

From the Great Moderation to Uncharted Territory: Analysis of the U.S. Recovery Packages

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From the Great Moderation to Uncharted Territory:
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Abstract

The great moderation ended, at least temporarily, when defaults of mortgage-backed securities (MBS) mounted and led to a credit crunch in 2007. The root of the problem may go all the way back to the 1960s when MBS first appeared. Recent originators of MBS, however, were interested more in commissions than in quality of borrowers, leaders of banks were interested more in short term gains and bonuses than in long-term prosperity of their businesses, and political leaders were more interested in votes than in the health of the economy. When these were combined, an unhealthy outcome was bound to develop. A huge amount of money has been made available for bailouts and recoveries, with its long-term impact hanging cloudy in uncharted territory. This paper is organized in four Acts like those in a drama.

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The first conspicuous event that foreshadowed the widely-spread slowdown of the world economy during 2008 was the rapidly falling stock prices and housing prices. This paper tests the hypothesis that political and economic leaders in the U.S. were clueless as to the sequence of events when they adopted the \$700 billion bailout package in October 2008, and were moving the national economy into uncharted territory with follow-up recovery packages in 2009.

Introduction

Global economic slowdown in 2008 signaled the end, albeit temporarily, of the great moderation of steady growth, low inflation, and low rates of unemployment in advanced countries.

The Great Moderation

Although there is no consensus on its exact duration, the beginning of the great moderation is believed to be the early 1980s. The good times of the great moderation are characterized by significant reduction in fluctuations, and improvements in aggregate output, employment, and inflation. Explanations for the great moderation include (a) improved monetary policy, (b) financial innovation, (c) increased global integration, (d) better inventory controls, and (e) good luck in the form of smaller exogenous shocks. As Federal Reserve Chair Bernanke opined during his discussion of the great moderation at the 2004 meetings of the Eastern Economic Association, “Explanations of complicated phenomena are rarely clear cut and simple, and each... probably contains elements of truth.” (Davis and Kahn 2008, p. 155) It may be premature to give credit to any or all of these explanations.

It would be naive if anyone expected good times to last forever. It is yet to be known whether the latest great moderation is in a temporary halt or is over until another great moderation returns many years later. “Certainly financial markets have seen exceptional volatility recently, and some behavior in those markets has been unprecedented. Still, I am not ready to bury the Great Moderation yet — we will need a lot more very volatile data on the real side of the economy to truly depart from the experience of the past 25 years.” (Bullard 2009, p. 12) Regardless, the stock market attracted much attention as the poster child of the latest economic slowdown. Presented first in this paper is the test of the hypothesis that pre-recession increases in stock prices tend to exceed divine proportion.

Divine Proportion Hypothesis

Professor Alger tells us that men have long sought to define beauty in mathematical terms. Alger states: (Alger 1957, p. 136)

Emerson said, “We ascribe beauty to that which is simple; which has no superfluous parts, which exactly meets its end; which stands related to all things; which is the mean of many extremes.” In the papyrus of Ahmes, which tells of the building of the great pyramid Gizeh, about 4700 B.C., the statement appears: “The sacred quotient, seqt, was used in the proportions of our pyramids.” This sacred quotient of the Egyptians was known to the Greeks as the “golden section,” and in medieval times its formula came to be known as the law of divine proportion: The most beautiful division of any given length into two parts is such that the lesser is to the greater as the greater is to the whole length.

If the length of a line is 1 and the greater of its two parts is x , the equation that defines the most beautiful proportion is

$$(1 - x)/x = x/1$$

i.e.,

$$x^2 + x - 1 = 0$$

Solving,

$$x = 0.618 \text{ or } -1.618$$

Professor Alger further explains that a series of increasing panels, such as might be used from the top to the bottom of any structure, has been thought to be most aesthetic if the successive sizes were proportional to what is known as the golden series, which has the property “that each number is the sum of the two preceding numbers, while the ratio of any one to the preceding number is always 1.618.” The property “with a ratio of base to altitude equal to 1.618, has been used by architects and artists since ancient times in proportioning rooms, building, pictures, windows, etc.” (Alger 1957, p. 137)

Deviation from the Divine Proportion

To explore the possibility that pre-recession growth rates in stock prices may represent a deviation from the divine proportions, the daily data of the Dow-Jones Industrial stock price index has been collected from October 1, 1928 to February 6 of 2009 with the total number of observations being 20,277. The following six periods are identified as being periods of fastly-rising stock prices before they began to fall significantly. The second date represents the date of the highest price before downward trend began, while the first date represents the lowest price around a year or less prior to the date of the peak price:

October 9, 1928 to October 1, 1929
August 24, 1936 to August 16, 1937
August 25, 1939 to April 9, 1940
September 30, 1960 to November 16, 1961
January 27, 1972 to January 12, 1973

August 4, 1986 to August 26, 1987
 July 24, 2006 to October 02, 2007

The actual model estimated is:

$$DJ = aT^b e^{cD}$$

in which DJ is the daily Dow-Jones Industrial index, T is the trend variable with 1 for October 1, 1928, and 20,177 for February 6, 2009, and D is the dummy variable for the seven periods identified above.

Estimates of the model are the following in which figures in the parentheses are t-values for the estimated coefficients.

$$\ln DJ = -3.5589 + 1.1468 \ln T + 0.7640 D$$

(172.9558) (32.4757)

$$R^2 = 0.60$$

The average growth rate was 1.1468 for the entire period, while the growth rate during the seven periods that preceded a significant fall in stock prices was 1.9118, which is the sum of the two coefficients, 1.1468 and 0.7640. Ninety-five percent confidence intervals of the two coefficients are:

	Lower limit	Upper limit
ln T	1.1338	1.1598
D	0.7179	0.8101
	1.8517	1.9699

Even at the lower limits of the 95 percent confidence intervals, the growth rate (1.8517) exceeds the golden growth rate of 1.618. Let us explore what really has happened during the economic slowdown since 2007.

Act I: Laying the Foundation of the 2008 Credit Crunch

We now turn our attention to mundane affairs that may explain the latest deviation from the divine proportion. Let us first move the clock backward to the beginning of the 2008 credit crunch in the U.S. that led to the world-wide recession.

History of Securitization

□ Securitizing mortgages in the U.S. has a long history. In 1968, the Government National Mortgage Association (Ginny Mae) was allowed to securitize FHA/VA

mortgages backed by the U.S. government for resale in a secondary market. In 1970, the Federal Home Loan Mortgage Corporation (Freddie Mac) started selling government-backed MBS. “In 1981, the Federal National Mortgage Association (Fannie Mae) began issuing MBS, and soon after new ‘private-label’ securitized products emerged for prime loans without the backing of the government.” (Mizen 2008, p. 537) In 1982, the Alternative Mortgage Transaction Parity Act allowed variable-rate mortgages as an alternative to the fixed-rate mortgages. In 1986, the Tax Reform Act ended tax deduction for interest on loans with the exception of mortgage loans. All these changes played a role in leading to the 2008 economic slowdown.

During the great moderation of the 1990s and the early part of the 2000s, the rate of inflation was low and the economy grew steadily while countries in Asia and the Middle East started to save enormous amount of money. From 1996 to 2007, industrialized countries went from a current account surplus of \$14 billion to a current account deficit of almost \$500 billion. “At the same time, developing countries went from a current account deficit of \$82 billion to a surplus of \$760 billion.” (White House, p. 63) The influx of this capital lowered interest rates. The new wealthy were not satisfied with low interest earnings and searched for high yielding assets. Sub-prime mortgages provided the opportunity. Sub-prime mortgages have higher application and appraisal fees, higher insurance costs, higher fines for late payment or delinquency, higher probability of termination through prepayment due to refinancing or default, and importantly, higher interest rates that made these loans attractive to wealthy investors.

Why It Happened

A rapid increase in sub-prime mortgages began in 2002 following the 2001 recession. The amount was \$160 billion in 2002 but increased to about \$600 billion by 2006. The increase was fueled by several factors such as (a) an increased use of brokers and agents who worked on commission that led them to care more about quantity than quality, (b) a wide use of teaser rates in adjustable mortgages that were not sustainable, (c) executive compensation system such as bonus for short-term gains that encouraged quantity ignoring risk, and (d) political support under the guise of helping low income families to buy homes, which encouraged brokers and agents to ignore credit-worthiness of borrowers.

Commercial banks have replaced their traditional “originate and hold” model with the “originate and distribute model”. In the “originate and hold” model, banks borrow funds through short-term deposits and make long-term loans while holding onto claims until they mature. In the “originate and distribute” model, banks make loans and then sell their claims to someone else. The widespread adoption of the “originate and distribute” model may be blamed for causing the 2008 slowdown. However, securitization of claims that allowed the “originate and distribute” model has been operating at least since 1968 when the Government National Mortgage Association was allowed to securitize FHA/VA mortgages backed by the U.S. government for resale in a secondary market. More likely, the culprit was the rapid growth of MBS backed by sub-prime mortgages. “The change in the past decade has been the growth in residential MBSs backed by subprime mortgages

with a larger number of steps between originator and holder and, as a consequence, greater opacity. This has contributed to the mispricing of risk that was not properly appraised. The result is twofold: Investors are far removed from the underlying assets both physically (due to the global market of these assets) and financially (since they often have little idea about the true quality and structure of the underlying assets several links back in the chain).” (Mizen 2008, p. 550)

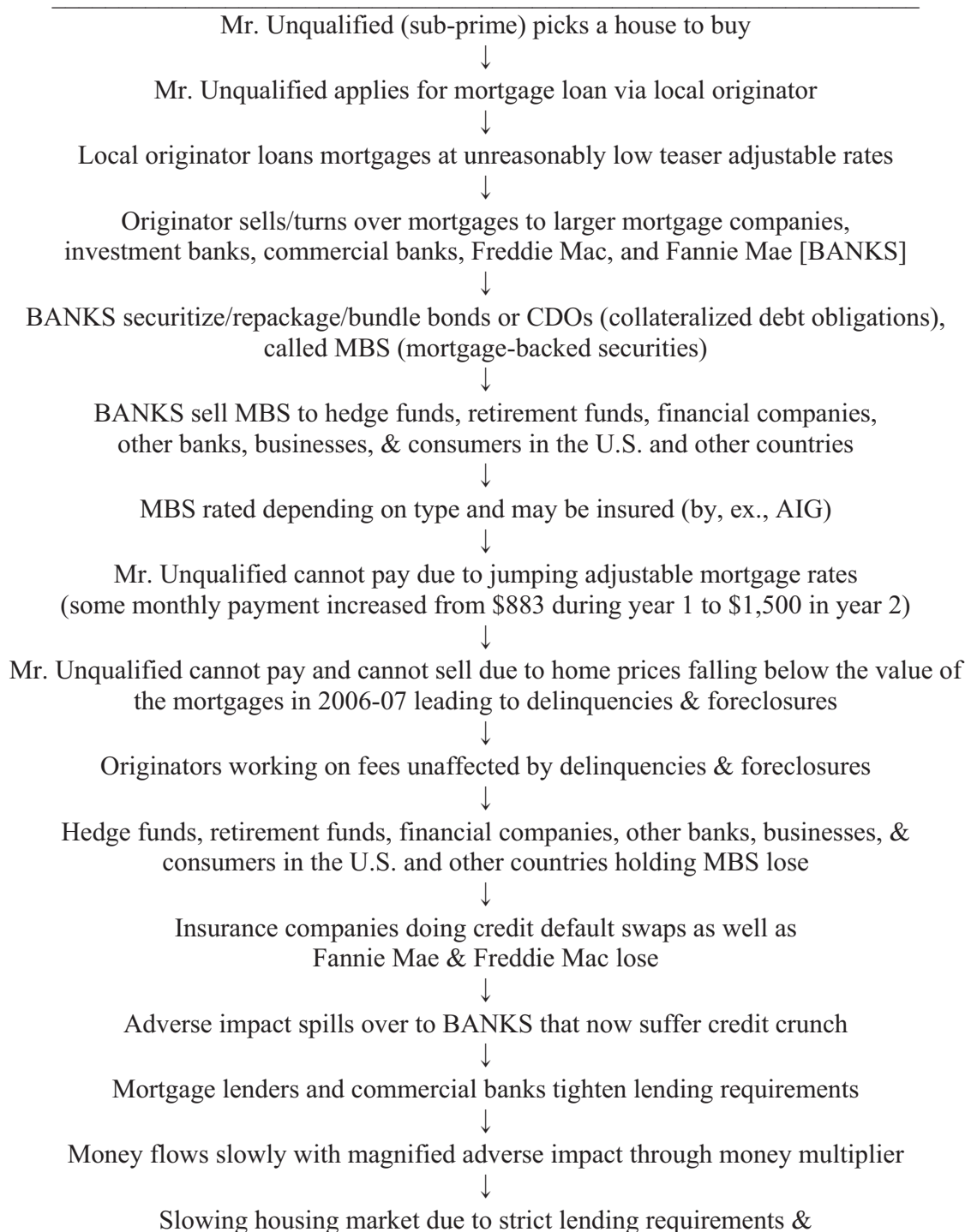
In the extended “originate and distribute” model of commercial banks, “brokers and agents of banks selling mortgages were motivated by up-front fee income unadjusted for borrower quality. The bonuses rewarded growth of business over a short time scale (typically a yearly cycle) with no penalties if subsequent developments revealed a lack of due care and attention in the origination process or losses to the originator.” (Mizen 2008, p. 550) Further, “originators had no greater incentive to look more carefully than brokers at borrower quality. The incentives for the originators of the loans, faced with the knowledge that the products would be combined in complex ways and sold, were different from those for an originator who intended to hold the assets to maturity.” (Mizen 2008, p. 551) As the quantity of new borrowers declined, “lenders reduced their standards to maintain the volume of loans feeding into the securitization market,” encouraged by politicians who wanted votes from those with little or no qualifications for mortgage loans. (Mizen 2008, p. 551) This may have been an understatement.

The March 22 version of Dateline by NBC reported that the income of an applicant who had \$20,000 annual earnings was filled in the application form as \$90,000 without the knowledge of the applicant. Case stories reported frequently in late 2008 by CNN, CBS, and other news media indicate doubling of mortgage rates and monthly payments during the second year when the enticing teaser rate expired. These loans are cynically called NINJA loans because the recipients of these loans had No verified INcome, Job, or Assets.

Ratings of bonds are supposed to indicate the likelihood of default of the securities. Given the complexity of the products offered, investors may have relied on ratings provided by ratings agencies. The granting of AAA ratings to asset-backed securities, which was quite common until the middle of 2007, “meant many investors believed they were buying very safe assets, and certain organizations such as pension funds, which face restrictions on the assets they are permitted to purchase, were able to buy these assets. These risks were not properly priced because they did not anticipate the potential for lower house prices or the potential effects house price declines would have on subprime default rates.” (Mizen 2008, p. 554) In reality, rating agencies earned up-front fees from rating MBS, and more fees from advising clients on how to improve those ratings. Leaders of large mortgage companies, investment banks, and commercial banks that handled sub-prime mortgages earned bonuses based on the volume of business that increased short-term profits for these lenders. This led to the classic information asymmetry and adverse selection between sellers and final buyers of the MBS. Buyers underestimated risks while ratings became less reliable.

The immediate cause of the 2008 recession is widely agreed to be the excessive amount of sub-prime loans. The sequence of events that led sub-prime loans to the recession is summarized in Flowchart 1.

Flowchart 1. Trip Wire to the 2008 Recession



marginally-qualified buyers staying out of the market



Lower stock prices & recessionary economy in the U.S. and beyond.

Foreseeing the Explosion

Wray and Tymoigne describe the view of Hyman Minsky who correctly foresaw the explosion, and its danger, of home-mortgage securitization as early as 1987. “Minsky argued that the relative stability of the post-war period had led to development of Money Manager Capitalism—a much more unstable version of modern capitalism.” (Wray and Tymoigne 2008, p. 18) According to Minsky, the Keynesian policy of fine-tuning in modern financial capitalism creates its own instability that cannot be corrected without flexible regulatory policies that can adapt to the changing financial market. Wray and Tymoigne conclude that “the financial innovations of the past decade greatly expanded the availability of credit, which then pushed up asset prices. That, in turn, not only encouraged further innovation to take advantage of profit opportunities, but also fueled a debt frenzy and greater leveraging.” (Wray and Tymoigne 2008, p. 20)

Fernandez, Kaboub, and Todorova also introduce the financial instability hypothesis of Hyman Minsky. “‘Stability breeds instability’ is a famous Minsky slogan, meaning that financial instability and economic turmoil are endogenous phenomena that stem from the over-optimistic sentiments and confidence that overtake the economy during a boom, leading to lower standards of investment evaluations and thinner cushions of safety.” (Fernandez, Kaboub, and Todorova 2008, p. 2) According to the three authors, “The ‘democratization’ of homeownership was nothing but a fictitious increase in the demand for homes fueled by innovative financing schemes that misled residential real estate developers into increasing the supply of new homes and setting up the industry for one of its worst declines in decades. We argue that this fictitious democratization of homeownership has turned into a real democratization of financial turmoil that has spread beyond subprime borrowers and the herds of lenders who serviced them.” (Fernandez, Kaboub, and Todorova 2008, p. 3) According to Minsky, capitalist economy does not necessarily rely on exogenous shocks to generate business cycles. “The structure of a capitalist economy becomes more fragile over a period of prosperity and an endogenous process leads to financial and, consequently, economic instability.” (Fernandez, Kaboub, and Todorova 2008, p. 5)

Act II: The Great Credit Crunch of 2008 and Pre-Obama Bailout Packages

Eventually, the problem of sub-prime mortgages led to the credit crunch of 2008, which, in turn, progressed to the widely-spread recession of 2008 and beyond.

Early Warning Signs

Some may ask why it was not possible to stop the sub-prime problem before it progressed toward a full-blown credit crunch. There were early, but probably belated, signs.

□ In February 2007, sub-prime mortgage defaults began to increase. In April 2007, New Century Financial, a sub-prime specialist, filed for Chapter 11 bankruptcy. In May 2007, Swiss-owned investment bank UBS closed the Dillon Reed hedge fund after incurring \$125 million in sub-prime mortgage-related losses. All these early warning signs were judged to be isolated events, rather than what turned out to be the beginning of the more serious credit crunch. Even when Fitch Ratings, Standard & Poor’s, and Moody’s all downgraded sub-prime related mortgage products from their AAA status in June and July of 2007, few, if any, recognized the seriousness of the problem. (Mizen 2008, p. 533)

The U.S. economy rapidly deteriorated during the 4th quarter of 2008. “Within a 9-day period in September 2008, the crisis deepened abruptly with a series of stunning events. On Sunday, September 7, 2008, the Federal Housing Finance Authority (FHFA) placed the ailing mortgage giants Fannie Mae and Freddie Mac into conservatorship on Sunday, September 14, 2008, the investment bank Lehman Brothers filed for bankruptcy, and another bank, Merrill Lynch, negotiated an acquisition by Bank of America. ... on Tuesday, September 16, 2008, the Federal Reserve announced the creation of a credit facility (lending arrangement) in exchange for a majority equity stake in the insurance giant American International Group(AIG).” (White House, p. 74)

Pre-Obama Bailout Measures

Countermeasures began to fill the public media in early 2008. Major countermeasures that were announced before the inauguration of the Obama administration in January 2009 are summarized in Table 1. In the process of developing financial countermeasures to deal with the credit crunch of 2008, the Federal Reserve made announcements of several tools of monetary policy that were not mentioned in traditional economics or finance textbooks. These include, but are not limited to: (a) the October 6, 2008 decision to buy commercial papers directly from companies to increase credit, (b) the October 6, 2007 decision to pay interest on commercial bank reserves at the Federal Reserve Bank, (c) the October 21, 2008 decision to buy commercial papers from money market mutual funds, again to increase credit, and (d) the December 16, 2008 decision to purchase credit card debts from commercial banks to increase money supply. Commercial papers are the primary tool by which businesses finance their needs for short-term cash flow.

Table 1. Pre-Obama Bailout Measures

Date	Action
March 16, 2008	Federal Reserve makes a loan guarantee of \$29 billion for sale of Bear Stearns to JP Morgan Chase.
July 11, 2008	FDIC seizes IndyMac Bank covering \$8.9 billion of losses.

July 14, 2008	Federal Reserve issues a policy statement that prevents mortgages from being sold without verification of income and financial assets to ensure repayment.
Sept. 16, 2008	Federal Reserve guarantees a loan of \$85 billion to AIG. The loan package increased to \$150 billion on November 10, 2008, and to \$180 billion on March 2, 2009.
Sept. 19, 2008	A \$700B bailout plan announced amid warnings of a depression worse than the Great Depression of the 1930s.
October 3, 2008	President George Bush signs the \$700B Emergency Economic Stabilization Act of 2008 into law. The main thrust of the law was to use part of the money to purchase troubled mortgage-backed securities.
October 6, 2008	Federal Reserve decides to buy commercial papers directly from companies to increase credit.
October 6, 2008	Federal Reserve decides to pay interest on commercial bank reserves at the Federal Reserve Bank.
October 21, 2008	Federal Reserve decides to buy commercial papers from money market mutual funds, again to increase credit.
Nov. 14, 2008	News reports state that the U.S. government decided not to buy troubled mortgage-backed securities with the bailout money.
Dec. 9, 2008	The Treasury Department sold \$30 billion in four-week bills at an interest rate of zero percent. “And when investors traded their T-bills with each other, the yield sometimes went negative. That’s how extreme the market anxiety is: Some are willing to give up a little of their money just to park it in a relatively safe place.” (Press-Register, December 10, 2008, p. 7B)
Dec. 16, 2008	Federal Reserve announces its plans to purchase mortgage-backed securities. Federal Reserve decides to also purchase credit card debts from commercial banks to increase money supply.
Dec. 16, 2008	Federal Reserve cuts its bench-mark federal funds rate to zero to 0.25 percent.
Dec. 19, 2008	U.S. Congress approves \$17.4 billion loan package for General Motors and Chrysler. Ford did not ask for loan.
January 15, 2009	Senate voted by 52 to 42 to release the remaining \$350 billion of the \$700 billion bailout funds at the urge by President-elect Obama.

The Emergency Economic Stabilization Act of 2008

The Emergency Economic Stabilization Act of 2008 was passed by the Congress on October 2, 2008 and signed by the then President Bush on October 3, 2008. Half (\$350 billion) of the total \$700 billion was authorized for spending while Bush was president, and the other half was authorized for spending after Obama was elected as president. Funds distributed under this Act are known as TARP (Troubled Asset Relief Program) funds. Initially, this \$700 billion program authorized the U.S. Treasury to buy troubled assets. On Nov. 12, 2008, however, the Treasury announced that it had decided

not to purchase troubled assets as planned, but would continue to inject capital into financial institutions via purchase of preferred shares.

On December 19, 2008, the Treasury Department announced that it had used up the first \$350 billion of the \$700 billion TARP funds. “A lot of it is, apparently, just sitting in the bank. A Government Accounting Office audit released earlier this month showed the Treasury Department doling out buckets of cash: \$15 billion for Bank of America, \$45 billion for Citigroup, \$3.5 billion to Capital One, nearly \$6.6 billion to U.S. Bancorp. The feds were essentially taking out the trash -- buying shares in various banks that had gotten themselves into trouble by issuing crappy mortgages using complicated formulas, assuming the cost of many of the mortgage-backed securities that were weighing down the balance sheets of every financial institution in the country. The feds were pumping money into these banks so they would feel free to make more loans -- better, simpler, sounder loans. The epidemic of exploding mortgages and failing institutions would ease. But the banks did not start making new loans. They seemed to sit on their federal windfalls.” (Madden 2008)

On June 9, 2009, ten of the 19 largest banks in the U.S. were allowed to return TARP money, freeing them from restrictions on executive compensation: JP Morgan Chase (\$25.0B), Goldman Sachs Group (\$10.0B), Morgan Stanley (\$10.0B), U.S. Bancorp (\$6.6B), Capital One Financial Corp. (\$3.5B), American Express (\$3.4B), BBST Corp (\$3.1B), Bank of New York Mellon Corp. (\$3.0B), State Street Corp. (\$2.0B), Northern Trust (\$1.6B). “With this latest round, and another \$2 billion that smaller banks have repaid, the Treasury will have gotten back \$70 billion of about \$300 billion handed out to banks.” (Gogoi, June 10, 2009, 3B)

It may be noted that “The financial sector has always been a generous donor to political campaigns, and it gives heavily to both Republicans and Democrats. By the 2008 election, with Democrats firmly ensconced in control of Congress (and heading for control of the White House), commercial banks had split their \$34 million in campaign contributions almost evenly to both political parties. Investment firms, many of which are converting themselves into commercial banks to grab some Treasury funds, gave far more -- \$141 million this year [2008] -- and have been spreading the wealth around to anyone with power in Washington for years. ... Chances are they'll keep getting their way, too, even after Obama takes power.” (Madden 2008)

Act III: The Recession of 2008+ and Post-Obama Stimulus Packages

The credit crunch of 2008 finally spilled over to the main street and led to the recession. There is a disagreement as to when the recession began. In November 2008, the National Bureau of Economic Research announced that the 2008 recession began in December 2007. Although the economy had been slow since 2007, the real GDP actually increased by 2.8 percent during the second quarter of 2008, prompting many economists to claim that the real recession began in May or June of 2008. The U.S. economy rapidly declined at an annual rate of 6.3 percent during the last quarter of 2008 and 5.7 percent during the first quarter of 2009. This decline led to the “stimulus” packages of 2009.

The American Recovery and Reinvestment Act of 2009

The 407-page \$787 billion American Recovery and Reinvestment Act of 2009 was signed by President Obama on February 17, 2009. The Congressional Budget Office says the bill could increase employment in a range of 800,000 to 2.3 million jobs by the fourth quarter of 2009 and 1.2 million to 3.6 million by the fourth quarter of 2010. (USA Today, February 13, 2009, 3B) Conspicuously absent from the package is the kind of spending that would have an immediate impact such as dated tax rebates that can only be spent, not saved, prompting some to claim that the package was a pool of pork barrel projects.

Post-Obama Recovery Measures

Recovery measures under the new Obama administration continued to be announced during 2009.

On February 10, 2009, Treasury Secretary Tim Geithner announced the “financial stability plan”. The first of the plan was to test the health of 13 banks with more than \$100 billion in assets to see whether they can weather an even deeper economic downturn. The second was to make more credit available to consumers and businesses. The Treasury will provide \$100 billion in seed money to expand the Federal Reserve's Term Asset-Backed Securities Loan Facility, in which investors with bonds backed by credit card and other loans can swap those bonds for Treasury securities, enabling them to get additional financing. This move was intended to improve capital markets that provide a large percentage of funding for consumer loans. The third was to create a private-public partnership to take toxic assets off banks' balance sheets. This plan was intended to enable private sector buyers to determine the price for currently troubled and previously illiquid assets. The final component of the stability plan was to address the housing crisis. The Fed and Treasury will commit \$50 billion to reduce mortgage payments and establish loan modification guidelines, which included requiring firms receiving federal aid to participate in foreclosure mitigation plans.

On March 4, the Obama administration announced its \$75 billion mortgage relief plan that was aimed to help as many as 9 million borrowers qualify for more affordable mortgages through refinancing and modified loans. Among the specifics was the refinancing plan that was “limited to borrowers who owe up to 5 percent more than their home's current value.” (Zibel 2009)

On March 16, 2009, President Obama announced a plan to assist small businesses. According to the plan, the Treasury Department would buy up to \$15 billion in securities backed by Small Business Administration (SBA) loans. The plan would also increase the government guarantee on certain SBA loans from up to 85% to as much as 90%, allow small businesses to write off \$250,000 on new capital equipment doubling the previous amount, and require the 21 largest banks getting government financial help to report monthly how much money they lend to small businesses. (Petrecca 2009)

On March 18, the Federal Reserve announced plans to pump nearly \$1.2 trillion into the economy. (Kirchhoff and Waggoner 2009) According to the plan, the Fed would buy up to \$300 billion in long-term Treasury securities during the following six months; buy up to another \$750 billion in MBS issued by Fannie Mae and Freddie Mac in addition to \$500 billion that the Fed had already committed; and buy up to \$100 billion in debt of Fannie Mae and Freddie Mac.

On March 19, 2009, Secretary Timothy Geithner of the Treasury Department announced \$5 billion in loans for the auto suppliers in an effort to keep the auto industry running. “The funding announced on Thursday are not intended to save every auto supplier or to infuse capital into ailing companies. Rather, it will either pay key GM and Chrysler suppliers’ bills earlier than expected or simply guarantee that the bills will be paid, which will assure the suppliers’ creditors.” (Carty 2009) Further, “There are some made-in-America constraints on the money – the loans can go only to companies with operations in the U.S. and for parts made or assembled in the U.S. (Carty 2009)

It may be noted that protective measures have been adopted by many countries during the 2008 economic slowdown. Examples of protective trade measures adopted by countries since September 2008 are the following: (Lynch 2009)

1. Argentina: Changed import licensing requirements for products from textiles to tires.
2. Brazil: Set anti-dumping duties on some chemicals and packaging materials from various countries, including the U.S.
3. Canada: Imposed anti-dumping duties on thermoelectric containers from China.
4. China: Banned Irish pork after dioxin scare.
5. Ecuador: Raised tariffs on a wide range of imported goods.
6. European Union: Reintroduced customs duties on imports of certain cereals.
7. India: Imposed 20% duty on imported soybean oils.
8. Indonesia: Increased import tariffs on products such as petrochemicals, steel and electronic parts.
9. Japan: Implemented special “safeguard” measures governing food preparations of flour, metal or starch.
10. Kazakhstan: Increased import tariffs on finished goods that compete with local production.
11. South Korea: Raised import tariffs on crude oil to 2004 level.
12. Malaysia: Extended anti-dumping duties on Indonesian newsprint.
13. Mexico: Suspended preferential tariff treatment on a variety of goods originating in the U.S.
14. New Zealand: Allowed its export credit office to temporarily provide trade credit insurance at market rates.
15. Paraguay: Favored domestic firms in government procurement.
16. Philippines: Reduced tariffs on wheat and cement.
17. Russia: Raised tariffs for nine months on imported cars, buses, butter and certain dairy products.

18. Taiwan: Gave priority to local labor and products in construction projects.
19. Turkey: Increased duties on imported cotton yarn from all countries.
20. Ukraine: Set import duty surcharges up to 13% for up to six months.
21. United States: Adopted “Buy American” requirements for public works projects funded under economic stimulus law.
22. Vietnam: Increased import tariffs on some iron and non-alloy steel products.

On March 23, 2009, the Treasury Department announced its long-awaited plan to purge bank balance sheets of as much as \$1 trillion in sour assets that were limiting lending. The government committed \$75 billion to \$100 billion of taxpayer money to launch the "Public-Private Investment Program," seeking to create a market for bad debts. The government would run auctions between the banks looking to unload the bad assets and the investors looking to buy them.

The Troup of Twenty, abbreviated to G-20, was organized in 1999, and is made up of the finance ministers and central bank governors of 19 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom and the United States of America, and also the European Union which is represented by the rotating Council presidency and the European Central Bank. The G-20 carried out the preparatory work for the Leaders summit held in London on April 2, 2009. At the end of the April 2 meeting, the Leaders issued the Global Plan for Recovery and Reform. Among the agreements included in the declaration was a \$1.1 trillion program of support to restore credit, growth and jobs in the world economy.

On May 15, 2009, the Treasury Department announced plans “to extend bailout funds beyond banks and automakers to six of the nation’s largest life insurance companies. The government granted preliminary approval to Prudential, Lincoln National, Allstate, Principal Financial, Hartford Financial and Ameriprise for capital infusion under the so-called Troubled Asset Relief Program, or TARP, said Andrew Williams, a Treasury spokesman.” Interestingly, MetLife said “it does not need government aid.” (Chu 2009)

Post-Obama recovery and stimulus measures through the first half of 2009 are summarized in Table 2.

Table 2. Post-Obama Recovery Measures (All in 2009)

Feb. 17	Obama signs the American Recovery and Reinvestment Act into law.
March 4	Obama administration announces mortgage relief plan for refinancing and modification of existing loans.
March 16	Obama announces small business assistance plan
March 18	FRB announces plans to pump nearly \$1.2 trillion into the economy by buying up to \$300 billion in long-term Treasury securities and buying another \$750 billion in MBS issued by Fannie Mae and Freddie Mac in addition to \$500 billion that the Fed has already committed.

March 19	Treasury Secretary announces \$5 billion in loans for the auto suppliers in an effort to keep the auto industry running. “The loans can go only to companies with operations in the U.S. and for parts made or assembled in the U.S.”
March 23	Treasury announces plans to purge bank balance sheets of as much as \$1 trillion in sour assets that are limiting lending and prolonging the recession, and to launch the "Public-Private Investment Program."
April 2	Leaders of the G-20 countries issues the \$1.1 trillion Global Plan for Recovery and Reform.
May 15	Bailout extended to life insurance companies.
June 1	GM files for bankruptcy with \$30.1B government assistance in addition to \$20B it already received. Two GMs are planned: new GM with best and profitable assets and old GM with the rest
June 9	Ten of the 19 largest banks allowed to return TARP money (\$68 billion).
June 10	Chrysler and Fiat agree to merge with court approval by signing a strategic alliance.

Act IV: Crystal Balling the Future

How will all these bailout, recovery, and stimulus expenditures affect the future of the U.S. economy? Since the amount of new expenditures is so huge, the U.S. economy as well as the world economy is clearly entering an uncharted territory. In the remainder of this paper, we will crystal-ball how all these new programs may affect the future course of the U.S. economy.

Market Efficiency and Moral Hazard

“Two factors have strengthened the case for central bank intervention in the past decade — the financial system’s increased globalization and the untested nature of the new and complex financial instruments that have come under stress.” (Rosenblum, DiMartino, Renier, and Alm 2008, p. 2) Perhaps, recognizing that the central bank intervention has not really worked out well, “The guiding principle of do what is necessary, has been replaced by the recognition — reinforced by actions — of the importance of doing whatever it takes to break the downward spiral in the financial and credit markets that has contaminated the overall economy.” (Rosenblum, DiMartino, Renier, and Alm 2008, p. 2) Worse intervention has been made by political leaders based, in part, on the notion that large banks and corporations should not be allowed to fail. “The too-big-to-fail (TBTF) now rests at the very top of the ills elected officials, policymakers and bank supervisors must address.” (Stern 2008, p. 6). The quotation prompted media commentators to quip that if these businesses are too big to fail, maybe they are too big and should be broken up.

Media critics and public outcry over the \$700 billion package were everywhere. The most serious indictment appears to be that the U.S. Treasury hand-picked banks and

gave them bailout funds on the basis of criteria that either did not exist or were poorly designed if it existed. The proper procedure of establishing the criteria first and then soliciting applications does not appear even considered by leaders who designed, approved, and carried out the bailout program. On March 4, 2009, Bill Cooper, the chief executive of Wayzata-based TCF Financial Corp. said on a CNN show aired on March 4, 2009, that the bank had asked for permission to repay the federal government the \$361 million it received in November 2008 from the U.S. Treasury under the TARP. TCF said it had sufficient funds to pay back the money and would not have to issue any additional common shares or other securities. Mr. Cooper stated that the Treasury officials asked TCF to accept the funds, saying that TCF was doing well but could use the funds to increase loans.

“Moral hazard, a term first used by the insurance industry, captures the unfortunate paradox of efforts to mitigate the adverse consequences of risk: They may encourage the very behaviors they’re intended to prevent. For example, individuals insured against automobile theft may be less vigilant about locking their cars because losses due to carelessness are partly borne by the insurance company. Moral hazard occurs whenever an institution like the Fed cushions the adverse impact of events. More to the point, lessening the consequences of risky financial behavior encourages greater carelessness about risk down the road as investors come to count on benign intervention. Moral hazard must be weighed carefully in responding to financial crises.” (Rosenblum, DiMartino, Renier, and Alm 2008, p. 2) *“By intervening in a financial crisis, the Fed doesn’t allow markets to play their natural role of judge, jury and executioner. This raises the specter of setting a dangerous precedent that could prompt private-sector entities to take additional risk, assuming the Fed will cushion the impact of reckless decision-making. So when intervention is the only option, the Fed has the duty to minimize micro moral hazard- that is, the benefit to any specific firm or industry.”* (Rosenblum, DiMartino, Renier, and Alm 2008, p. 3) The massive post-Obama stimulus programs may have raised moral hazard to an unprecedented level by transforming the thought process of the public from what I can do to overcome this difficulty to how I can receive a larger piece of the government money.

Fairness

There were many instances in which leaders of corporations that received bailout funds were paid large amounts of cash bonuses. For instance, “Despite losing hundreds of billions of dollars on risky loans and accepting massive cash injections from taxpayers to stabilize their businesses, Wall Street firms paid out an estimated \$18.4 billion in cash bonuses, says the New York state comptroller,” and “The latest flap about bonuses follows last week’s news that Merrill Lynch paid out \$4 billion in bonuses to employees before it was acquired by Bank of America and before it reported a huge fourth-quarter loss.” (Shell 2009, p. 2B) Also, “New York Attorney General Andrew Cuomo said in a letter to [Rep. Barney] Frank that Merrill Lynch paid bonuses of more than \$1 million each to 696 employees in December, with four of the highest-paid employees getting a total of \$121 million. The bonuses were paid just days before BofA completed its purchase of Merrill.” (Gogoi 2009, 1B) At least one senator from Missouri proclaimed

inside the U.S. Senate chamber that these business leaders were “idiots”. Viewing from the countryside, it is not clear who are the real idiots: those who approved bailout funds believing that the funds would be used solely for public benefits, or those who took every personal advantage that they could as expected in American capitalism.

The case of AIG is even more controversial. (Hall, Hagenbaugh, Fritza and Jones 2009) On September 16, 2008, AIG received \$85 billion in bailout funds. On November 6, 2008, AIG announced the total debt owed under the \$85 billion line of credit from the U.S. government is lowered to \$61.3 billion, but borrowed \$19.9 billion under a separate \$38 billion securities lending program, making the amount the government had made available to AIG as much as \$123 billion. On December 2, 2008, AIG and the government agreed to clear AIG of its obligations on about \$53.5 billion in bad mortgage debt. On March 2, 2009, the Treasury and the Fed announced a third new aid plan for AIG, making additional \$30 billion available at the AIG disposal. On March 14, AIG was reported to have paid a large amount of bonus money to its employees after announcing that it lost \$61.7 billion during the last quarter of 2008. The bonus checks totaled \$165 million and ranged “from \$1,000 to \$6.5 million to executives after accepting up to \$180 billion in government bailout money.” (Hall, Hagenbaugh, Fritza and Jones, 1A) Between March 15 and 18, 2009, it was widely reported that Senator Dodd, chair of the Senate Banking committee, in cooperation with Treasury officials deleted a sentence from the American Recovery and Reinvestment Act that would have prevented such large bonus payment at AIG.

Examples of government interventions that are likely to create unfair distribution of benefits abound. For example, under the federal Consolidated Omnibus Budget Reconciliation Act (COBRA), laid-off workers can continue their former employer’s health coverage for up to 18 months, but only if they pay the entire premium plus a 2 percent administration fee. The stimulus package would subsidize 65% of COBRA premiums for employees who were laid off between September 1, 2008, and the end of 2009. The subsidy took effect on March 1, 2009. Employees who were laid off before September 1, 2008, retired or left voluntarily between September 1, 2008 and the end of 2009 were not eligible.

For another example, President Obama’s new mortgage relief plan, called “Making Home Affordable” program, was launched on March 4, 2009, aiming to help up to 9 million borrowers qualify for more affordable mortgages and stay in their homes. Let an AP real estate writer explain the program. “Only homeowners in good standing whose loans are held by Fannie Mae or Freddie Mac qualify. The property must be owner-occupied and the borrower must have enough income to make payments on the new mortgage debt. Borrowers can’t owe more than 105 percent of their home’s current value on their first mortgage. For example, if your home is worth \$200,000, your first mortgage can’t exceed \$210,000. Borrowers with a second mortgage still can qualify as long as their first mortgage isn’t more than 105 percent of their home’s value. Homeowners can’t take cash out during the refinancing to pay other debt. Borrowers have until June 2010 to apply for the program.” Also, “You don’t have to be behind on your mortgage payments to qualify. Delinquent borrowers and current borrowers who are at risk of imminent

default are both eligible. The program applies to mortgages made on Jan. 1 or earlier. The mortgage payment including taxes, insurance and homeowners association dues must exceed 31 percent of the borrowers' gross monthly income. The property must be the homeowner's primary residence. It can't be investor-owned, vacant or condemned. Home loans for single-family properties that are worth more than \$759,750 don't qualify." Further, "Lenders must agree to reduce the loan payments to 38 percent of a borrower's monthly income. After that, the government and lender split the cost of bringing the payment down to 31 percent. Eligible borrowers will have to provide their most recent tax return and two pay stubs, as well as an "affidavit of financial hardship" to qualify for the loan modification program. In the affidavit, applicants will have to cite the reasons behind their financial woes, such as job loss or a drop in income. The government will then take steps to verify the information. Borrowers are only allowed to have their loans modified once. The program runs through Dec. 31, 2012." (Elphinstone 2009, p. 6A) One wonders whether a simpler, fairer, and market-led solution could not be developed that can achieve the same objective.

Long-Term Implications

The scope of new expenditures is summarized in Table 3. Note that much of the funds are pledges for aid when needed, and do not represent actual spending, while others are actual expenditures. Further, some of these expenditures may be overlapping. None-the-less, Table 3 does indicate the large scope of total recovery and stimulus expenditures. Total public debt of the U.S. government as of June 9, 2009 was more than \$11 trillion (\$11,391,459,255,428.95) according to the U.S. Treasury website (<http://www.treasurydirect.gov/NP/BPDLogin?application=np>). When unfunded Medicaid, Social Security, Medicare, veterans' pensions, and similar obligations are added, the total obligation rises to over \$60 trillion. Further, U.S. government budget deficit for the 2008-09 and 2009-10 fiscal years are projected by the Congressional Budget Office to exceed one trillion dollars by a significant margin.

Table 3. Scope of U.S. Recovery Funds

Amount	Purpose
Part A	
\$1,800B	FRB's purchase of commercial papers directly
\$600B	FRB purchase of debt & MBS's
\$200B	Support student, auto & credit card loans
\$600B	Fed purchase of commercial papers and CD's from money market
\$1,900B	FDIC guarantees for banks
\$900B	FRB's loans offered to meet financial institutions' year-end cash needs
\$700B	Treasury to buy equity stakes in financial institutions
\$250B	Treasury, FRB & FDIC shouldering Citygroup losses
\$29B	Guaranteeing losses from JP Morgan's buyout of Bear Stearn
\$200B	Treasury purchase of preferred stocks of Fannie Mae and Freddie Mac
\$144B	MBS purchases by Fannie Mae and Freddie Mac

\$300B	FHA to refinance failing mortgages
\$50B	Guarantee principals in money market mutual funds
Unlimited	FRB's loan offer through discount window
Unlimited	FRB's currency swap lines with ECB & central banks in UK, Japan and Switzerland (Under a currency swap, a central bank can draw on the funds of a fellow central bank to provide short-term money)
Part B	
\$787B	Stimulus package signed into law - February 17, 2009
\$75B	Housing stabilization package - March 4, 2009
\$15B	Small business assistance plans – March 16, 2009
\$1,150B	FRB's plans to purchase MBS and Treasuries - March 18, 2009
\$5B	Auto suppliers assistance plans – March 19, 2009
\$1 trillion	Financial stability plans – March 23, 2009
Unknown	Bailout extended to life insurance companies – May 15, 2009
\$30.1B	Assistance to GM – June 1, 2009 (in addition to \$20B already given)

Source: Part A from USA Today, Nov. 28, 2008, 6B, and Part B from Table 2 of this paper.

What will happen if U.S. domestic investors and foreign buyers of U.S. Treasuries begin to feel uneasy about the financial solvency of the U.S. government and refuse to buy the Treasuries? To avoid rising interest rates that are then necessary for the U.S. government to sell Treasuries, the Federal Reserve will be forced to buy Treasuries. Note that on March 18, 2009, the Federal Reserve already announced plans to buy up to \$300 billion in long-term Treasury securities during 2009. (Kirchhoff and Waggoner 2009) This leads to a pure increase in monetary base, and will generate fears of inflation. The monetary base is the sum of currency in circulation and bank demand deposits at the Federal Reserve Banks. Bank demand deposits held at the Federal Reserve as reserve balances “grew from \$10.2 billion the week ending January 17, 2007, to \$795.5 billion the week ending January 28, 2009. Of this large amount, \$769.2 billion was held as excess reserves at the Fed.” (Gavin, p. 57) These bank reserve deposits are sometimes called federal funds that banks borrow from one another on an overnight basis. Banks are holding these excess reserves, earning only 0.25 percent annual interest, and cannot be expected to hold this large amount of reserves as the economy recovers. Will the Fed be able to control inflation as recession ends and the economy expands?

If fears of inflation are seeded, “This concern will lead them to start dumping their holdings of U.S. Treasuries. In so doing, they’ll drive up interest rates, which will lead the Fed to print money to buy up those bonds. The consequence will be more money creation - exactly what the bond traders will have come to fear. This could lead to spiraling expectations of higher inflation, with the process eventuating in hyperinflation.” (Kotlikoff 2006, p. 242) Note also that “China’s premier didn’t say it in so many words, but the implied warning to Washington was blunt. Don’t devalue the dollar through reckless spending. Premier Wen Jiabao’s message is unlikely to be misunderstood at the White House. It is counting on Beijing to help pay for its stimulus package by buying U.S. bonds. China already is Washington’s biggest foreign creditor, with an estimated \$1

may be noted that the conclusion by Kotlikoff was drawn in 2006 when the 2008 recession was not even on the radar.

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