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"The Next Financial Crisis"

by

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The Next Financial Crisis

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ABSTRACT

The examination of U.S. crises reveals that the current financial crisis follows past patterns. An investment bubble creates excess demand for new financing instruments. During the railroad bubbles of the nineteenth century loans were issued at a pace higher than many companies could pay back. The current housing bubble originated from issuing sub-prime mortgages that assume that housing prices would only rise. The increased demand for credit induces financial innovations and instruments that circumvent existing regulations. Inevitably, the bubble bursts. The history of financial crises teaches that policy reforms and new regulations cannot prevent future financial crises.

JEL Classification: E0, E3, E44, E5, E6, N0, N1, N2, G0, G18, G38

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The Next Financial Crisis

I. INTRODUCTION

The current financial crisis that originated in the United States of America has become a catalyst for global crises. What began as the bursting of a housing bubble in the United States, resulted in a major international financial crisis. How does this current period of economic chaos compare to the financial crises of the past? By examining the major financial crises, the paper indicates commonalities among them. Based on this analysis, one may answer the question as to whether the financial regulations proposed by the United States and other countries are appropriate for the current financial crisis.

The paper is organized as follows. Section II provides a literature review. Section III discusses the early United States banking panics in the 19^{th} century. Section IV explores the crises of the 20^{th} century and compares them to those of the previous century. Section V explains the causes and effects of the current financial crisis and compares them to previous financial crises. Section VI concludes.

II. LITERATURE REVIEW

The recent recession has stimulated renewed interest in the causes and effects of financial crises. Many papers theorize various causes in hopes of finding a common pattern. Bordo (2003) examines booms and busts in the United Kingdom and the United States. He concludes that recessions originated in stock market crashes deepened only if there was already financial instability. This conclusion is supported by the recessions prior to World War II in the United States, where recessions often involved both banking panics and financial distress.

Reinhart and Rogoff (2008, 2009A, 2009B) present evidence that these crises are not limited to the U.S. They claim that any parallels drawn between crises in the United States can be applied to other countries. Thus, the analysis of this paper, although dealing mainly with crises in the United States, is applicable to other countries.

Klomp (2010) employs 132 banking crises across 110 countries since 1970 by use of a random coefficient model. He concludes that credit growth, the Gross Domestic Product (GDP) growth rate, and the real interest rate are on average the most important indicators of a banking crisis. Yet, none of these variables is significant in more than 60 percent of the crises. Klomp thus concludes that there is no common factor in causing crises.

Garcia-Herrero and Del Rio (2003) use a sample of seventy-nine countries between 1970 and 1999. They find that when the objective of the central bank is price stability, the likelihood of a banking crisis is reduced. Čihák (2007), utilizing a dynamic-panel model for the years 1985 until 2005, shows that the more independent the central bank is, the more stable its financial institutions are. Thus, the less politically constrained the Central Bank of a country is, the faster and more appropriate its actions are in preventing financial distresses.

Demirgüç-Kunt and Detragiache (1998) and Laeven and Valencia (2008) identify crises by determining if one of several situations occurs. These situations include the ratio of non-performing assets to total assets in the banking system exceeding ten percent, whether the cost of a government rescue operation is at least two percent of GDP, if the banking sector problems result in a nationalization of banks, or a large bank run takes place.

Kaminsky and Reinhart (1999) conclude that crises are typically preceded by a multitude of weak and/or deteriorating economic fundamentals. It is rare for speculative attacks to cause a crisis when economic fundamentals are robust. They conclude that banking crises often precede balance-of-payment misalignments, not necessarily exchange rate speculation. Moreover, the evidence indicates that financial crises are significantly more severe when simultaneous banking and currency runs occur.

Boyd, Nicolo, and Loukoianova (2010) question whether a "banking crisis" is actually a crisis in the banking system or just a response to government interventionist policies. They use a simple model to derive consistent measures of bank systemic shocks, as in Boyd, 2010. They show how the bank market structure, deposit insurance, external shocks and currency crises each affect systemic financial shocks and the government responses associated with them.

III. THE NINETEENTH CENTURY BANKING PANICS

Up until the establishment of the Second Bank of the United States in 1816, the United States' economy was most affected by changes in the European economies. Therefore, international conflict was a primary source of economic instability. Laws including the Embargo Act of 1807 caused great economic strife, but were mainly efforts to prevent America's involvement in the Napoleonic wars. The War of 1812 between the British and the United States adversely affected the United States economy, but in both of these cases, the roots of financial conflict were outside the bounds of financial regulation.

This first financial crisis was the result of the United States' interaction with speculation. Haulman, (2002) concludes that the U.S. did not anticipate the decline in European demand for agriculture following the end of the Napoleonic wars. In order to prevent Americans from purchasing land through credit and help landowners, President Monroe passed two bills including the Land Act of 1820 and the Relief Act of 1821. The panic ended after the passage of these Acts, in 1823.

In 1837, widespread speculative fever led to a bank failure as President Andrew Jackson required payments to be in gold and silver rather than government issued currency. Merely two years later, in 1839, a rise in international interest rates negatively influenced the already troubled economy and resulted in a depression, which lasted until 1843.

The next major crisis was caused by the westward expansion of the United States and the advent of the railroad. The burst of a railroad bubble led to several bank failures in the years following 1857. The closure of banks, such as Ohio Life and Trust in New York City, was caused by speculation in western land and was accompanied with issues of embezzlement. This closure resulted in a series of bank runs in New York City that extended outside of the city due to a drop in stock market prices. This series of difficulties continued, resulting in the Panic in New York City on September 26, 1857. Following this panic, banks were forced to suspend payment for two months to ease the situation.

The next financial crisis, in the year 1873, was an extension of the previous crisis. Another railroad bubble emerged, and eventually the railroads became over-extended and were unable to pay their debt obligations. The failure of Jay Cooke & Co. on September 18th, 1873 precipitated a stock market crash, which in turn caused a banking panic. Banks suspended payments until November 1st.

As in many of the previous crises, an intense period of speculation preceded the Panic of 1893. This caused another railroad bubble. This inevitably burst and resulted in the bankruptcy of the Philadelphia and Reading Railroad Company. A series of bank runs followed, which led to more railroad and bank bankruptcies. This panic was trailed by a drop in the national amount of gold due to over-productive silver mining, making gold relatively more valuable. People traded their silver for gold until eventually the U.S. banks reached their bottom limit for gold storage, leading to further bank panics.

The first panic of the twentieth century, the Crisis of 1907, was similar to the crises of the preceding century. It led to the creation of a central bank in the United States, the Federal Reserve. The cause of this crisis was the failed attempt to corner United Copper Co. by F. Augustus Heinze, which led to the collapse of one of the major investment houses, the Knickerbocker Trust, and widespread bank runs. During this panic, J.P. Morgan intervened and organized a group of bankers to inject liquidity into the New York Stock Exchange and New York City banks. This act and the apparent vulnerability of the system encouraged the creation of the Federal Reserve.

There were some distinctive features of the nineteenth-century crises including: the lack of a central bank, a commodity based currency, and a fragmented banking system. The lack of a central bank made it extremely difficult to inject liquidity into the financial system in times of crisis. Moreover, due to a commodity based standard the money supply could not increase, furthering the effects of the initial liquidity crisis. In addition, the U.S. suffered from a fragmented banking system, mostly because of the prohibition on branch banking. Even the term "banking" was narrowly defined, and led to unregulated financial intermediaries that were uncontrollable by the government. Despite this problem existing for nearly two centuries, the government has been unable to resolve it and unregulated financial intermediaries remain a problem today.

Due to the lack of a central bank, the burden of increasing public confidence was left to private citizens such as J.P. Morgan. These crises occurred when the economy was already in a strained state, and bubbles caused the economy to plummet. In most of these cases, the bubble was in the railroad industry. Perhaps the most remarkable aspect of each of these crises is that they started outside of the regulated financial sector. This, as will be shown below, is similar to 20th and 21st century crises.

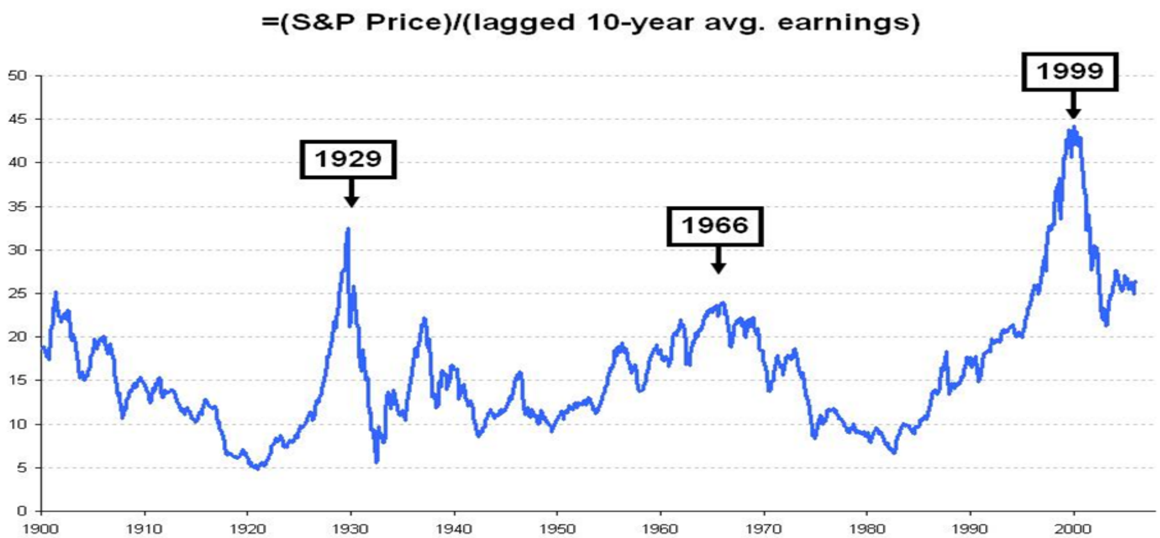
IV. THE 20TH CENTURY CRISES

The financial landscape of the twentieth century changed due to the Federal Reserve Act of 1913, which created the Federal Reserve Bank (Fed). The Fed experienced a period of initial success, with no banking panics between the years of 1915 and 1929. Yet, the creation of the Federal Reserve created a moral hazard as financial intermediaries engaged in riskier financial behavior due to the increased financial protection the Fed provided.

The first major crisis of the twentieth century was the Stock Market Crash of 1929. This is one of the most significant and devastating periods in the history of the United States. Because many banks invested the deposits of their customers into the New York Stock Exchange (NYSE), Americans completely lost their life savings. This drove the United States into the most severe recession it has ever experienced, known as the Great Depression. It took twelve years for the United States to return to its previous potential Gross Domestic Product. The Dow Jones Industrial Average (DJIA) did not recover to its previous high of 381.17 until the year 1954, twenty-five years after the crash.

The causes of the crash were similar to previous crises, but the consequences were very severe. The crash was preceded by a speculative bubble, which was mostly driven by new technologies and industries, like the electronic and automotive industries. This resulted in a period that was known as the "Roaring 20's." The average Price to Earnings (P/E) ratio in September 1929 was at a high as 32.6 with 16 percent of U.S. households investing in the stock market (Figure 1). This was a dramatic increase from prior years, and, represented potential widespread effects to the entire economy.

Figure 1:Historical P/E Ratios



Source: McDuff (2006)

The initial reaction of the government was to impose stricter regulation on the financial industry. The Glass-Steagall Act of 1933 was the main regulation passed during this period. In order to limit the scope of financial institutions, this act divided banks into separate categories including commercial banks, savings and loans associations, insurance companies, and investment banks, each with their own regulations. This Act also created the Federal Deposit

Insurance Corporation (FDIC) which insured consumers in case of bank runs. The Act gave the government more instruments to intervene in financial markets during crises.

After the passage of Glass-Steagall, there were no major crises until the 1985-1990 Savings and Loans (S&L) Crisis. Following the Second World War, banks had very high liquidity and low-risk portfolios, which led to a lower bank failure rate. However, in response to increased inflation and regulation, which limited the interest rates paid to depositors, and coupled with a portfolio that was aimed at the mortgage market, the U.S. Congress deregulated the S&L institutions in 1980 and 1982 to improve the viability of these institutions. As a result, the S&L institutions had many of the capabilities of commercial banks, without the associated regulations. This was a major factor in causing the 1985 crisis. This pattern of regulation circumvention is going to repeat in future panics.

The deregulation of the S&L Associations encouraged them to take additional risks, while still keeping depositors safe through deposit insurance. This excessive risk was channeled into the real estate market. As interest rates rose and confidence waned, house prices fell and numerous S&L institutions failed. In response, the government eliminated anti-branch banking laws and repealed the restrictive Glass-Steagall Act. Additionally, the insurance on deposits expanded, increasing the likelihood of risky behavior due to the government protection.

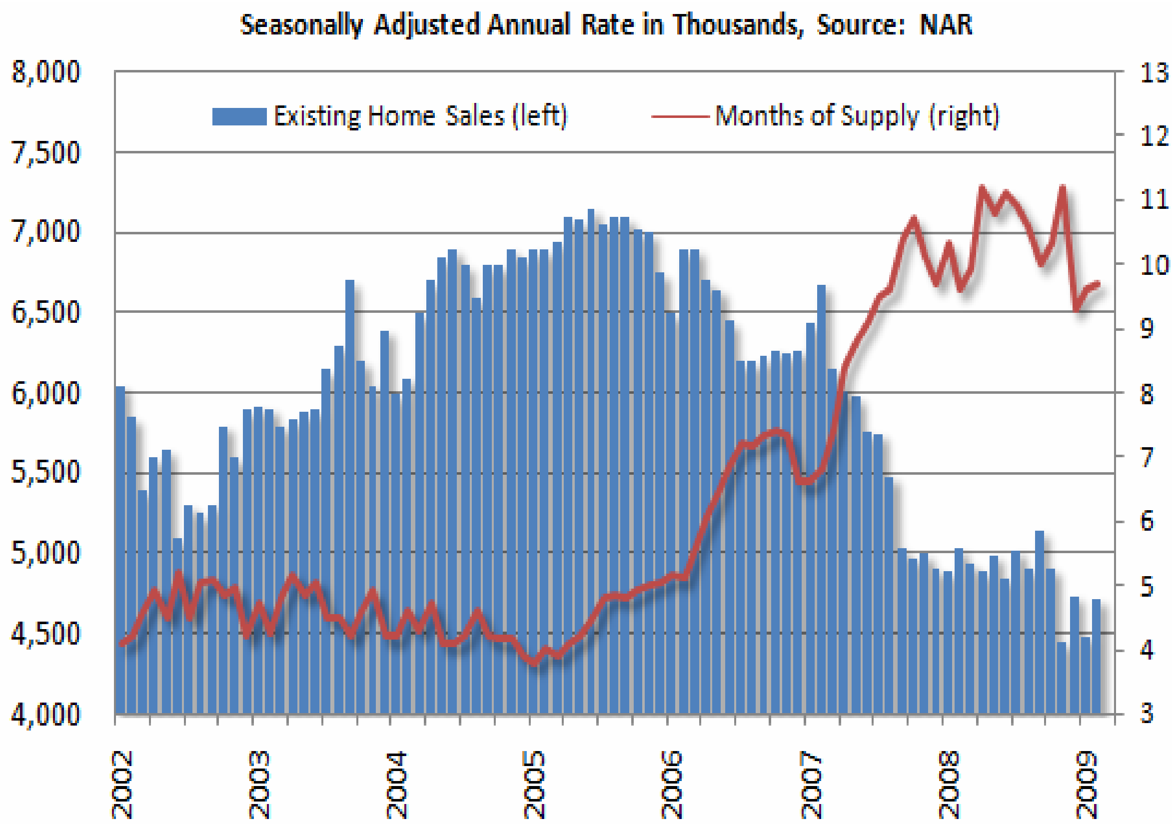
The financial crises of the twentieth century shared some particular commonalities. In the major crises, an investment boom was initiated by a new financial opportunity such as real estate, automobiles, or electronic technology. This led to the inadequately regulated financial institutions to engage in risky ventures and created a speculative bubble. This bubble later burst and caused a financial crisis. In all cases discussed thus far, a major factor in each financial downturn was the exploitation of unregulated financial institutions.

V. THE CURRENT FINANCIAL CRISIS

The current financial crisis is considered by many to be the worst downturn since the great depression. The causes of this recent crisis are many, but the greatest factor was the housing bubble. This dramatic decline in housing prices was unprecedented in its scale (see, S&P/Case Shiller Home Price Indices, 2010). Figure 2 shows existing home sales and inventory before and after the bubble.

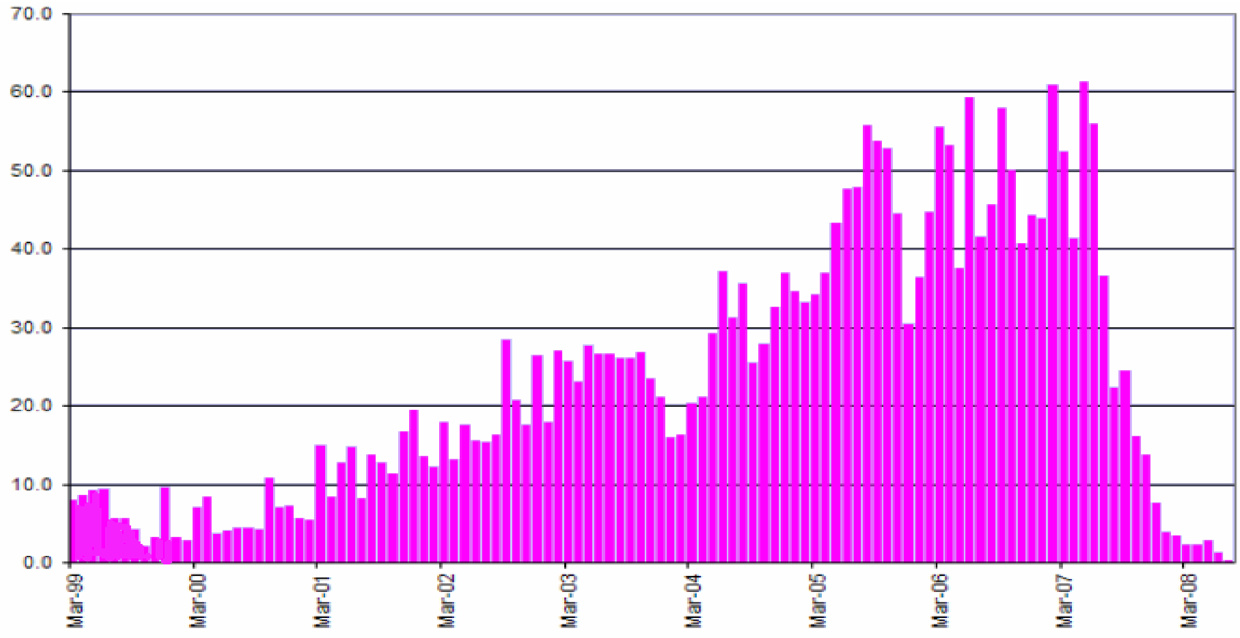
This situation was exacerbated by the recent subprime mortgage trend. Banks looked for a way to meet the high demand for mortgages through the creation of newly-designed and vaguely understood financial instruments, such as CDOs (Collateralized Debt Obligations) and MBSs (Mortgage Backed Securities). CDOs provided a way to spread risk away from the original securities so that the banks providing sub-prime mortgages became disassociated with the risk they created. These unregulated securities were often based on subprime mortgages. Figure 3 displays the steady increase in the issuance of mortgage backed securities and the dramatic drop following the burst of the housing bubble as people could no longer afford to pay their mortgages. Out of the eighty-million houses in the U.S., about fifty-five million had mortgages. Of those fifty-five million, four million were actually behind on their payments. In 2007, foreclosure proceedings began for about 1.5 million homes, which represented an increase of fifty percent from 2006.

Figure 2: Existing Home Sales and Inventory



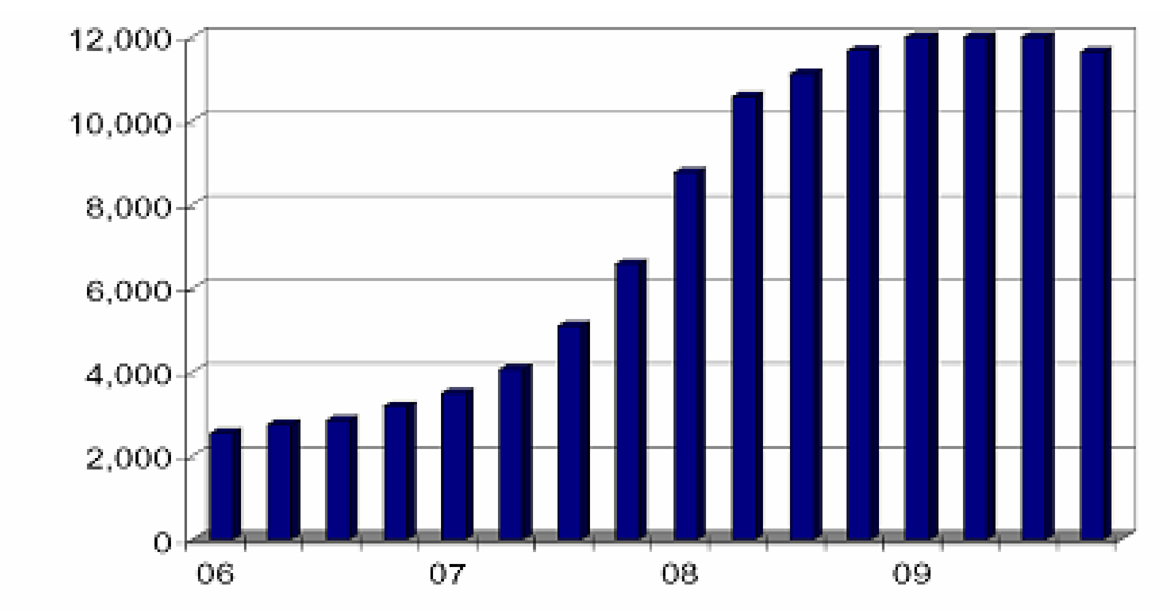
Source: Iacono (2008)

Figure 3: US Issues of Non-Agency MBS ($billion)



Source: Twiggs (2008)

Figure 4: Homeowners With Zero or Negative Equity



Source: Equifax, Moody's Economy.com

The United States has unique policies over renting and owning. On the one hand, when renting a home, a landlord has the right to evict the tenant with five-day notice if his rent payments are late. On the other hand, for mortgages, the bank must foreclose on the house and be issued a court order before the tenant can be evicted. However, there is another option for the tenant. A mortgage is based off of the value of a house at the time of purchase. Therefore, if the price of a house drops below the value of the mortgage, then the owner will be paying for a mortgage that costs more than the house is worth. In this case, the owner can walk away from this obligation with limited direct ramifications as most mortgages in the United States are non-recourse, meaning the banks cannot seize your other assets in order to repay your loan. It is thus no wonder that many preferred just to give the keys to their houses to the bank and walk away from their mortgage burden. Figure 4 illustrates the increase in homeowners with zero or negative equity in recent years.

Additionally during the bubble, the United States had a large trade deficit. This large deficit meant that vast sums of foreign funds were invested in the United States. When the crisis occurred, the money invested by foreign firms and governments, such as China and Russia, was lost, adversely affecting these companies. As these firms were forced to take losses, the crisis spread to other countries. In addition, due to the involvement of foreign government in financing the U.S. debt, it limited the possibility of not bailing out these highly indebt big financial institutions. Moreover, it is estimated that forty percent of total U.S. Bank assets were in "Shadow Banking," or non-bank lending institutions that were not federally controlled (Geithner 2010). This explains the extent of the bubble as financial institutions attempted to seek small spreads with significantly increased risk. Without transparency, including the off-balance sheet activities of banks, people could not make well informed investment decisions and many lost substantial amounts of money.

The collapse of Bear Stearns on August 1, 2008 marks the turning point from the burst of a housing bubble to a widespread financial crisis. Bear Stearns was one of the largest holders of mortgage backed securities. Although the company had enough capital to cover the losses it incurred, investors became less confident in the company and a bank run occurred. This led to a precipitous drop in its stock price as shareholders rushed to sell their shares. The Federal Reserve Bank helped J.P. Morgan Chase to purchase this company during the weekend of March 24, 2008. The initial acquisition price was 2 dollars per share. This price increased to 10 dollars a share within a week in an attempt to appease the shareholders and allow the deal to be finalized. Confidence in the market was not restored, and soon other holders of mortgage-backed securities began to fail.

The widespread decline in the financial services sector led to decreases in employment, particularly in other service sectors. The decline adversely affected other industries including the durable goods sector, which is highly sensitive to the availability of credit. It also impacted the non-durable goods as many heavily indebted consumers lost their jobs. By October 2009, the unemployment rate rose to 10.1%. The entire value of home equity in the United States dropped from $13.3 trillion to $8 trillion, a loss of $5.3 trillion. Investment assets lost $3.5 trillion. Compared to the current United States GDP of $14.26 trillion this is a massive amount of wealth destruction.

Despite the complexity of the recent crisis, the similarities with previous episodes are apparent. In all cases, the crisis followed a bubble. In each case, the difficulties originated in lightly regulated financial institutions and instruments. These financial crises affected other sectors of the economy as credit became scarce. The stock market crash of 1929 led to an overall drop in the industrial sector. Similarly, the current recession with its credit crunch forced car companies like General Motors and Chrysler into prearranged bankruptcies where severe restructuring was only avoided by government assistance.

The United States reacted more aggressively than in previous crises. First, President George W. Bush signed the Troubled Asset Relief Program (TARP) on October 3, 2008. This program attempted to allow the Fed and Treasury to purchase troubled assets from financial institutions in order to increase confidence in the financial sector. However, this program was not successful, and instead became a recapitalization of banks, such as Goldman Sachs and Citigroup as well as other large troubled companies, for example GM and Chrysler. Under the Obama Administration, which took office in January 2009, the government approved an additional $787 billion stimulus package. Moreover, the Federal Reserve dramatically expanded the monetary base through lowering the Federal Funds Rate and quantitative easing, expanding the Federal Reserve's balance sheet.

While the government handed billions of dollars to various companies, it recently passed the Dodd-Frank Regulatory Reform Bill. Table 1 provides details of the U.S. reforms. This bill establishes a new body that will protect consumers, the Consumer Financial Protection Bureau. This Bureau will have the power to create rules for any financial entity, including banks, nonbanks, and credit unions with assets of $10 billion. This bill gives the United States government more control during periods of impending crises, an important step considering the causes of the most recent crisis (Delaney and Nasiripour, 2010). Paul Volcker, former Federal

Reserve Chairman and the current chair of Barack Obama's Economic Recovery Advisory Board also proposed that banks should be restricted in making speculative decisions using taxpayer-backed money (Appelbaum and Cho, 2010). This proposal was signed into law by President Obama on July 21, 2010.

Table 1: Regulation Changes for United States of America

	Effect	Differences between House/Senate	Proposals Omitted/Defeated
Shareholder Protections	-Executive compensation set by independent directors -Shareholders have non-binding vote	-Senate – Requires executives to repay earnings based on inaccurate financial statements	-Concrete limits on executive compensation -Bonus tax
Proprietary Trading	Volcker Rule – restricts proprietary investing	-House – does not contain Volcker Rule	-Restoration of barrier between commercial banking and Wall Street trading
Investor Protections	-Companies selling complex securities must retain portion of risk -Investors can sue credit ratings agencies	-House – risk retention for basic securities -Senate – New federal system for assigning work to ratings agencies	-Change business model of ratings agencies to remove conflict of interest
Shareholder Protections	-Executive compensation set by independent directors -Shareholders have non-binding vote	-Senate – Requires executives to repay earnings based on inaccurate financial statements	-Concrete limits on executive compensation -Bonus tax
Proprietary Trading	Volcker Rule – restricts proprietary investing	-House – does not contain Volcker Rule	-Restoration of barrier between commercial banking and Wall Street trading
Investor Protections	-Companies selling complex securities must retain portion of risk -Investors can sue credit ratings agencies	-House – risk retention for basic securities -Senate – New federal system for assigning work to ratings agencies	-Change business model of ratings agencies to remove conflict of interest

Source: New York Times online (Herszenhorn 2010)

Given the expansionary monetary policy and the dramatic increase in government debt, the specter of previous high inflation has reemerged. Meanwhile, Central Bank officials maintain that they will be able to raise interest rates and drain liquidity from the system as the economy recovers to avoid inflation.

The U.S. financial crisis has had significant global consequences. This makes the global response to this financial crisis even more important. The importance of global cooperation is illustrated in the following scenario. Assume that two countries have the same level of banking regulations. There is no advantage to using the banks of one country versus the other. Now assume that one country becomes more lenient in their regulations, this country would experience an influx of investors. This leads to regulatory arbitrage, where capital seeks the less restrictive regime. As one country becomes more lenient, the other country is forced to respond potentially leading to a destructive "race to the bottom" where regulations are minimized in order to attract investment. Thus, the importance of global cooperation cannot be exaggerated. This global cooperation is not going to be metalized anytime soon, because of narrow national interest. Thus, the conclusion is that financial crises are here to stay and another bubble will burst in the future. The only question is when.

The Group of 30 Report (2009) entitled "Financial Reform – A Framework for Financial Stability" calls for the reform of the world financial markets in the following areas. Financial supervision, its quality and effectiveness need to be globally coordinated and improved. Transparency of financial intermediaries needs to increase. Capital requirements need to increase taking into account the possibility of catastrophes. Better monitoring of large institutions and their risk portfolios are required. These reforms, the Report asserts, will require several years to be implemented due to the complexities of each countries political system. Based on the past experiences, these well-intended global financial reforms will be difficult to actually implement.

Despite this call for cooperation, each country needs to implement its own reforms due to different constraints each faces. However, a system for regulating the global financial market needs to be created as well to prevent rash policymaking within individual countries.

While the current crisis is certainly affecting many of the developed economies, the effects on emerging markets are varied. Table 2 overviews The World economic outlook projections for selected countries. How these emerging economies behave could determine their place in the future, post-recession economy. Emerging markets have a unique vulnerability to crises originated in the developed economies because emerging markets depend on these economies in order to export their products.

VI. CONCLUSION

The examination of many U.S. crises reveals that the current financial crisis follows past patterns. In almost every case, an investment bubble creates excess demand for new financing instruments. The railroad bubble saw loans being issued at a rate higher than any company could pay back, while the current housing bubble results in sub-prime mortgages issued that relied on the unrealistic assumption that value of housing would continue to rise. Following this trend, the demand for credit is met by financial innovations that tend to skirt regulations. Inevitably, the bubble bursts, and these unregulated financial institutions leads to bankruptcies, bank failures, and an economic recession.

It is difficult to determine who is to blame for such a catastrophe. Should the blame rest with the home buyers, the mortgage lenders, the commercial banks marketing securities, the investment banks, the investors purchasing these securities, the inattentive regulators, the historically low interest rates, government policies, or the academic economic community? The message of this article is that we are all at fault. The implication of this last sentence is that financial crises will continue to be a part of the capitalist economy. New regulations would help, but only in avoiding past crises. Once new regulations are enacted, stakeholders respond by inventing ways to circumvent them. Anyone who claims that he is smart enough to design a better regulatory system that will prevent future crises is underestimating the ingenuity of a human acting to increase their personal well-being. Of course, we can do better next time, but there are enough forces within the current system that will guarantee that regulations can and will be circumvented.

Table 2: Overview of the World Economic Outlook Projections for Selected Countries (Percent Change)

			Projections		Difference from January 2010 WEO projections	
	2008	2009	2010	2011	2010	20011
World Output	3.0	-.6	4.2	4.3	.3	0.0
Advanced Economies	.5	-3.2	2.3	2.4	.2	0.0
U.S.	.4	-2.4	3.1	2.6	.4	.2
Euro Area	.6	-4.1	1.0	1.5	0.0	.1
Germany	1.2	-5.0	1.2	1.7	-.3	-.2
United Kingdom	.5	-4.9	1.3	2.5	0.0	-.2
Emerging and Developing Economies	6.1	2.4	6.3	6.5	.3	.2
Central and Eastern Europe	3.0	-3.7	2.8	3.4	.8	-.3
China	9.6	8.7	10.0	9.9	0.0	0.2
India	7.3	5.7	8.8	8.4	1.1	.6

Source: World Economic Outlook April 2010

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