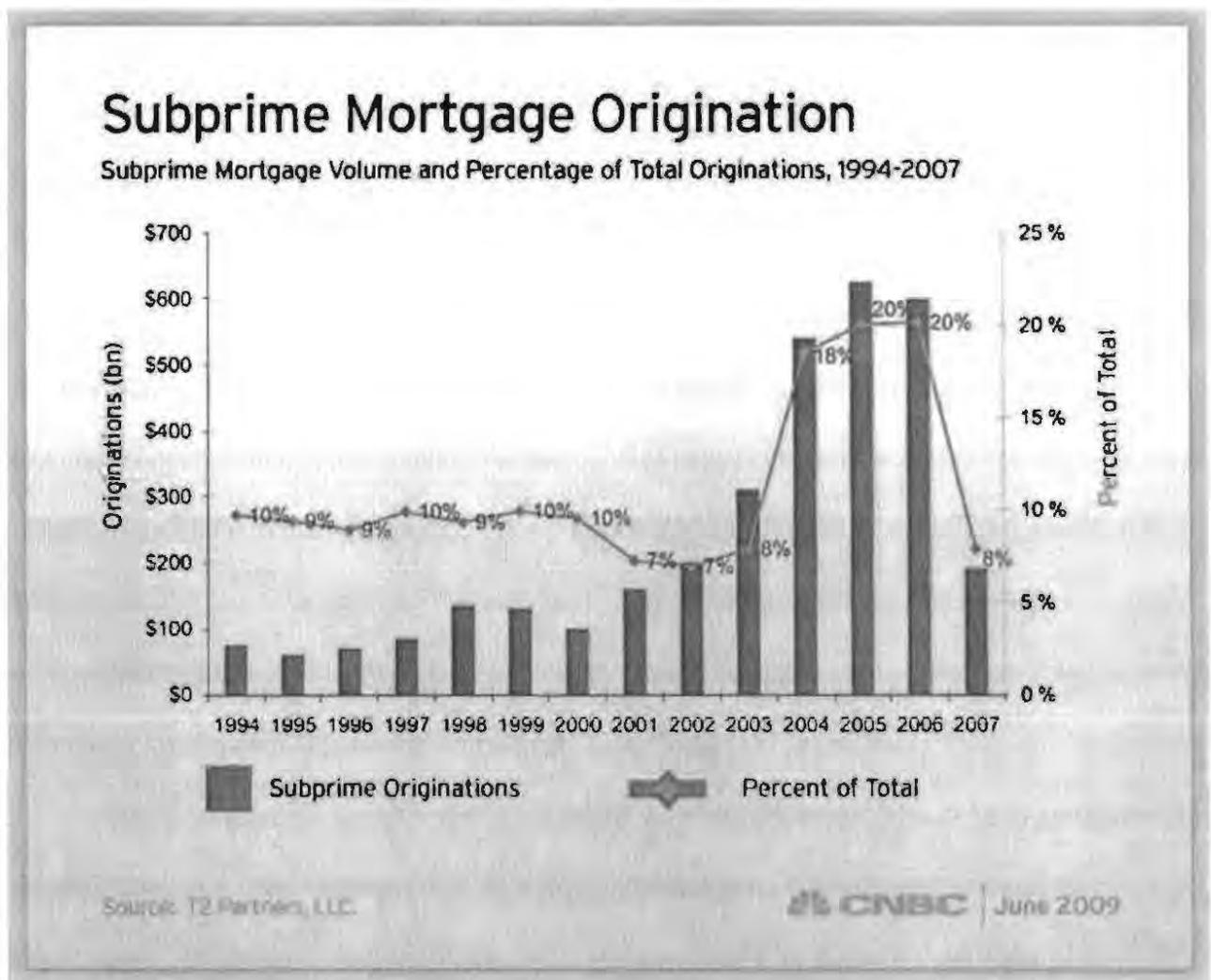


Source: Haver Analytics

CNBC | June 2009

Another factor that many believe encouraged subprime lending was the Community Reinvestment Act of 1977 (CRA), which was intended to help low-income or otherwise credit-lacking communities. Such communities often experience liquidity shortages caused by their own banks. Large state or national banks often set up branches to accept the deposits of these “less-than-prime” communities. In turn, they refrain from pumping the deposits back into local

loans but instead route them to more creditworthy large businesses and wealthier community mortgage loans. While the CRA law had good intentions, many contend that it simply forced banks to make subprime loans and expose themselves to undue risk. At any rate, billions of dollars of loans were made under the CRA, and it doubtless had influence in the subprime markets. These CRA loans made up a substantial portion of the portfolios of the GSEs Fannie Mae and Freddie Mac. The chart shown below from CNBC illustrates the growth in prevalence of subprime mortgage lending. [23] [26] [37] [83]



Of course, the more loans the mortgage lenders made, the more they could expand their market shares and grow their companies, even if the foundation for growth was inherently

unstable. Further, the subprime loans were driven by the surge in home-equity lines of credit. Home-refinance mortgages are more often classified as subprime than originating mortgage loans on home purchases. Some of these loans were made to borrowers with such great credit risk that one company even proudly coined the term “NINJA loans” to describe how freely it distributed credit. Although this term began as a positive marketing slogan, it was later used as a derogatory term to illustrate lack of good judgment on the part of creditors. The increase in mortgage debt outstanding in the U.S. was approximately \$9.5 trillion over four years preceding the crisis. This rate of increase is unsustainable in simple terms of comparison to actual GDP. The only explanation for this inordinate increase is a lowering of borrowing standards, with a closely connected increase of uncreditworthy borrowers willing to take on loans they cannot handle. [4] [26]

Indeed, while subprime lending allowed lenders to make more loans with relaxed standards, the rising popularity of adjustable rate mortgages (ARMs) lured more borrowers with low introductory initial interest rates. As many ARMs age, they tend to adjust upward since they often carry a rate of interest higher than their initial rate. Further, ARMs are tied to particular economic interest rate indices. As these indices adjust with the economy, the ARMs can adjust downward or dramatically upward. At one point, these ARMs and similar interest-only loans accounted for the majority of new home loans in the U.S. [1] [3] [26]

At the same time, the new mortgage boom was being securitized into bundled investment packages on bank balance sheets and investing entities. Loose lending practices and their potentially toxic, or insolvent, products, were being worked into the warp and woof of the U.S. banking system. Securitization involved turning liquid and illiquid assets, like mortgages, into securities that could be bought and sold between large banks and investors. Therefore,

homebuyers often found themselves paying their mortgage payments not directly to their local banks, but to large third-party banks that issued the securities and sold them in the secondary mortgage market to investors. The term “collateralized debt obligations” (CDOs) describes this style of asset-backed security, with mortgage-backed securities (MBSs) being the most prominent form of mortgage investment in the pre-crisis market. [4] [21] [22] [30]

Asset-backed securities outpaced in growth all other types of bonds from 1996 to 2006. Securitized subprime mortgages alone increased by around 1000 percent in volume between 1996 and 2006. Often, these securities were divided into levels of risk based on credit ratings and measures of likelihood of default. Each level of risk was called a “tranche.” The first tranches were the most secure and represented the first payments on the mortgage. Since these payments were more certain and sooner, they fetched the highest prices. Later tranches were sold for lower prices due to a higher risk of default and a greater time value of money. This system was a new way to deliver a mortgage to a financial market, so market participants had a hard time understanding and fairly pricing the new securities. Few questions were asked when banks like AIG selling all the tranches of their new products, touted the security of mortgages as being investment-grade. This tranche system to stratify risk led to a false sense of security and an overconfidence in measuring one of the most unpredictable phenomena in human history: risk of default. [4] [27] [79]

Securitization marked a paradigm shift for everyone, especially for mortgage brokers. They found themselves making mortgages not to collect payments from their clients for years to come, but to sell mortgages immediately to large investment house operations for instant cash. Their profits now derived not from a relationship, but from the point of sale of an impersonal

asset. The change of the local mortgage lender to middleman salesperson provided yet another incentive to sell mortgages to those who could not afford them.

As new securities hit the market, the growing real estate bubble began to be exposed to speculation on two fronts. By one point in 2005, housing prices had risen 12.5% during the previous year. This offered huge returns for investors/buyers in the housing market. There was money to be made in housing even if a buyer had to take out a subprime ARM at a relatively high interest rate. This sort of speculation became so prevalent that homebuilders began to write into buyers' contracts provisions against reselling new homes within a year's time to fend off the investor/buyers. "Speculative activity may have had a greater role in generating the recent price increases than it has customarily had in the past," according to Alan Greenspan in 2005. [78] [27]

But speculation on the MBSs themselves rather than just the housing market was a growing issue. One investor website advised, "Interest rates have evolved to sprout 'commodity' features with the advent of the \$6.1 trillion dollar value Mortgage Backed Securities (MBS) market. The MBS has created liquidity and relative volatility for a typically illiquid security, making it prime for speculation." [79] [1]

Further, a new type of highly complex financial risk-swapping was taking Wall Street by storm just before the crisis. Called credit default swaps or CDSs, these new types of investment insurance contracts allowed investors to purchase an asset, such as an MBS, and hire a third party to insure them against loss on the investment. For a detailed discussion on CDSs, see Appendix II. In return, the third party would receive a sizeable fee. This type of insurance has potential to lead to a serious ethical issue called *moral hazard*. Moral hazard was a particularly significant issue in the MBS markets due to their highly speculative nature. [27] [See appendix for a thorough discussion of the nature of CDSs]

Moral hazard involves a situation where an investor, banker, lender, or purchaser who possesses insurance uses the decreased risk exposure that insurance provides to leverage investments with higher risk than normally would be acceptable. Moral hazard describes in economic terms the proliferation of risk in a market without a sufficient reason for the increase. However, moral hazard can lead to short-term prosperity through increased investment. The CDSs seemed to the financial community like the innovation of a lifetime since they pumped the MBS markets up through increasing moral hazard. The swaps would allow institutions such as banks to turn riskier investments into assets and collateral of the highest quality by severely underestimating the risk and hiring someone else to take even that risk. [39]

Complex computer models deemed investments such as MBSs to have almost perfect credit ratings in the aggregate. After all, only a few defaults were to be expected due to booming real estate markets. These defaults would easily be smoothed over by the diversified nature of the securities. The selling of these CDSs was highly profitable, since the swap was what transformed an everyday mortgage into a financial product tantamount to AAA rated bonds. This philosophy was adopted wholesale by AIG Financial Products, the new financial insurance subsidiary that insurance giant AIG created to sell the new CDSs. [32]

As the real estate bubble inflated, profits from this subsidiary skyrocketed, and AIG's exposure to the mortgage backed securities market increased dramatically. However, AIG had collateral for its insurance. Computer models told it that large-scale defaults on the MBSs would be impossible actuarially. Moreover, there were credit ratings from trusted rating agencies to verify these assumptions. [2] [32]

How accurate were the credit ratings? Congress held a hearing in October, 2008, where testimony read as follows:

*The leading credit rating agencies — Standard and Poor's, Moody's, and Fitch — are essential financial gatekeepers. They rate debt obligations based on the ability of the issuer to make timely payments. A triple-A rating has been regarded as the gold standard for safety and security of these investments for nearly a century.*

*As our financial markets have grown more complex, the role of the credit rating agencies has grown in importance. Between 2002 and 2007, Wall Street issued a flood of securities and collateralized debt obligations (called CDOs) backed by risky subprime loans. These new financial inventions were so complex that virtually no one really understood them.*

*Unfortunately for investors, the triple-A ratings that proved so lucrative for the rating agencies soon evaporated. S&P has downgraded more than two-thirds of its investment-grade ratings. Moody's had to downgrade over 5,000 mortgage-backed securities. [75]*

Many questions arose about the seemingly boundless profligacy of the financial wizards. Why so many subprime loans? Why would anyone believe complex financial contraptions would nullify the fundamental financial principle of not loaning to those who cannot pay back? Why would banks use MBSs to provide such a large percentage of their collateralization? In 2003, one-third of commercial bank and thrift assets were mortgage-related. As long as the real estate market was climbing, the new roles that mortgages played in the U.S. economy benefitted nearly everyone. Ironically, one group that did not reap the benefit from sky-high home prices was the homebuyers who wished to purchase with cash or legitimate collateral. Soon the very innovations that once brought swift success would bring equally rapid downfall. [31] [38]

Suddenly, in early 2006, the first whiff of trouble began when many ARMs adjusted upwards and homebuyers started missing payments. Newly-built homes began to remain unpurchased as the housing market peaked, and foreclosures on existing mortgages rose. Because of speculation and extraordinary demand, the real estate market had turned into a bubble, or an unsustainably high priced group of assets. As the bubble began to deflate, and housing prices declined, homebuyers began to be “upside down,” or owe more than their equity

in their homes. Strangely enough, this meant that these homebuyers could have greater net worth as homeless defaulters than as homeowners. But not only were homeowners hurting. Their creditors were beginning to hurt, too. In December of 2006, Ownit Mortgage Solutions filed for bankruptcy. In February of 2007, People's Choice Mortgage was next in bankruptcy court, followed by the largest subprime lender, New Century Financial, on April 2. Moody's credit rating company began to slash the ratings of remaining subprime securities. [20] [21]

It was not just the subprime lenders themselves that were going down. Homeowner defaults continued to increase, and the toxicity spread. The ride to the top of the bubble had been swift and exhilarating, and the ride down would prove equally swift, yet dismal. The Sarbanes-Oxley Act of 2002 had established strict and conservative accounting standards and hefty penalties for non-compliance in an effort to keep banks' balance sheets accurate. However, in the real estate bubble markets, this effort may have actually led to a dramatic underpricing of banks' assets and a subsequent wave of financial institution insolvency. [33]

Mark-to-market accounting, or fair value accounting, dictates that financial institutions must adjust the dollar amounts for assets on their books to current market value, rather than their original purchase price. This works insofar as the market valuation is reasonable. However, when markets dramatically overprice or underprice a large range of assets, banks' balance sheets will reflect this reality with an unrealistically optimistic or dismal financial status. According to economist Brian Wesbury, "[While] it is true that the root of this crisis is bad mortgage loans... probably 70% of the real crisis that we face today is caused by mark-to-market accounting in an illiquid market." This percentage estimate may be excessive, but mark-to-market regulations undeniably played a major role in the crisis. Whether mark-to-market accounting rules were the

cause or simply the messenger is also up for debate. For a comprehensive analysis of this issue, see Appendix I of this paper entitled "Mark-to-Market Accounting." [6]

In the case of the current financial crisis, the real estate market took a dramatic swing downward. Mortgage-exposed assets on balance sheets became dramatically underpriced. Credit rating agencies lowered their assessments of these assets. Financial institutions were forced to slash valuations of their collateralization and assets. This became a cycle, sending banks on a swift trip toward insolvency. Financial institutions found their own credit ratings lowered. Their investors got nervous, the buyers of the mortgage-exposed assets bid lower, and more creditors made collateral options calls. They demanded that banks show more liquidity than they were able as the cycle continued. [33] [50]

If banks could have used a fairer assessment of their mortgage-related assets than market value, the situation may not have been as serious. However, Sarbanes-Oxley prevented a more favorable approach. As banks saw balance sheets deteriorate, stock prices went into free fall. The spiral toward insolvency became a vicious, self-perpetuating cycle. This cycle ran its course through bank after bank. The circumstances wrought havoc on first the real estate and later the financial markets in the U.S., leading to an unenviable economic situation.

Of the financial mega-institutions, first to go was investment giant Bear-Stearns. It had to declare bankruptcy in two of its hedge funds in August, 2007. Big banks were also losing money. Citigroup stated \$40 billion losses over six months in October. Investment bank Merrill Lynch disclosed a \$7.9 billion bad debt exposure. Morgan Stanley posted \$3.7 billion losses. [29]

Then the banks began to fall one by one. It began with the purchase of Bear-Stearns by J.P. Morgan Chase, arranged by the U.S. government in March, 2008. Next, the Independent National Mortgage Corporation (commonly known as IndyMac) was seized in July, becoming

the largest thrift institution to fail in U.S. history. In early September, the U.S. government seized control of Fannie Mae and Freddie Mac, the two publicly-traded agencies that together held or guaranteed over half of U.S. mortgages. This shifted the burden of responsibility for around \$5 trillion of mortgages onto U.S. taxpayers. Later that month, Lehman Brothers announced that it was looking actively for a buyer, but was unable to find one. After being refused a government bailout, Lehman Brothers declared bankruptcy. This was the largest U.S. bankruptcy filing in history. Soon, Bank of America worked out a deal to purchase Merrill Lynch. Within two days, the government promised funds in the form of an \$85 billion emergency loan to save insurance giant AIG from a fate similar to Lehman Bros. [21] [22] [55] [See the timeline on p. 32 for a sequence of these events]

The government established its status as lender of last resort, albeit a selective one, at this point. Meanwhile, the Federal Reserve pumped funds into the financial system in an attempt to slow the crisis. As public tension increased, the federal government began promising a bailout to purchase many of the toxic assets and alleviate economy-wide tension over the crisis. The casualties continued. Goldman Sachs and Morgan Stanley became bank holding companies under the close watch of the Fed. Soon, Washington Mutual topped IndyMac as the largest thrift failure in the U.S. Wells Fargo soon acquired Wachovia, and JP Morgan gathered what was left of Washington Mutual. On September 29, the house rejected the first round of proposed bailout legislation. That same day, the Dow Jones Industrial Average fell 777.68 points, the largest one-day loss of all time. As the markets continued to fall, pressure on Congress increased rapidly. An altered version of the original bailout proposal was soon passed and signed into law by President Bush on October 3, 2008. This finalized version would be known as TARP. [21] [22]

## Part III: The Birth of TARP

The TARP (Troubled Asset Relief Program) plan was only part of an extensive piece of legislation, including some 117 pages, known as the Emergency Economic Stabilization Act of 2008. The most important section of the legislation is Title I, which established TARP. While TARP has been commonly referred to as the “bailout,” it is not the only means through which banking stimulus activity occurred in the 2008 crisis.

Only after many of the major bankruptcies had been announced in September was the legislation passed. While TARP was slow to take form, increased spending occurred overnight. Even before the TARP funds were approved, the bailout had already begun. In March, 2008, the Fed had already provided a \$29 billion loan to JP Morgan Chase as part of the Bear-Stearns acquisition deal and promised up to \$200 billion for loans to help improve the desirability of MBSs in the markets. In September, the Treasury had put Fannie Mae and Freddie Mac under government oversight and used \$200 billion to guarantee their assets. The Fed had guaranteed \$85 billion to salvage AIG, and made hundreds of billions more available to stimulate banking liquidity. Therefore, the TARP funds were by no means the first round of bailing out the banks. In reality, TARP would become the long-term manifestation of the ongoing attempt to fix the nation’s financial toxicity, since most of the major financial industry bankruptcies happened in September, 2008, before TARP was even passed. In the short-term, (i) mergers, acquisitions, and liquidations within the banking industry and (ii) lending from the Fed were the methods of dealing with the immediate consequences of the financial crisis. [41] [48]

This long-term view of TARP’s purpose is consistent with the bailout’s original language. According to the legislation, the TARP bailout act was passed “For the purposes of providing

stability to and preventing disruption in the economy and financial system...” This general purpose was to be accomplished through “Immediately provid[ing] authority and facilities that the Secretary of the Treasury can use to restore liquidity and stability to the financial system of the United States.” TARP from the beginning was established as a long-term project whose intentions were to bring long-term stability and liquidity stimulus. [84]

Consistent with the acronym, the purchase of troubled assets was TARP’s original purpose. According to the legislation, the Secretary of the Treasury was given broad powers in the administration of the troubled assets purchasing process:

*The Secretary is authorized to establish the Troubled Asset Relief Program (or ‘TARP’) to purchase, and to make and fund commitments to purchase, troubled assets from any financial institution, on such terms and conditions as are determined by the Secretary, and in accordance with this Act and the policies and procedures developed and published by the Secretary. [84]*

Through purchasing these assets, TARP originally had two goals, according to the legislation itself:

*The purposes of this Act are--*

- (1) to immediately provide authority and facilities that the Secretary of the Treasury can use to restore liquidity and stability to the financial system of the United States; and*
- (2) to ensure that such authority and such facilities are used in a manner that--*
  - (A) protects home values, college funds, retirement accounts, and life savings;*
  - (B) preserves homeownership and promotes jobs and economic growth;*
  - (C) maximizes overall returns to the taxpayers of the United States; and*
  - (D) provides public accountability for the exercise of such authority. [84]*

To fulfill part (2), TARP included the establishment of the Financial Stability Oversight Board, which would monitor the bailout's progress, and the establishment of the Office of Financial Stability, that would assist the Secretary of the Treasury in the administration of TARP. [84]

Part (1) of the purpose statement describes the central purpose of TARP: restore stability and increase liquidity. These are clearly long-term goals, and they are somewhat vague. It is difficult to evaluate TARP through measuring either liquidity or stability. Measurement of liquidity is a precise science, requiring detailed experimental controls and data appraisals. Any increases in liquidity cannot be linked causally to a single intervention or to any intervention at all, since liquidity fluctuates from natural economic causes. Further, reliable experiments with control groups are impossible in a real world economic situation. Measurement of stability is a subjective endeavor, although lack of volatility may hint at the presence of stability. Complicating the situation is the evolution of TARP. It is hard to pin down one philosophy, appropriation, or institution as a summary of TARP's charge. [47]

The original bailout bill included a provision of a grand limit of \$700 billion of expenditures, with two phases of \$350 billion each. The first phase made up to \$250 billion available immediately and up to \$350 billion available with the President's certification submitted in writing to Congress. The second phase made the final \$350 billion available. [13]

After Congress approved these funds, they were not spent immediately. In fact, money from the first phase was still being distributed in January of 2009. Where exactly did all this money go? Tracing these expenditures is crucial to tracking the bailout. Many provisions of the Emergency Economic Stabilization Act are rather vague. Many originally planned expenditures were altered and revised as the economic situation revealed itself. The Secretary of the Treasury originally was given authority under TARP to purchase strictly "troubled assets" with the billions of dollars allocated. In actual practice, early TARP funds went to inject capital in banks starting in early October, 2008. [44] [57]

As soon as October 14<sup>th</sup>, the treasury announced that it would spend \$250 billion of the TARP funds to “inject capital into banks.” This marked a fundamental philosophical shift in the use of bailout funds. Suddenly, the bailout's long-term goal was no longer to remove toxic assets by purchasing them directly. Instead, the plan became to purchase preferred stock, or stock that pays a dividend, from troubled banks. This change in direction added to the public confusion of the bailout's process for improving the economy, but was by no means the final word on where the bailout's evolving role would carry it. Eventually, a shift back to the original purpose of purchasing troubled assets did occur later in the bailout's life. [41] [48] [76]

As TARP continued to evolve, it wound up investing in two categories of banks. First, large banks who were targeted for TARP investment were subjected to a “stress test.” The test was based on a scrutiny of balance sheet accounts with a variety of pro forma situations projected for the following two years of operations. Banks that were projected to become insolvent with two years of operation in an environment of economic downturn were approved for lending. The second category of TARP investment was small banks. These banks were only allowed to participate in TARP if they were already strong. The purpose of this program was to increase lending in the financial sector as a whole. [58]

The first \$293.7 billion chunk of TARP expenditures was eventually divided into four categories. The final total spending in each of these programs was calculated in a January 2009 Government Accountability Office report. Under the main category, the Capital Purchase Plan, the Treasury Secretary purchased \$194.2 billion of preferred stock shares in some 317 financial institutions. This was arguably the most substantial action taken by TARP, inasmuch as it allowed the U.S. Treasury to hold massive equity stakes in formerly publicly-traded banking firms. The Treasury explained that it wished to “consider all options” for the bailout funds, and it

felt that the capital injection plan should focus on direct investment in banks “because of the economic leverage that could be gained” from increased bank lending. However, many criticized the program's new shift as “undermining privatization.” As David John of the Heritage Foundation put it, “Policymakers must ensure that the result is not a legacy of political control of the financial system, threatening the efficiency of markets and the principle of private ownership.” No matter one's view of it, however, the Capital Purchase Plan's direct investment into banks remains an integral part of the TARP plan. [42] [41] [48] [66] [64]

It is important to make a distinction at this point. The TARP execution strategy vacillated between two main philosophies: the asset approach and the institutional approach. The asset approach focuses on purchasing and holding troubled assets, thereby removing them from the market. The purchase helps market participants by taking the assets off their books. The holding of the assets helps restore confidence in the markets since trading volume is reduced and market participants are more willing to purchase securities if the government holds a large number of similar securities. The institutional approach focuses on institutions by taking equity stakes in them. The distinction between these two approaches is useful in the analysis of TARP.

Two other TARP programs are worth noting. Called the Systematically Significant Failing Institutions (SSFI) program and the Targeted Investment Program (TIP), these initiatives received \$40 billion apiece. TIP dealt largely with the saving of the Citigroup company, among other direct investments in forms of capital. As such, TIP was the only part of the bailout that really followed the original plan. SSFI allowed *de post facto* for the money that had already been spent to keep AIG afloat. [41] [48] [53]

Even more treasury programs were under the bailout umbrella, such as the Asset Guarantee Program, which provided insurance for troubled assets in an attempt consistent with

the asset approach originally delineated for TARP. Further, another category was the Automotive Industry Financing Program, which provided funds to the automobile manufacturing industry. This expenditure may seem totally unrelated, but the automobile industry crisis could be seen as a sister bubble to the housing bubble. Purchasing cars on credit became more difficult when the MBS markets crashed and credit tightened throughout the economy. This led to a large decrease in demand for automobiles that mirrored the crash in demand for new mortgages. While related to the overall situation, however, an automobile manufacturer stimulus is a clear deviation from TARP's original purpose of restoring liquidity to banks and financial institutions. [41] [52] [65]

These categorizations have shown how creative the Treasury can become in spending money allocated to bailouts. The bailout's theoretical course of action began in the asset-based direction, but took a major shift toward equity investment rather than securities investment when it came time to actually write checks. Advocates of the equity purchase philosophy at the Fed began considering a more securities-focused plan with quantitative easing in 2009 after having time to analyze the situation thoroughly. The bailout, despite the hundreds of pages of legislation and explanation, remained a work in progress throughout its lifetime. Aggravating this was the end of Paulson's term as Secretary of the Treasury and the start of Timothy Geithner as his replacement. With the American Reinvestment and Recovery Act of 2009, Congress essentially decided to scrap the TARP framework so it could focus on broader economic intervention measures. [88] [12]

## Part IV: Analysis of TARP

How effective was the bailout? It is difficult to tell without genie-like speculation how much direct effect the TARP investment has had on liquidity of troubled assets as well as on the overall “stability” of the economy. Banks still kept many of those troubled assets in the same places on their balance sheets. Little effect on liquidity of MBSs was immediately noticeable since most of TARP funds were invested in systemic injections of cash through purchase of stocks or other forms of capitalization. One way to analyze the TARP program's effectiveness is to compare it with a similar event in history: the United States' S&L Crisis recovery.

The S&L Crisis, whose recovery was guided by the government-run Resolution Trust Corporation (RTC), could be regarded as the nearest thing to success in the way of government-backed economic disaster recovery. This particular recovery ended up costing taxpayers as little as \$145 billion by some estimates, much lower than original expectations of \$500 billion. The RTC also completed its charge and self-destructed ahead of schedule. Does this mean that the RTC was a success? Should one be similarly optimistic about the TARP program? The answers to both these questions depend on interpretation. The RTC had many elements of success. TARP does have some similarities with the RTC. The outcome of TARP is nevertheless a unique event. Comparisons do give one general suggestions toward determining how successful TARP's outcome has been. [14] [17] [91]

The RTC began, much as the TARP bailout, in a hasty succession of events spurred on by a deepening financial crisis. Similarly, in both bailouts the focus began with removing the troubled assets from the markets. The RTC bailout moved more consistently in this direction than TARP from the beginning. The RTC's sole purpose was to sell already obtained assets from

insolvent S&L's. Eventually, \$459 billion in assets were sold from S&L's valued at around \$394 billion. Some money was recouped for the Treasury. The operation still ended up costing money. Overall, however, the RTC did affect the solution of a major problem, but its efficiency remains debatable. [14] [17]

How much of the S&L Crisis was actually sold back into the markets? How much was eventually paid for in a disguised manner through the banking fabric of the Federal Reserve, the Treasury, and other agencies through years of slow osmosis of illiquid assets? The S&L Crisis was a highly expensive episode beyond which the U.S. economy has completely moved. The RTC could be seen as a conduit to this movement, but not a force necessary to the markets' healing. The RTC (like TARP) did not even exist until well into the crisis. Its function could have been performed by other agencies. Institutions it liquidated had been bankrupt or in poor condition for so long that the markets arguably could have moved on eventually without the RTC to solve the problem for them. The amount the RTC changed the outcome is, as with TARP, uncertain. One simply cannot separate all the variables at play. [14] [17]

Further, TARP and RTC have one major difference: the RTC was not designed to nationalize or create a government ownership share in banks like the TARP has done. This nationalization has taken place quietly and the original plan did not include it. Nevertheless, the RTC sought to stabilize the markets of its day solely through the purchase and sale of assets. It never moved into public purchasing and holding stock in troubled institutions.

Those who administered the RTC have many words of wisdom for today's bailout artists. Real estate analyst Joseph Robert explained that the analysis of an RTC-era former S&L security would have taken around 90 days, but a similar analysis of a credit default swap insured MBS is far more complex because of the large and far-removed pool of assets backing each security.

How could these assets be fairly evaluated and purchased? Apparently in TARP's case, the easy way out in early October, 2008, was to purchase stock and equity in banks themselves rather than face the root cause of the crisis, the actual assets. [80] [70]

This RTC principle demonstrates a fundamental problem in the 2008 crisis: lack of confidence. No one had enough confidence to purchase the MBSs, CDOs, and by extension, bank stock and funds, etc. No one, not even the Treasury administering the bailout funds, was confident enough to step into the markets and start a chain of purchases. Everyone feared either selling the assets too low or buying them too high. Since the assets' former values were clearly determined by a bubble, now a realistic valuation method was necessary. A purchaser and seller of assets must verify that method through actually purchasing and unfreezing the securities markets. A chicken and egg dilemma stalled the market. Until restoration of confidence occurred, the markets presumably would remain frozen and the bailout's goal would not be achieved. [87]

All bailouts have to deal with deep-seated issues of corruption and greed. In order to use established financial channels and avoid nationalization of financial market administration, the managers of the RTC used private companies to perform much of the investment liquidation work. Because of this, they encountered problems not only with those who wished to profit inordinately at taxpayer expense by the purchase of liquidated assets but also with private companies abusing bailout privileges, funds, and contracts. According to one business law institutional research report, the RTC used private sector services in the following areas:

- Auction services
- Asset Valuation services
- Asset management services (servicers of securitized pools)
- New debt origination (as part of the securitization process)
- Capital market offerings (once securitized, these assets needed to be brought to the capital markets) [82]

The TARP legislation largely avoided private administration of bailout programs, relying on the Fed and the U.S. Treasury instead. Nevertheless, the lesson remains: those who receive assistance, dole out assistance, and approve applications for assistance must be carefully monitored through internal control. How much of this across-the-board accountability was built into TARP? Congress and the administrators of TARP added additional provisions that contributed to TARP's difficulty drifting among various goals and disconnected stimulus activity with no common thread. [70]

From the beginning, the bailout legislation was full of what most would deem earmark expenditures. Many of these took the form of tax cuts. Children's wooden practice arrows were exempted from excise tax. Motorsports complexes were given more favorable tax treatment. Bicycle commuters were given tax breaks. Tax credits were given to certain developers of American Samoa. These endeavors are clearly unrelated to any form of bailout activity. Many would see these as obvious pork designed to lure votes for the stimulus package. At any rate, from the beginning the bailout was beset with handout seekers. [41] [48]

One of the biggest challenges of a bailout, especially when bailing out banks and not assets, is deciding which companies will live and which will die. Lehman Brothers, for example, was deemed unnecessary to basic U.S. economic stability and was allowed to go into bankruptcy. AIG, on the other hand, was deemed essential to staving off complete collapse due to its huge market share of reinsurance. AIG was saved at huge expense. These fire sale decisions of the September, 2008, period of the financial crisis were only the beginning. Many of the failing banks were hastily merged with other banks, such as Bank of America's government-contrived purchase of Merrill Lynch. This merger seemed like a solution better than bankruptcy for Merrill Lynch at the time. Arguably, however, the merger has bogged down Bank of America so much

that the result was just a delayed bankruptcy or restructuring much larger than the original. Worse than just delaying a bankruptcy is creating a so-called “zombie bank” that remains in operation by the lifeline of bailout funds but fails to add any lending to the economy. Such a phenomenon is attributed to the lengthy period of recovery in the Japanese economy following a banking crisis. [28] [69]

TARP administrators were forced to deal with requests from not just banks but from entirely different industries. Since the bailout was opened up to automakers, it seems the floodgates were unlatched, and the world trampled up the Treasury steps seeking bailouts for every imaginable reason. The steel industry wanted a bailout. Retailers demanded sales tax holidays. The U.S. infrastructure should be fixed with bailout funds. It even goes as far as Larry Flint and Joe Francis, infamous pornographers, traveling to Washington to ask for a bailout for the adult entertainment industry. Unnecessary bailouts were especially encouraged to proliferate when TARP funds were appropriated all at once and were officially allocated to different endeavors at later dates. [83] [47] [67]

The RTC undeniably had a better-defined, less complex course of action to follow than TARP. The Government Accountability Office (GAO) stated in January, 2009, after a detailed review of TARP, “The Treasury has made limited progress in formatting, articulating and communicating an overall strategy for TARP.” While the Treasury has publicized broad overviews of its individual asset and ownership TARP purchase plans, this still does not communicate the overall purpose and unifying strategy of the program. According to the GAO, “The lack of a clearly articulated vision has complicated Treasury's ability to effectively communicate to Congress, the financial markets, and the public on the benefits of TARP...” Perhaps this brings up the fundamental difference between TARP and the RTC: the RTC's goal of

cleaning up the S&L Crisis through liquidations and mergers was much clearer than TARP's more nebulous purpose of stabilizing and increasing liquidity. [41] [48]

This comparison has served as a guide to the unfolding character and effects of the TARP bailout. Many other indicators could be mentioned, such as the government's claim that the top 20 banks receiving government rescue funds reduced lending slightly in the last three months of 2008. Was this a symptom of the failure of TARP to increase liquidity, or simply an unavoidable consequence of being in a recession? Indicators such as this reveal the difficulty of using economic statistics alone to assess TARP's effectiveness. [41] [48] [61]

Economics is a complex science. There is not a perfect solution to financial crises. However, those who do not study the past are doomed to repeat it. Plainly, studying the financial crisis, TARP, and future stimulus activity is well worth the economic understanding gained. As the beginning of this paper discussed, it is important to analyze economic events in a sequential fashion since economics tracks the continuance of ongoing events. In order to facilitate this type of understanding, a table on the following page chronologically summarizes major government bailout activities since the stock market crash of 1929.

## Timeline

1929	1930-1931	1932	1934	1957	1970	1971	
Great Depression begins with stock market crash	Roosevelt campaigns on platform of public works stimulus	Reconstruction Finance Corp. established	FDIC is established	RFC is dismantled	Penn Central Railroad bailout	Lockheed Martin bailout	
1974	1975	1977	1979	1980	1981-1982	1984	1989
Franklin National Bank bailout	New York City bailout	Community Reinvestment Act passed	Volcker tightens money supply, leading to high interest rates	Chrysler bailout	Savings and Loan industry loses around \$9 billion	Continental Illinois bailout	RTC established by FIRREA
2001	2002	2004	2005	2005	2005	2005	2006
Airline bailout	Sarbanes-Oxley passed: Mark-to-Market Accounting	886 S&Ls have assets of \$1.35 trillion	12.5% increase in housing prices	NINJA loans, ARMs, and securitization are major market phenomena	Greenspan warns of danger in speculative investment activity	Credit-default swaps popularized	10 year MBS growth exceeds all bond types
2006	2006	Dec. 2006	2007	Aug. 2007	March 2008	July 2008	
1000% growth in securitized mortgages over 10 years	ARMs begin to adjust upward	First major mortgage lender bankrupt	Mortgage lenders continue to go bankrupt	Bear Stearns in trouble	JP Morgan Chase buys Bear Stearns	IndyMac seized	
September 2008							
-Fannie Mae and Freddie Mac bankrupt				-Lehman Brothers bankrupt			
-Bank of America acquires Merrill Lynch				-Dow falls 777.68, a record fall			
-AIG put on life support				-Federal Reserve increases money supply			
-Goldman Sachs, Morgan Stanley, Washington Mutual, Wachovia all go bankrupt or are acquired							

October 2008
--------------

TARP and Emergency Economic Stimulus Act passed
---

## Part V: The Short-Term

In order to even deal in the realm of mark-to-market accounting, a company must make a conscious choice to speculate. AIG, Lehman Bros., and friends were not in the MBS and CDO markets for the long-term. They had the ability to use the held-to-maturity (HTM) accounting category which permitted a long-term strategy focused on interest payments. Banks and financial institutions traditionally use such a strategy. In the HTM category, assets on the balance sheet are carried at cost with revenue recognized from periodic interest payments. However, AIG and similar institutions wanted to be able to reap huge profits in the short-term. Therefore, they chose the mark-to-market categories over the safety and stability of the HTM category. [See Appendix I on mark-to-market accounting for a more thorough treatment of the accounting treatment of securities]

Short-term focus is not exclusive to AIG and Lehman. The stock market itself has an illogical obsession with the short-term. Stocks are monitored on a daily, even hourly, basis. This short-term analysis exists despite the fact that companies behind them only can create financial statement net income annually, and only pay dividends quarterly. As any entrepreneur will say, one who invests in a business must be ready for a long-term ride. It would be foolish to start a business and expect income an hour later. Yet, the stock market is regularly milked for profits in the extreme short-term.

AIG and Lehman wanted mark-to-market accounting for their assets before the crisis. They wanted it so they could make huge profits from short-term speculation, as the assets they created rode the market bubble up. Only when the curve switches and goes down do these

companies complain. The market bubble fooled everyone: few could see it coming. At least, most chose to ignore because of the thrill of ever-increasing markets. The market bubble is the result of this chosen ignorance. Investors, who choose to ignore fundamental values at their own peril, drive market bubbles through speculation. The 2008 crisis bubble was the result of many market participants buying into the short-term focus and the false promises of always-up growth.

Debt securities were never designed for the short-term. Who takes out a mortgage for a day? What companies would issue a bond for a week? Since debt securities involve steady obligations of interest, it is difficult to justify wild swings in their prices. Cash flows of interest are predictable and regular. The only thing that stops these cash flows is bankruptcy. The possibility of bankruptcy can be hedged against with statistical calculations. The only way to change the nature of the debt security, and ultimately the market that trades it, is by speculating and creating a short-term game out of something inherently long-term.

Is mark-to-market accounting to blame? True, marking assets to market value is sometimes brutal: Lehman and AIG may have been able to survive if they had been able to avoid marking assets to market. But it was these companies that chose to speculate. Mark-to-market simply accounted for their choice. They reaped the upward rewards; what basis do they have to complain when the opposite situation occurs? As explained in the appendix addressing the mark-to-market rules, the rules are not the culprit: speculation where speculation never should be is at fault. These rules are simply the messenger. Do not shoot the messenger.

The stock market is in New York, not Las Vegas. Banks are not casinos. Debt securities are not slot machines. Mark-to-market rules are like the police in that these rules used their authority and force to bring a just punishment to those whose short-term focus turned the

important societal institution of the financial markets into a means to gamble. Ultimately, mark-to-market has acted to protect the public.

Of course, when the bad decisions were exposed, the markets had to adjust. When excessive speculation was revealed to be driving the markets, inflated assets had to be revalued. This revaluation process is necessarily painful. The financial crisis was the obvious and unavoidable result.

The culprits of the crisis are revealed: those with short-term focus. They made the choice of speculation and mark-to-market, and these entities must deal with the consequences of their choices. The issue is that the short-term focused speculators also happened to be key financial institutions to the U.S. financial system and economy as a whole. The goal of TARP was to minimize the impact of the poor choices of a few to the public financial sector.

One should not measure TARP's success by the number of financial institutions it saves or salvages. Ultimately, the measure should be how cheaply and efficiently TARP restores confidence in the financial markets and adds to economic growth. TARP had the choice of the asset or institutional approach to achieve this goal.

## Part VI: Conclusions on TARP

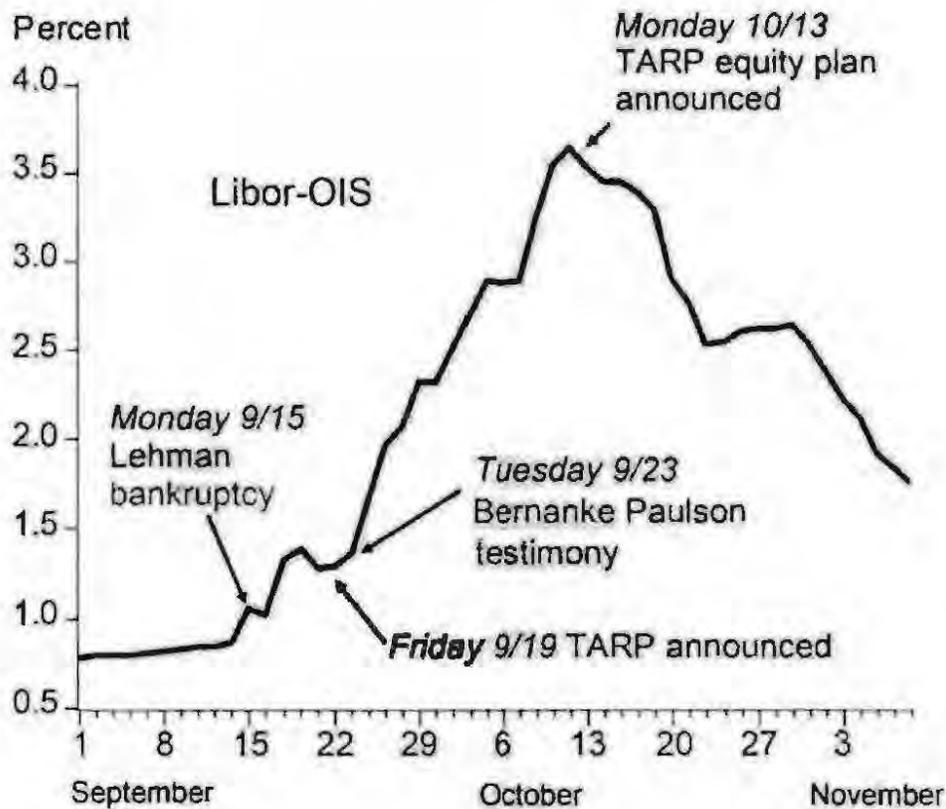
This paper distinguishes between the asset and the institutional approach to the bailout. The government ultimately selected a combination of both tactics. The failure to select and follow one of these two approaches may have been a product of the somewhat haphazard and urgent design of the bailout legislation. Despite the lack of a consistent approach, the bailout, especially TARP, enjoyed surprising success.

The funds distributed under TARP never passed \$411 billion, despite the \$700 billion ceiling. The amount outstanding under TARP has been reduced to \$104 billion. The investment has fared well, with the rest on track to be repaid. The Congressional Budget Office's estimate of the final cost of TARP is \$19 billion. This number is relatively small compared to the potential continuation and worsening of the financial crisis. The institutional approach taken to invest in at-risk companies has not resulted in excessive TARP loan defaults and losses. This indicates a successful saving of the companies playing a key role in the markets. [89]

The Congressional Budget Office holds that the bailout added 1.5 to 3.5 percent to economic growth in 2009. This is a difficult estimate to make, but any contribution to economic growth was very much needed in the recessionary situation following the 2008 crisis. [89]

With the institutional approach, it is imperative to avoid moral hazard brought about by bailing out the very companies who had the irrational short-term focus and fraudulent philosophies. This means that the government's seemingly harsh decision to allow Lehman Brothers to fail was a good one after all. In acting to help AIG, deemed "too big to fail," the government took a larger risk. Moral hazard is an unfortunate byproduct of this intervention.

Nevertheless, the equity related actions of TARP appeared to have a useful effect on the LIBOR-OIS spread, which is a highly regarded measure of turmoil in markets:



This chart was prepared by John Taylor of Stanford University for use in a Congressional hearing in March, 2011. It shows the apparent influence of the TARP institutional approach announcement in calming the markets. Although correlation does not equal causation, shift from a steep increase to a steady decrease points to the effectiveness of the TARP intervention. [76]

Turning to the asset approach, the bailout took a turn around 2009 toward acquiring MBSs, largely with Fannie Mae and Freddie Mac securities. With what was called “quantitative easing,” the Federal Reserve offered trillions in guarantees and purchases of troubled securities. This unprecedented intervention essentially was a government guarantee on the entire market. Despite its extraordinary nature, it has not so far resulted in massive expenses for the Federal

Reserve. Instead, the guarantees and purchases have brought in income. Billions of dollars of this income have been turned over to the Treasury. [41] [89]

The government involvement in the markets engendered by Fannie Mae and Freddie Mac dating back to the Great Depression and developed through legislation ranging from the CRA to the Housing and Urban Development Act (HUD) came under closer scrutiny in the 2008 crisis. TARP took the institutional approach to keeping Fannie and Freddie afloat—in fact, Congress in 2008 had little choice since these agencies are responsibilities of the federal government. Since the U.S. government already had preexisting obligations regarding solvency maintenance to these GSEs, the bailout funds flowing to Fannie and Freddie are really sunk costs when one considers the overall success of TARP. In other words, from the point of view of Congress in 2008, there was no choice as to whether to bail out the GSEs. This means that in order to consider the success of TARP fairly, the Fannie and Freddie situation should be considered a consequence of the previous legislation (dating back to the Great Depression) creating the GSE sponsorships, rather than the new 2008 TARP legislation. [71] [73]

The bailout funds flowing to Fannie and Freddie do not have a foreseeable stopping point. These GSEs are projected to cost around \$238 billion to restore solvency. This estimate actually climbed by around \$40 billion between 2008 and 2010. Fannie Mae continued losing money, with a posted loss of \$4.6 billion in Q4 2011. Fannie continues asking for additional bailout funds as losses post. [71]

The ongoing insolvent situation with the GSEs has prompted the Federal Housing Finance Agency and the Obama administration to create a tentative plan for abolishing the GSEs. However, such an action will prove exceedingly difficult due to the systemic role of the GSEs. Fannie and Freddie own or insure about half of all mortgages in the U.S. Fannie and Freddie, as

well as other government agencies, guarantee around 90% of new mortgages issued since the 2008 crisis. It is noteworthy that the argument that a market player could become “too big to fail” has applied most appropriately to government agencies rather than the private financial institutions it was originally used to describe. While the 2008 crisis has revealed the fundamental flaws and poor business model behind the GSEs, one must recollect that the historical roots of this problem are not in the TARP legislation but in legislation from many years ago. [71] [73] [74]

Moving back to the variable costs and decision-relevant actions of TARP, the picture becomes brighter. In February 2012, the Federal Reserve noted a profit of \$2.8 billion on the sale of a \$19.5 billion asset portfolio which partially represented the assets purchased from the fire sale of AIG and Bear Stearns. Ironically, the purchasers of the asset portfolio, designated “Maiden Lane II” after the street behind the Federal Reserve in New York, included Goldman Sachs and Credit Suisse, companies which themselves experienced much turmoil during the 2008 crisis from similar assets. The irony cut even deeper when Sachs and Credit Suisse turned around and sold a portion of these assets to the “new” AIG itself. The Federal Reserve still holds a \$17.6 billion portfolio of assets from the AIG bankruptcy designated as “Maiden Lane III.” This portfolio represents the credit default swap remnants themselves, perhaps the security most culpable in the crisis. Although the Federal Reserve and thus the public is experiencing ongoing exposure to the controversial securities behind the crisis, this exposure has proved profitable. In early 2012, the Fed announced that it would turn over \$77 billion from its TARP related investment operations in 2011 alone. [72]

The bailout's costs have been kept reasonable, even resulting in some noteworthy amounts of income for the public. While the risks taken were enormous from the perspective of

2008, hindsight is showing that the risk may not have been as great as the atmosphere of panic at the time may have led one to believe. The taking on of risk by a government on this unusual scale has been surprisingly successful. In conclusion, the bailout of 2008 has enjoyed a surprisingly successful three years of operation since this study began.

## Appendices

*Please Note: The first three appendices are presented in logical order to respond to the question raised in the first appendix: Do the MBSs and other securities behind the crisis possess fundamental value?*

### Appendix I: Mark-to-Market Accounting

Accountants are entrusted with the weighty task of “keeping score” for the world of business. They tend to create obscure rules and classifications for financial matters. Too often, these subjective, even arbitrary, accounting decisions determine who wins and who loses in the world of business.

What if a company earns income of \$10,000 and another loses \$10,000? Which company would one wish to invest in? The first, of course! But what if one was made aware that the second company uses the cash basis of accounting, while the first uses the accrual basis? What if one analyzed both companies and saw that both had the same sales transactions during the year? Unfortunately, such a scenario is entirely possible. Accounting rules—or even which set of accounting rules is chosen—can “make” a company profitable or not.

Even for someone who is totally objective, determining the profitability, revenues, and costs of a company is not the same as calculating quantifiable numbers in disciplines such as math or physics. There are those who nevertheless give the determination of these numbers a shot: they are called, fairly enough, accountants. These people try to make something entirely

subjective, such as “profitability,” an objectively measured phenomenon according to a strictly defined rule. Accounting is a surprisingly subjective discipline!

How does this affect the financial crisis? This paper has already discussed the difficulty in valuation of such assets as MBSs, CDOs, and reinsurance. Accounting rules value these assets. These values are controversial, especially with the so called “mark-to-market” rules.

But when exactly does fair value accounting (mark-to-market) apply to an MBS? It may be surprising to learn the answer: not always. Actually, it is not even most often. In fact, under 2008 principles of accounting generally accepted in the United States of America, one must all but bend over backwards to enroll balance sheet assets in fair value accounting. Following is a closer examination of the rules of accounting regarding debt instruments held by banking, lending, and finance institutions.

The first classification for debt instruments is “held to maturity.” This category is true to its name in that it is intended to contain securities that will be owned by the reporting company until they reach their maturities. This refers to loans, notes, bonds, or insurance that have a certain maturity date (as all debt must) and a certain amount of interest owed to the company holding the security. The interest payments are the incentive to invest in the security.

This category is incredibly straightforward. Companies buy bonds, or any other security, and collect interest payments until maturity. Then, they collect the original principle. In order to qualify to be an HTM (held to maturity) security, a reporting entity must have both the ability and intent to hold the security until it matures. This is simple enough; for what other reasons would a company even want to hold securities? That issue will be addressed soon.

The good news about the HTM category is that assets in it are held perpetually at cost. This means that no matter where their market value goes, they will always be held at the same

value: cost. HTM securities never affect net income, other than their interest payments. In fact, nothing ever even happens on the balance sheet of the reporting company unless the debtor company behind the debt instrument declares bankruptcy! With this rule, market fluctuations do not determine when debt is marked to market. Only actual bankruptcy, not the hint of bankruptcy making the market go down, causes losses for holding companies.

What disadvantage does HTM have then? With this category, companies need fear no balance sheet turmoil due to their securities. The disadvantage can be summarized in one key word: speculation. With HTM, companies are not able to speculate and enjoy upward appreciation in the securities on their balance sheets.

Fortunately for those interested in speculative investing, another category called “trading securities” exists. This category does allow assets to be marked to market at every financial reporting date. All market fluctuations immediately are directed to the income statement of the reporting company. As far as the debtor company goes, actual financial condition (such as solvency) is irrelevant to reporting values. Only what the market values the security at is relevant. There is no ceiling for gains or floor for losses in this category. This means high stakes speculation can easily occur—the same thrilling speculation that casino goers enjoy. And just as in the casino, one must meet certain criteria to enter this category. In fact, one must actively work to get securities classified as trading securities. Only certain firms are even allowed to use this category due to its highly volatile nature. The accountants creating this category were no doubt aware of the dangers of marking assets to market for the financial health of reporting companies, which would explain the difficulty in being able to even use the “trading securities” classification.

The last two asset classifications are “available-for-sale” (AFS) and pension plans. With AFS assets, market fluctuations do not appear in net income but in other comprehensive income, allowing companies to avoid the dangers of marking assets to market in their business operating activities. With pension plans, gains and losses due to market fluctuations are reported within a corridor, containing a ceiling for gains and a floor for losses. This reporting standard is based on the statistical idea that the market will fluctuate, but in the long-term markets will move upward. Since pension plans have a long-term focus, this method is considered appropriate. These final two categories give more credibility to the idea that directing mark-to-market accounting for debt instruments directly into the income statement is neither a common practice nor even recommended by generally accepted accounting principles. Companies who are affected by mark-to-market accounting are not victims of accounting rules; they are simply reaping the rewards of their choices.

So if companies actually choose the mark-to-market accounting rules, where does the controversy lie? How could Brian Wesbury blame 70% of the crisis on these rules? As previously discussed, the problem is that accounting valuations are often subjective. The controversy regarding mark-to-market accounting rules concerns whether the valuations they gave to MBSs held in trading securities and available-for-sale categories were objective and fair, or were biased by the unusual fluctuation in the markets at the time. [6]

There are two different views on the effectiveness of the mark-to-market accounting rules. Either:

- 1) The rules produced a correct, very low valuation of toxic assets. The rules were just the messenger, telling market participants how bad things were.

- 2) The rules did not produce a correct valuation of toxic assets. This view holds that the rule itself is responsible for unnecessarily devaluing fundamentally sound assets based on unrelated or arbitrary market fluctuation.

A third option, the option selected by the Financial Accounting Standards Board when defining Generally Accepted Accounting Principles, is that the rules sometimes result in a correct valuation and sometimes do not. However, the purpose at hand is to examine a specific application of the rules to the MBSs and other securities behind the financial crisis. Therefore, the rules must be determined to be either effective or not in this highly specific case.

#### *The Effect of Mark-to-Market on the Bailout Approach*

If the first choice is correct, then the toxic assets themselves are the problem. The bailout should focus on the institutional approach if such is the case. This is because i) buying the troubled assets themselves would be a bad investment for taxpayers, and ii) the institutions themselves would still be salvageable if the assets are able to be isolated as the problem. The institutional approach would provide funding to critical financial institutions in the economy that have been devastated by fundamentally devalued assets. Helping these institutions would be a potentially viable solution, because the institutions themselves have future potential for viability and profitability. Helping them during difficult times could theoretically salvage their potential value and prevent further economic decay.

If the second choice is correct, then the toxic assets themselves are NOT the problem: the rule that gave them an incorrectly low valuation on balance sheets is the problem. To remedy this problem, the rule must be disposed of and the assets approach to the bailout must be taken. The

assets approach demands a focus on providing financial assistance to assets themselves. The Term Asset-Backed Securities Loan Facility related to quantitative easing in March, 2009, and Public-Private Investment Program are examples of this method. If this approach is correct, then assets will gradually regain value in the markets since the assets already possess fundamental value. This occurs when the lender of last resort is willing to support the asset values by making and holding a purchase.

The bailout originally vacillated between both approaches. In March, 2009, TARP itself took an assets based approach. This does not negate the institutional approach from the original loans to AIG and others. It also does not fit with the ongoing institutional approach followed by the assistance which continues to be dispersed to Fannie Mae and Freddie Mac.

Another factor has been added with the automaker's bailout. This bailout was a clear institutional approach move to an industry outside the core of the financial crisis. This evinced an expansion of the institutional approach criteria to be defined as too economically important to fail and having future potential for profitability.

The American Recovery legislation is arguably within the broad framework of the institutional approach, at least as far as its effects strictly on TARP and the financial crisis is concerned. This is not to say that it did not have other purposes, such as helping American citizens economically. Instead, it is just an analysis of how its economic effects affected the financial crisis proper. With a view toward the necessity and ongoing profitability of the American people, infrastructure, and economy overall, the American Recovery bailout attempted to reduce the impact of the fundamentally toxic securities by improving the overall economic health and enthusiasm for investing of the individual Americans who make up the markets. The American Recovery Act was touted as a bailout of "Main Street," not Wall Street.

Whether mark-to-market accounting was to blame for part of the crisis depends on the correct answer to a single question. Which approach to the bailout is chosen also depends on the correct answer to the same question. This is the question of *whether the toxic assets had reasonably high fundamental value or not*. If they had real value, then mark-to-market accounting is to blame and the institutional approach will work. If they had little or no real value, then mark-to-market accounting is right and the asset approach will work.

Do the assets have fundamental value? The next step toward answering this question is that of determining the answer to our fundamental value issue. The following appendices on credit default swaps and naked put options address the issue of valuing the MBSs and other securities behind the crisis.

## Appendix II: Credit Default Swaps

What was the nature of the credit default swaps that insured the MBSs (mortgage backed securities), CDOs (collateralized debt obligation), and other toxic assets that created the background of the financial crisis? These CDSs transferred risk from holders of the securities to large insurers like AIG. Our search is for the fundamental value of the underlying assets. This fundamental value had high potential to be lost or overlooked within or because of the credit default swap risk transfer transactions.

“Credit default swaps” is a nice piece of financial institution jargon that immediately causes one to think of the concept of interest rate swaps. Insurance rate swaps are contractual transfers of interest payments between financial institutions based on interest rates in the economy. Essentially, they allow financial institutions to swap excess interest payments that could be received for assurance that should rates move against them, their losses will be reduced by someone else’s excess interest receivables.

Credit default swaps, though similar in terminology, are entirely different from interest rate swaps. CDSs allow one party to “swap” its acceptance of virtually unlimited risk of default on a security (meaning that the value of the security could go to zero) for receipt of a one-time or receivable payment of money. CDSs are a risk transfer, but they are ill-defined if one thinks of them in the same terms as interest rate swaps. Much more potential loss is transferred with CDSs.

Are CDSs better classified as insurance? After all, insurance was the main business of AIG the major seller of CDSs. The relevant characteristics of true insurance are:

**1) A risk transfer**

**2) Transfer of a pure, not a speculative, risk**

**3) A lack of catastrophic loss potential**

**4) An actuarially calculable premium based on past loss exposure and the law of large numbers**

Which of these categories do CDSs fall into?

1) It has been established that a clear risk transfer exists

2) This criteria is met at first. Pure risk does exist if the mortgages have already been made and the availability of the CDS does not influence the issuance of the mortgages or the derivative security. However, moral hazard comes into play here. If the CDSs availability causes new risk to be undertaken, then speculative risk has been incurred. In other words, if the insured takes on more risk because the insurance is available, then moral hazard threatens the insurer's position. When mortgages began to be issued more widely to subprime borrowers, speculative risk threatened the CDS concept.

The profitability of the insurer was the same initially whether the CDSs were issued 1) early in the game to legitimate borrowers who could afford their mortgages, or 2) speculatively later to substandard borrowers who had been solicited by mortgage initiation companies who turned around and sold their mortgages as MBSs to be insured by CDSs. In other words, by the

time subprime lending had become the profit driver of the mortgage industry, the CDS insurers were already deeply involved in speculative risk.

3) Catastrophic loss potential does exist because of the effects of interest rates. Many mortgaged backed derivative securities were issued based on adjustable rate mortgage contracts. Adjustable rate ARM mortgages were issued when rates were low. Because of mortgage amortization principles, even a slight jump in interest rates can dramatically increase the monthly payments on ARM mortgages. Thus, a catastrophe can potentially occur for CDS issuers if interest rates rise substantially and many borrowers default simultaneously.

4) The premium was not actuarially calculable based on loss potential. The relevant form of CDSs was conceived by AIG's most respected minds around 2005. MBSs were a rising concept at that time. There was simply not enough loss data historically to calculate a premium actuarially. A similar situation is encountered by any new type of insurance; for example, auto insurance when cars were first widely used. [92]

Second, was the law of large numbers at play here? For the law to be satisfied, the population must be large enough that any sample insured by the insurer experiences losses in independent, predictably frequent intervals. There were certainly enough loss exposure units insured. However, did they represent a population whose losses would occur independently of one another with predictable intervals? It has already been shown that default tendencies could potentially move together based on insurance rates. This catastrophic potential overrides the large number of exposure units. Thus, the law of large numbers is indirectly violated since the population insured moves together, taking on the characteristic of a single loss exposure unit.

*Thus, credit default swaps are not insurance.*

## Appendix III: Naked Puts

What other financial instrument is possibly comparable to a CDS? One comparable financial instrument is a naked put option. Put options are a derivative security that allows the purchaser to force sale of the underlying instrument to the seller for a fixed price at a fixed date. Put options are often settled in cash rather than securities delivery. Because of this, they take on a quasi-insurance function for institutions that purchase them to hedge underlying securities against risk of price decreases. The options play a speculative role for sellers who write them, and they take an especially speculative role for sellers who write them naked (without having a position in the underlying security). Naked put options, from the seller's point of view, are similar to credit default swaps.

A description of the characteristics of naked put options and CDSs in comparison to the characteristics of insurance follows:

- 1) They involve a risk transfer (quasi-insurance, meaning they do not meet the qualifications of true insurance, but are still used to hedge risk)

- 2) Pure risk is involved if the options are written with a position in the underlying security. If the institution selling the put has a position in or desires to acquire the security, its risk is in pure form since it is exposed to the underlying security. Speculative risk exists if the options are written naked. In this case, there is no concern for the underlying security, but simply

speculation on its value. Risk that did not before exist is created for the seller. The chance is one of profiting if speculation is correct, much like gambling in a casino.

3) Catastrophic losses are possible with naked put writing. The options expose the seller to risk of losing the entire value of the underlying option. That is to say, if the underlying security becomes worthless, then the option writer must still buy it at full price as specified by the option contract. The more options are sold, the more catastrophic the loss potential becomes.

4) Actuarially calculable premiums are difficult to determine for options. Models such as the Black-Scholes Option Pricing Model exist, but these models only provide an estimate of value. Ultimately, markets determine option premiums. Historical loss exposures are not very useful to determining optimal premiums in general. Data on historical volatility is frequently available for options but has little predictive relevance for determining the value of the risk portion of the optimal premium from an actuarial standpoint. The law of large numbers is also irrelevant to option writing. Options are regularly written on thinly traded securities.

Naked put options and CDSs share a similar lack of each of these characteristics except for risk transfer. The only real difference is that CDSs do not involve a right to sell a security, but simply a right to receive the same amount of money that would have been received had the security been sold at a contract price. CDS insurers like AIG agreed to pay nearly unlimited losses if a defined “credit event” should occur, such as default. The difference becomes nothing more than a balance sheet difference. Whether the security itself is transferred or not—if all the risk is transferred the same result is reached. Just as many put options go unexercised, so most

CDSs will never require payment on a loss, in theory. The problem with that theory is that if CDSs insure securities with a high statistical correlation of default, a CDS insurer could be exposed to a system risk that a writer of puts may not experience. Naked puts and CDSs are both paths to the same result of a state function. [28]

The resulting situation for AIG created a large insurance firm with a balance sheet filled with the equivalent of naked put options. This is an abhorrent situation for any financial institution that must claim an ability to pass a solvency or risk test. AIG and other CDS sellers seriously compromised their positions as viable ongoing concerns by saddling themselves with this risk.

Why would AIG and other CDS insurers take on the enormous risk of these CDS transactions? These swaps allow the seller to record huge inflows of cash payments and receivables for an insurance transaction that may extend over many years to come (such as 15 or 30 years for MBSs). There is a short-term incentive to issue CDSs, if one ignores the long-term risk associated with selling them. This is especially true if CDSs in general are not recognized by investors or regulators as possessing a high level of risk.

## Appendix IV: Fundamental Values

What does all this mean for the fundamental value of the underlying securities, our original question? To answer this, it is crucial to know the definition of value as it relates to the mortgage derivative securities. For the purposes of a mortgage, the value is the stream of payments that make up the mortgage's amortization schedule and prepayments if they exist. Should these payments be suspended, the mortgage is in default. The underlying security to the mortgage (the house) becomes the source of value. In this case, the measure of value is home prices. For an MBS, the sources of value are the same, since the aggregate payments make up the mortgage. So far, home prices and payment streams are the sources of value for a mortgage and an MBS.

However, the situation changes dramatically when the MBS is insured by a CDS. The ability to sell the MBS in a free market hinges on the risk being transferred to a CDS. In other words, there is a large valuation difference between selling an uninsured and an insured MBS. An insured MBS will have a far more stable price curve than an uninsured MBS. An insured MBS is roughly equivalent to a bond, since the payment stream is guaranteed by a large company. Indeed, insured MBSs including those sold and guaranteed by Fannie Mac and Freddie Mac historically sold for a high price based on this very logic. [75]

What happens when the insurance on the MBS goes into default? The answer is a financial crisis. This is exactly what happened in September, 2008, when AIG (and other similar firms) failed because of the catastrophic CDS losses incurred. With mark-to-market accounting, MBSs on balance sheets all over the U.S. plummeted in value when the disappearance of CDS insurance occurred in the wake of AIG and similar firms' failures.

Thus, the source of value for an insured MBS is dependent on three factors, not two.

These three factors are, in order of ability to collect:

- 1) **Stream of payments (less prepayments)**
- 2) **The availability of quasi-insurance**
- 3) **The stream of payments**
- 4) **The house or real estate value.**

Why is the stream of payments mentioned twice? It is the primary source of collection of value, but if it defaults, the quasi-insurance is next. When the insurance defaults, the original MBS holder goes back to whatever stream of payments remains to collect whatever value is possible. If the situation then leads to a default, one is all the way back to the house with which the mortgage originated. This home's value on the market is the final source of value for the MBS.

This research is now closer to answering the question about what fundamental value the toxic securities have in the midst of the financial carnage. There are three places to look for value. As far as the quasi-insurance credit default swapping goes, its sellers are only able to guarantee their products about as much as an inexperienced speculative investor with a little capital to bring to the table can guarantee the naked puts he writes. Thus, the second source of value on our list does not look that promising.

If the stream of payments has already defaulted enough to bankrupt the quasi-insurance peddling party, then one should not rely exceedingly on that same stream of payments for a

source of value. Real estate values plummeted in the financial crisis, so they are not a good source of value either. Remember the accounting principle that would require a markdown of assets at this point—that old culprit called “mark-to-market” accounting. The mark-to-market accounting rules match well with the result of applying the three fundamental valuation principles to the assets in consideration.

## Appendix V: Other Bailout Activities of Note

In 2008 and 2009, stimulus money was in the process of being distributed to financial institutions. At the same time, bailouts were being created and expanded to include automakers, working Americans, and motorists who sold their “clunker” automobiles. Consequently it is difficult to isolate TARP. Instead, one must consider the family of TARP, the bailouts inspired by TARP, and the expansion and revisions to these bailouts. Following is a brief summary of the main events affecting the bailout family.

**Automakers’ Bailout:** In December, 2008, Congress loaned roughly 17 billion dollars to General Motors and Chrysler. In February, 2009, roughly \$22 billion more was loaned under the Obama administration. GM went on to post record losses of 30.9 billion in 2008. In April, Chrysler filed for Chapter 11 bankruptcy. In June, GM filed for Chapter 11 bankruptcy as well. The US Treasury received an agreement to take possession of 60.8 percent of GM’s stock as part of the bankruptcy. [65]

**Fannie Mae and Freddie Mac:** These quasi-governmental agencies continued to request bailout funds in March, May, August, and November of 2009. In December 2009, the Treasury removed the former limits of \$400 billion on aid to Fannie and Freddie. The bailout of Fannie Mae and Freddie Mac has taken on a life of its own, separating itself from TARP proper. As of March 2012, Fannie Mae had posted losses of \$2.4 billion in Q4 2011, prompting it to ask for an additional \$4.6 billion in funds from the government. [72]

**Public-Private Investment Program:** This program partnered with the Federal Reserve's Term Asset-Backed Securities Loan Facility (TALF). It began in March, 2009, and was intended to provide renewed liquidity to markets where toxic assets from the financial crisis had been traded. The plan dealt both with loans held directly on bank's balance sheets as derivative securities. This program remained closely tied to TARP, but the potential to purchase securities was leveraged. Asset purchasing may have reached levels as high as \$500 billion or \$1 trillion with help from TALF and private investing.

**American Recovery and Reinvestment Act of 2009:** This act is commonly known as "the stimulus," differentiating it from the bailout. However, it was born out of the Emergency Economic Stabilization Act and TARP. Congress touted it as a continuation of the Keynesian tradition of increasing government spending during a recession, and as a "bailout" to average Americans, comparable to what TARP did for commercial finance. The value of this act as originally passed is \$787 billion. These funds were to be procured from and are closely linked with the federal budget. Specific expenditures included the American Opportunity credit for college students, food stamp program expansion, home buyer tax aid, and appropriations for Amtrak. The largest portion of spending was allocated to tax breaks. State and local government fiscal aid, infrastructure investment, and health care were other major categories. The Congressional Budget Office released a report that the entire original \$787 billion figure would eventually be added to federal budget deficits until 2019. [21] [27]

The expenditures of this act expanded federal spending dramatically. This expansion began in fiscal year 2009 and continued through 2010. The American Recovery Act is indisputably a throwback to the Keynesianism of the Great Depression. This revives, in the

context of the modern economy, the old Monetarist/Keynesian debate about fiscal policy during recession. [85]

**Car Allowance Rebate System:** This program is unofficially known as Cash for Clunkers. It allowed certain older cars to be traded in for new Detroit made models. The older cars, which were said to be inefficient and environmentally detrimental, were turned over to the government and destroyed. This program was passed and begun in July, 2009, and ended in August of that year. Costing \$3 billion, the policy was not directly related to TARP or the American Recovery Act. It was an independent program falling under a broad congressional goal of “stimulus.” It cost taxpayers approximately \$24,000 per additional car traded in, adding the perception of government waste surrounding bailout and stimulus activity. [86]

## Sources

### Web sources:

1. <http://thexbroker.com/2006/09/22/speculating-mortgage-interest-rate-futures/>
2. [http://www.usatoday.com/money/perfi/housing/2005-06-20-high-real-estate\\_x.htm](http://www.usatoday.com/money/perfi/housing/2005-06-20-high-real-estate_x.htm)
3. <http://www.federalreserve.gov/Pubs/arms/armsbrochure.pdf>
4. [http://www.washingtonpost.com/wp-dyn/content/article/2007/03/13/AR2007031301733\\_pf.html](http://www.washingtonpost.com/wp-dyn/content/article/2007/03/13/AR2007031301733_pf.html)
5. <http://www.propublica.org/special/bailout-aftermaths#lockheed>
6. [http://www.forbes.com/2008/09/29/mark-to-market-oped\\_cx\\_0929gingrich.html](http://www.forbes.com/2008/09/29/mark-to-market-oped_cx_0929gingrich.html)
7. <http://eh.net/encyclopedia/article/butkiewicz.finance.corp.reconstruction>
8. [http://www.usatoday.com/money/economy/2008-11-03-economy-depression-recession\\_N.htm](http://www.usatoday.com/money/economy/2008-11-03-economy-depression-recession_N.htm)
9. <http://www.istockanalyst.com/article/viewarticle/articleid/2915581>
10. <http://www.marketoracle.co.uk/Article7099.html>
11. <http://www.u-s-history.com/pages/h1523.html>
12. <http://www.guardian.co.uk/business/2009/mar/18/fed-begins-quantitative-easing>
13. [http://www.rgemonitor.com/financemarkets-monitor/254942/accountants\\_needed\\_at\\_the\\_treasury](http://www.rgemonitor.com/financemarkets-monitor/254942/accountants_needed_at_the_treasury)
14. <http://www.fdic.gov/bank/historical/s&I/index.html>
15. [moneycentral.msn.com/content/P149596.asp](http://moneycentral.msn.com/content/P149596.asp)
16. [www.concordcoalition.org/files/uploaded\\_for\\_nodes/FINANCIAL\\_CRISIS\\_TIMELINE.doc](http://www.concordcoalition.org/files/uploaded_for_nodes/FINANCIAL_CRISIS_TIMELINE.doc)
17. <http://www.econlib.org/library/Enc/SavingsandLoanCrisis.html>
18. <http://www.hawaiireporter.com/story.aspx?f26743ad-8a11-43ab-8dd7-a7ea8c3ae193>
19. <http://www.hawaiireporter.com/story.aspx?f26743ad-8a11-43ab-8dd7-a7ea8c3ae193>
20. <http://www.washingtonpost.com/wp-dyn/content/article/2008/06/16/AR2008061602279.html>
21. [http://www.criminalawlibraryblog.com/subprime\\_crisis\\_timeline.pdf](http://www.criminalawlibraryblog.com/subprime_crisis_timeline.pdf)
22. <http://lauder.wharton.upenn.edu/pdf/Chronology%20Economic%20Financial%20Crisis.pdf>
23. <http://www.ftiec.gov/cra/>
24. <http://www.foxbusiness.com/story/markets/economy/timeline-financial-crisis/>
25. <http://www.iht.com/bin/printfriendly.php?id=16318432>
26. <http://www.hud.gov/offices/fhco/lending/subprime.cfm>
27. <http://www.washingtonpost.com/wp-dyn/content/article/2008/08/18/AR2008081802111.html>

28. [http://www.isdacdsmarketplace.com/about\\_cds\\_market/cds\\_faq](http://www.isdacdsmarketplace.com/about_cds_market/cds_faq)
29. <http://news.bbc.co.uk/2/hi/business/7096845.stm>
30. <http://www.investopedia.com/ask/answers/07/securitization.asp>
31. <http://www.sec.gov/answers/mortgagesecurities.htm>
32. <http://www.newsweek.com/id/161199>
33. [http://www.northwestbronx.org/wallstreet\\_subprime.pdf](http://www.northwestbronx.org/wallstreet_subprime.pdf)
34. [http://www.fdic.gov/bank/analytical\\_fyi/2003/110403fyi.html](http://www.fdic.gov/bank/analytical_fyi/2003/110403fyi.html)
35. <http://oversight.house.gov/story.asp?ID=2255>
36. <http://www.westegg.com/inflation/infl.cgi.ma kin>
37. <http://www.federalreserve.gov/dcca/cra/>
38. [http://www.lewrockwell.com/dilorenzo/dilorenzo125.html\\_3](http://www.lewrockwell.com/dilorenzo/dilorenzo125.html_3)
39. <http://www.investopedia.com/terms/m/morallhazard.asp>
40. <http://www.chron.com/disp/story.mpl/business/6129956.html>
41. <http://www.gao.gov/new.items/d09296.pdf>
42. <http://www.heritage.org/research/economy/wm2110.cfm>
43. <http://www.treas.gov/press/releases/hp1207.htm>
44. <http://www.allbusiness.com/legal/legal-services-litigation/11727667-1.html>
45. <http://www.treas.gov/press/releases/reports/0010208%20sect%20102.pdf>
46. <http://www.treasury.gov/initiatives/eesa/program-descriptions.tip.shtml>
47. <http://www.reuters.com/article/topNews/idUSTRE4A65FU20081107>
48. <http://www.gao.gov/products/GAO-09-296>
49. <http://www.chron.com/disp/story.mpl/business/6129956.html>
50. [http://seekingalpha.com/article/115525-the-scariest-chart-ever?source=article\\_sb\\_popular](http://seekingalpha.com/article/115525-the-scariest-chart-ever?source=article_sb_popular)
51. [http://www.fintrend.com/ftf/Articles/Can\\_the\\_government\\_stop\\_great\\_depression.asp](http://www.fintrend.com/ftf/Articles/Can_the_government_stop_great_depression.asp)
52. <http://rassegnastampa.mef.gov.it/mefinternazionale/PDF/2008/2008-12-01/2008120111251318.pdf>
53. <http://marketpipeline.blogspot.com/2009/01/treasury-guidelines-for-targeted.html>
54. <http://www.nytimes.com/2009/02/12/business/12bank.html?pagewanted=2&fta=v>

55. <http://www.nytimes.com/2009/02/14/business/14nocera.html?em>
56. [http://www.heralddelaware.com/tarp-lives-treasury-continues-bank-investments\\_23592](http://www.heralddelaware.com/tarp-lives-treasury-continues-bank-investments_23592)
57. <http://www.propublica.org/article/tarp-lives-treasury-continues-bank-investments-090213#8175>
58. [http://www.latimes.com/business/la-fi-banks13-2009feb13\\_0,1272598.story](http://www.latimes.com/business/la-fi-banks13-2009feb13_0,1272598.story)
59. [http://www.hometownannapolis.com/cgi-bin/read/2009/02\\_15-37/BUS](http://www.hometownannapolis.com/cgi-bin/read/2009/02_15-37/BUS)
60. <http://www.hattiesburgamerican.com/article/20090214/OPINION01/902140302>
61. <http://www.propublica.org/article/banks-getting-tarp-money-lending-less-than-other-banks-090203>
62. [http://s3.amazonaws.com/propublica/assets/docs/sigtarp\\_090205.pdf](http://s3.amazonaws.com/propublica/assets/docs/sigtarp_090205.pdf)
63. <http://www.nytimes.com/2008/09/29/business/29rtc.html?pagewanted=2&ner=rssnyt&emc=rss>
64. **Error! Hyperlink reference not valid.** <http://www.insideronline.org/summary.cfm?id=8448>
65. <http://www.chron.com/disp/story.mpl/business/steffy/6190615.html>
66. [http://www.huffingtonpost.com/2009/02/17/largest-banks-that-receiv\\_n\\_167748.html](http://www.huffingtonpost.com/2009/02/17/largest-banks-that-receiv_n_167748.html)
67. [http://www.huffingtonpost.com/2009/01/07/porn-bailout-larry-flynt\\_n\\_155878.html](http://www.huffingtonpost.com/2009/01/07/porn-bailout-larry-flynt_n_155878.html)
68. <http://appropriations.house.gov/pdf/RecoveryBill01-15-09.pdf>
69. <http://www.npr.org/templates/story/story.php?storyId=100762999>
70. <http://seekingalpha.com/article/115106-bait-and-switch-tarp-the-rtc-and-supervisory-goodwill>

All above web sources last accessed March 2009 unless otherwise noted.

71. <http://finance.yahoo.com/news/fannie-asks-govt-almost-4-152028535.html>
72. [http://money.cnn.com/2012/02/28/news/economy/fed\\_maiden\\_lane\\_aig/index.htm?iid=Popular](http://money.cnn.com/2012/02/28/news/economy/fed_maiden_lane_aig/index.htm?iid=Popular)
73. [http://www.usatoday.com/money/economy/housing/2010-10-21-fannie-mae-freddie-mac-bailout\\_N.htm](http://www.usatoday.com/money/economy/housing/2010-10-21-fannie-mae-freddie-mac-bailout_N.htm)
74. <http://www.time.com/time/business/article/0,8599,1822766,00.html>
75. <http://oversight-archive.waxman.house.gov/documents/20081022102221.pdf>
76. <http://www.stanford.edu/~johntayl/Taylor%20TARP%20Testimony.pdf>
77. [http://www.pbs.org/newshour/extra/video/blog/2008/09/current\\_financial\\_crisis\\_echoe.html](http://www.pbs.org/newshour/extra/video/blog/2008/09/current_financial_crisis_echoe.html)
78. [http://findarticles.com/p/articles/mi\\_hb5246/is\\_2\\_66/ai\\_n29239471/](http://findarticles.com/p/articles/mi_hb5246/is_2_66/ai_n29239471/)
79. [http://www.newyorkfed.org/research/staff\\_reports/sr318.pdf](http://www.newyorkfed.org/research/staff_reports/sr318.pdf)

80. [http://www.nytimes.com/2008/09/29/business/29rtc.html?pagewanted=2&\\_r=1&ref=mortgagebackedsecurities](http://www.nytimes.com/2008/09/29/business/29rtc.html?pagewanted=2&_r=1&ref=mortgagebackedsecurities)
81. [http://www.archive.org/stream/resolutiontrustc00unit/resolutiontrustc00unit\\_djvu.txt](http://www.archive.org/stream/resolutiontrustc00unit/resolutiontrustc00unit_djvu.txt)
82. <http://learn.westlawbusiness.com/CurrentsExtra/ShowMeMoney.html>
83. <http://www.cnbc.com/id/31524954/#sno>
84. <http://uscode.house.gov/download/pls/12C52.txt>
85. [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111\\_cong\\_bills&docid=f:h1enr.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.pdf)
86. [http://money.cnn.com/2009/10/28/autos/clunkers\\_analysis/index.htm](http://money.cnn.com/2009/10/28/autos/clunkers_analysis/index.htm)

All above web sources last accessed March 2012 unless otherwise noted.

### Periodicals Sources:

87. "A Crack in the System," "Downgrades, Downfall." Two of a three part series in *The Washington Post*, Jan. 12-18, 2009. Weekly edition.
88. "Broken Banks: The Bailout is a Bust." *Business Week*, February 9, 2009. Weekly edition.
89. "Surprise! The Big Bad Bailout is Paying Off." *Fortune Magazine*, July 25, 2011. Weekly edition

### FDIC Sources

90. *Politics and Policy: The Creation of the Resolution Trust Corporation* by Lee Davis. FDIC Banking Review, Vol. 17, No. 2, 2005. Accessed at [fcx.fdic.gov](http://fcx.fdic.gov).
91. *The Cost of the Savings and Loan Crisis: Truth and Consequences* by Timothy Curry and Lynn Shibut. FDIC Banking Review, Vol. 13, No. 2, 2000. Accessed at [fcx.fdic.gov](http://fcx.fdic.gov).

### Book Source

92. Lewis, Michael. *The Big Short: Inside the Doomsday Machine*. New York: W.W. Norton & Company. 2010.

### Interview Source

93. Cochrane, John, PhD. Professor of Finance at the University of Chicago Booth School of Business. Personal interview. January 2011.