Abstract

Like a good stew that has mulled, the forces that came to a head in September of 2008 hand been mulling. The American dream of owning a house contributed to the stew. Innovations in financial markets including asset backed securities and mortgage backed securities were a second ingredient. A change in banking contributed. Ratings agencies contributed. Fannie Mae and Freddie Mac and so the Congress contributed. The rise of mortgage brokers contributed. The innovation of credit default swaps contributed. Leverage, mark to market, and Structured Investment Vehicles (SIVs) seasoned and spiced the stew. The broth for the stew is found in the debate over the source of the liquidity from 2006-08—easy monetary policy or a glut of saving internationally. These ingredients made the fine stew of the financial markets crisis that gripped the economy beginning September 15, 2008 when Lehman Brothers filed for bankruptcy and followed soon after by the visit of the Fed Chairman and Secretary of the Treasury to Congress to ask for $700 billion for the Trouble Asset Relief Program. This paper first provides perspective and then reviews the ingredients and their contribution to the stew.

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1 The author gratefully thanks Larry R. White for his thoughtful comments that improved both the paper’s content and clarity of exposition. The author also thanks his Dominican University colleagues especially Gerald McCarthy and Robert Irons for those collegial conversations that prodded and honed his thinking on the financial crisis. Any remaining errors are, however, the author’s sole responsibility.
The Making of a Fine Financial Stew

I. Introduction

Like a good stew that has mulled, the forces that came to a head in September of 2008 had been mulling. The American dream of owning a home contributed to the stew. Innovations in financial markets including asset-backed securities and mortgage-backed securities were a second ingredient. A change in the way banking decisions are made contributed, as did the performance evaluation and compensation schemes employed by many financial service firms. Ratings agencies contributed. Fannie Mae and Freddie Mac and so the Congress contributed. The rise of mortgage brokers contributed. The innovation of credit default swaps contributed. Leverage, mark-to-market, and Structured Investment Vehicles (SIVs) seasoned and spiced the stew. The broth for the stew is found in the debate over the source of the liquidity from 2006-08—easy monetary policy or a glut of saving internationally. These ingredients made the fine stew of the financial markets crisis that gripped the economy beginning September 15, 2008 when Lehman Brothers filed for bankruptcy and followed soon after by the visit of the Fed Chairman and Secretary of the Treasury to Congress to ask for $700 billion for the Troubled Asset Relief Program. This paper first provides perspective and then reviews the ingredients and their contribution to the stew.

II. Image

The economy has two parts: a real part and a financial part. The production of goods and services and sweat of humans and toil of machines comprise the real part of the economy. The instruments (stocks, bonds, certificates of deposits, checking accounts, the financial “paper,”), the institutions (S&Ls, investment banks, insurance companies, credit unions, mortgage brokers and similar firms), and the individuals (savers, investors) comprise the financial part. The image of how these two parts interrelate is crucial.

One could think of the economy as a huge auto with the real part the engine and the financial part the transmission. In this image, the financial crisis is essentially a broken transmission. Since we still have all the real stuff—acres of farmland, mines, oil wells, manufacturing facilities, machine tools, vehicles, trains and rails, telephonic transmission equipment, human ingenuity—the engine remains intact despite the financial meltdown. So fix the financial sector, just replace the dead transmission with a good transmission. With the new transmission installed, the car of the economy runs well again. But this mechanical image of the economy might miss key connections.
Another image takes us further. One can think of the economy as a living organism such as the human body. In this image the real part of the economy is made up of the hands that make goods, the legs that transport people and goods, the voices that exchange management instructions and line worker reports, the eyes that read reports and blueprints, the ears that hear business information communicated by cell phone conversations, and the brain that manages all this activity and innovates new processes. The financial part is the heart-lung cardiovascular system that pumps the energizing, oxygenated blood to the hands, legs, voices, eyes, ears, and mind. When the financial markets seize up as in September of 2008 the complex living organism of the economy suffers a heart attack. The fix is not as easy as replacing a transmission. After a heart attack (with or without a transplant), one must change his/her behavior: eat right, sleep right, give up smoking and drinking, and exercise. The economy would have to work out.

Indeed the economy would be in a work out situation in which the accumulation of bad paper would require an extended period to repair balance sheets of businesses and households. After suffering substantial declines in net worth due to falling stock prices and falling housing prices, households need to increase saving to repair their retirement nest eggs. The increased saving means reduced consumption, lower aggregate demand, and the falling output and employment of a recession. With banks suffering increased loan losses, banks curtail lending of all types including real estate development and housing loans. This decreased lending curtails the construction industry. With slack in the economy the incentive for businesses to expand their productive capacity is reduced and investment spending declines creating further slack in the real part of the economy.

III. Ten Ingredients to the Stew

Ingredient Number 1: The American Dream and True Banking

It starts with the American Dream of owning one’s own home. When a new house is built the carpenters, plumbers, electricians, masonry workers, truckers of materials, developers, and real estate agents all get paid. To fill the house the manufacturers and retailers of washers, driers, TVs, beds, couches, carpets, draperies, kitchen cabinets, garage door openers, air conditioners and furnaces, paint, and the myriad of other items going into a new home sell their goods and get paid. With all this building and filling the economy grows.

Financial intermediaries, which will be referred to as banks merely for ease, provided the mortgage loans enabling one to buy a house. Their business was to earn profits slowly over time each period collecting interest revenues that were above interest expenses. Banking was a steady long run, 3-6-3 business: stay in business a long time and
over that long time pay depositors 3%, charge loan customers 6%, and hit the links at 3 p.m. Hitting the links is not as frivolous as it first sounds. Over 18 holes of golf one’s character is revealed. How does this prospective loan client respond to the adversity of a bad shot? Does he/she count all the strokes? How does he/she respond to the good times of a great drive? The astute banker is gathering data and judging character throughout the round. What makes this loan customer or potential loan customer tick? What does the timbre of the customer’s voice tell me that is beyond the words being spoken? So, slowly over time the bank profits by earning the spread between the 6% revenue and 3% cost. The bank holds the loans in its portfolio; it warehouses them. The art of banking is in managing not only the uncertainty of deposit flows and the regulatory requirements but also judging correctly the quality of potential loan customers—the art of underwriting loans. Traditionally the touchstone for this judgment of credit risk has been the C’s of lending: Character (integrity), Capacity (income/cash flow), Collateral (asset value), Condition (of the economy), and Capital (net worth in the venture).

Financial intermediaries originally earned profits slowly over time the hard way by warehousing loans and deposits to receive the spread between interest revenues and deposits costs over the long run and by managing default risk attendant to loans through prudent (the C’s) lending.

*Ingredient Number 2: Innovation*

With the advent of financial engineering new securities were created. Rather than mortgages (and credit card paper and auto loans) residing in bank portfolios (i.e. financial warehouses), mortgage-backed securities and asset-backed securities allowed banks to sell their paper into the secondary market, thereby shifting the risk from themselves to other entities and substituting near-term income for the longer-term stream of income that came with holding the loans.

*Ingredient Number 3: Banking on Volume*

The innovation of securitization changed banking. Intuitively think of the care one takes of a car. It matters whether one owns the car or rents it. Just as renting changes the care one takes of a car (care of the rented car compared to the care of the owned car), selling loans off into the secondary market could change the care one takes in assessing the credit risk. Essentially the sale of securitized loans into the secondary market greatly reduces bank exposure to default while simultaneously providing banks with an avenue to fast revenues. Rather than warehousing and earning the interest spread slowly over time, banks could bundle and sell the loan paper to earn commissions and servicing fees now. But these earnings generated by commissions and fees depend on volume. Volume became king. This ascendant role of volume put great pressure on credit standards, which
weakened. In addition to falling mortgage interest rates, points, and fees during the 2000-2005 period there were:

> lower mortgage loan denial rates,

> rising ratio of loan amount to house value,

> use of innovative mortgage formats including subprime, Alt A, interest only, and negative amortization loans,

> falling median down payment for first time home buyers (14% in 1993 to 2% in 2007!), and

> rising proportion of low documentation loans.

Essentially the C’s of lending were old school banking. Four of the C’s would be greatly eased in part because of the increasing house prices improving the C of loan collateral. Additionally, the C’s were eased greatly because the loans would be sold into the secondary market which would shift default risk to the buyer of the new mortgage backed security, eliminate the effect of defaults from bank earnings, and consequently weaken the incentive for prudence in bank lending. For many but certainly not all banks,

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2 Sources of information for each of the different measures of credit standards:


the hallmark of a good loan changed: from can the bank warehouse live with these loans in its portfolio for many years to can they be sold into the secondary market\(^3\).

*Ingredient Number 4: Ratings Agencies*

The new mortgage backed securities received AAA ratings from the ratings agencies\(^4\). Historically mortgages had been superior and were generally reputed to be the best credits from the household sector. These AAA ratings facilitated the sale of the new mortgage backed securities by giving the buyer confidence in these new securities. Unfortunately the ratings agencies missed the change in the quality. The loan paper no longer had to satisfy the test of the C’s that banks had imposed when they would warehouse the paper in their own portfolios. The test of paper as indicated above was would it sell in the secondary market.

*Ingredient Number 5: Government Sponsored Enterprises (GSEs)\(^5\)*

Fannie Mae and Freddie Mac contributed greatly not only to the market for total mortgages but also for mortgage-backed securities. From the end of 2004 through the end of 2007, total U.S. mortgage debt outstanding grew from $10.66 to $14.57 trillion\(^6\). Throughout this period the combined mortgage-backed securities guaranteed by Fannie and Freddie accounted for no less than 25% of total mortgage debt outstanding. Of the $3.9 trillion of total mortgage debt growth from $10.66 to $14.57 trillion, $1 trillion or 27.7% was contributed by the growth of Fannie Mae and Freddie Mac guaranteed mortgage-backed securities, which constituted no less than 51.8% of total dollars in mortgage pools or trusts.

In addition to their significant size in the mortgage market, lending for affordable housing was a significant feature of Fannie and Freddie operations. HUD set “affordable

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\(^5\) Federal National Mortgage Association commonly called Fannie Mae and Federal Home Loan Mortgage Corporation commonly called Freddie Mac

\(^6\) Board of Governors of the Federal Reserve System. (2009). *Table 1.54 Mortgage Debt Outstanding.* *Federal Reserve Bulletin.* Retrieved April 14, 2009 from [http://www.federalreserve.gov/econresdata/releases/mortoutstand/mortoutstand20090331.htm](http://www.federalreserve.gov/econresdata/releases/mortoutstand/mortoutstand20090331.htm) Author analysis of Table 1.54
housing lending” targets for Fannie and Freddie which it raised incrementally from 40% for 1996 to 42% for 1999 to 50% for 2001-2004 to 52% for 2005 to 53% for 2006\(^7\). That is in 2006 53% of total units financed by each GSE were to be in the affordable housing category. This directive toward affordable housing lending appears to have stimulated Fannie and Freddie’s substantial participation in the market for subprime mortgage-backed securities. In their Wall Street Journal article Charles Calomiris and Peter J. Wallison (2008) claim that Fannie Mae and Freddie Mac “became the largest buyers of subprime and Alt-A mortgages between and 2004-2007, with total GSE exposure eventually exceeding $1 trillion. In doing so, they stimulated the growth of the subpar mortgage market”\(^8\). Furthermore, in a June 10, 2008 Washington Post article, C.D. Leonnig (2008) reports that between 2004 and 2006 Fannie and Freddie combined to purchase $434 billion dollars of securities backed by subprime loans and accounted for no less than 20% of the this market (and 44% and 33% in 2004 and 2005 respectively)\(^9\).

**Ingredient Number 6: Mortgage Broker Growth and Intentions**

In 2000 the share of subprime mortgages issued through broker or wholesale channels was under 60%\(^10\). From 2004 through 2006 this share soared from 60% to nearly 90%. Notably during this same 2004 and 2006 period, origination of subprime mortgages ranged from approximately $450 billion to $500 billion annually (having increased in amount from under approximately $150 billion in 2001). And the combination of Alt-A and subprime mortgage originations rose to approximately 33% of originations in 2006 from under approximately 12.5% in 2001. These mortgage brokers may not have cared if the loan could be repaid. They appeared to have learned the new way of banking on volume discussed in ingredient number three. They earned the

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commission and fees from originating and selling the mortgages into the secondary market.

**Ingredient Number 7 (or 2b?). Tranches: Innovation Revisited**

Financial engineers in the 1980s learned that the sum of the values of the components of a U.S. Treasury bond could be more than the value of the whole bond. Hence investment houses stripped the coupons from the corpus of Treasury securities creating zero coupon securities—Merrill Lynch created TIGRS (Treasury Investment Growth Receipts), Solomon Brothers CATS (Certificates of Accrual on Treasury Securities), and Lehman Brothers LIONS (Lehman Investment Opportunity Notes). Mortgages presented a similar opportunity for profitable disassembly of a debt instrument, hence tranching of mortgage debt. But there are key differences between U.S. Treasury debt and mortgage debt: the number of borrowers and the credit quality of the borrowers. With the U.S. Treasury there is one borrower who at the time had the best credit quality. With mortgages there are millions of borrowers of varying credit quality. The participants to this innovative tranching of mortgage debt (both the buy side and the sell side) did not seem to think about what to do if a borrower runs into difficulty. Unlike the U.S. Treasury, a mortgagee can run into difficulty due to an auto accident, illness, loss of job, or divorce. In the days when a bank held the mortgages it originated in its own portfolio, the borrower knew to whom to turn in a time of distress. Since the bank owned the whole mortgage, the borrower could go to the one lender and work out revised terms of repayment. Since the bank owned the whole loan it was in the interest of the bank to revive the repayment stream. Such work outs are part of the art of banking.

But when tranching a mortgage loan (as opposed to stripping a Treasury bond) no one gave much weight to this key aspect of the art of banking, the workout. To the extent that mortgage loans were disassembled by tranching, the possibility of helping a distressed borrower work out a new payment plan is greatly reduced. To whom should the borrower turn? It is costly to assemble all the tranche holders. And even if they all could be assembled, the differing priorities of the tranche holders would make it less likely for them to agree upon a revised plan of payment. Moreover, since any one mortgage is a small part of a MBS pool and any one mortgage’s piece is probably an even smaller part of a tranche, the return to any one of the tranche holders for participating in a renegotiation is so small that it is better to write it off. This indifference of tranche owners evaporates when the mortgage default rate rises from very low single digits to double digits with many individual mortgages defaulting simultaneously. But the great cost of reaching a work out plan continues to overwhelm the tranche holders’ new found interest in doing so. Thus the innovation of tranching seems to have removed one of the traditional immediate, local means of handling distressed loans—the workout. Losing the workout alternative puts more reliance on the last resort of foreclosure. And
with increased foreclosures there comes the spiral effect of an increased number of houses on the market leading to lower housing prices further impairing lending capacity.

**Ingredient Number 8: Credit Default Swaps**

Spurred by the effective risk shifting provided by derivatives, both exchange-traded and over-the-counter, and by the profits earned by the purveyors of these derivatives, new innovations in risk shifting tools continue. Credit default swaps allowed the owner of a debt security to protect him/herself from the issuer’s default. The buyer of the CDS would collect the face value of the bond (or more specifically the amount scheduled in the terms of the CDS) if the default (or more specifically one or more of the credit events listed in the terms of the CDS) were to occur. But for this protection the buyer of the CDS pays. The seller of the CDS receives this payment for taking on the obligation of paying the CDS buyer the stipulated amount should the stipulated credit event occur. Thus CDSs are similar to insurance against default. They are also similar to put options. Essentially CDSs, like puts, grant the owner the right to put the underlying security back to the seller when the security defaults (just as the insurance allows you to put your car back to the insurance company after the wreck for the value the car had before the wreck). But unlike insurance with regulations (governing reserves and regular examinations) and exchange-traded options subject to the discipline provided by exchange trading, daily mark-to-market, and margin flows, CDSs were relatively unregulated and opaque.

Several implications of CDSs are very important to the stew. First, if one buys a CDS to insure one’s bond holding against default, there could be a tendency to relax, to watch the investments less carefully since the risk-event has been insured. Moral hazard raises its head here as it does in all insurance situations. Second, since the CDSs arrangements were off exchange transactions, there was less transparency in the CDS deals than found with exchange-traded, standardized products. The reduced transparency relates to many aspects such as CDS deal size, total obligations assumed by an individual CDS seller, and the amount of obligations an individual CDS seller assumed for a particular event. Third, the Bank of International Settlements estimates that CDS volume rose\(^\text{11}\) from $13.9 trillion in December, 2005 to $57.9 trillion in December, 2007 for a compounded growth rate of 108.4%. This triple digit growth suggests that CDS sellers found the sale of these CDSs very lucrative.


Fourth, CDSs are not only like insurance but like put options. As with insurance, the put seller takes in the premium and keeps it if the event does not occur. Each period a new put (new insurance policy) must be created to replace the expiring one. Without the put (insured) event occurring, the CDS put/insurance generates revenues without the cost of payout. But here the experience of exchange-traded stock options in October of 1987 is instructive for the case of AIG and its estimated $400 billion worth of CDSs. As the stock market fell precipitously, 25% in one day in October 1987, the put options sellers had to make good and were obligated to disgorge much if not more than all the premiums they had taken in during the preceding months. But unlike the exchange-traded options, where positions were transparent and margins assessed and a clearing house assured performance of the options contracts, the OTC CDSs market lacked transparency, were not subject to regulatory margins, and lacked a clearing house assuring performance. Hence AIG had $400+ billion of CDS obligations when the company’s net worth was but $200 billion (restated to 95.8 billion).12

There is a key way in which CDSs are unlike insurance. In order to buy life insurance on person X, the buyer of the insurance must have an “insurable interest” in person X. For example person X buys life insurance on himself/herself to provide for his/her family in the event of his/her death. I cannot buy insurance on my neighbor down the street merely because my neighbor’s track record of reckless driving and drinking makes my neighbor a good bet for an early grave. This “sporting interest” is not an insurable interest. With CDSs there was no requirement that the buyer of a CDS demonstrate an “insurable interest” That is, there was no requirement that one own an XYZ bond in order to buy a CDS on the XYZ bond. Essentially, even if one had no risk exposure to a default of XYZ bonds, one who was willing to pay the fee could buy a CDS on XYZ bonds. That is one could place a bet on the default of XYZ bonds. Without the requirement of an insurable interest, the seller of the CDS was no longer selling insurance, but taking bets. And as any good bet taker knows, as more and more bettors bet the same way, the bet taker has to change the odds (the price). It is not clear that


sellers of CDSs adjusted their prices and given the infusions AIG required, if they did adjust their prices the adjustment was insufficient.

**Ingredient Number 9: Triple Seasoning—Leverage, Mark to Market, and SIVs**

Leverage is the first seasoning of the stew. Defaults on loans deplete the capital of a lender. The higher the leverage the more quickly defaults erode the lender’s capital and the sooner defaults threaten the other people’s money borrowed by the lender. Reports reveal leverage rising from 12-to-1 to 30-to-1 for investment banks.\(^\text{13}\) As mortgage loans started to default, other people’s money was being threatened with loss or was actually being lost. The other people fled and an old fashioned run on the financial institution ensued. These runs led to a freezing of credit markets and a contraction of lending.

The second seasoning of mark-to-market rules for asset valuation exacerbated the credit freezing effect of financial de-leveraging by financial institutions as their mortgages assets went into distress. Mark-to-market works well for standardized commodities and instruments that are traded transparently in high volume continually throughout the day in environments for which the rules and regulations governing trading are well defined and enforced. The effectiveness of mark-to-market is most evident in the success of the futures and options exchanges such as the CME Group. But mark-to-market may be inappropriate for mortgages which are an entirely different instrument than futures contracts on corn or Eurodollars or crude oil. Mortgages are basically illiquid instruments with each mortgage linked to its unique property having its own particular and fixed location and current state of repair. These idiosyncratic qualities make mortgages opaque (to all but the underwriter/loan officer), low volume (any one property trades infrequently), and non standardized (any one property has its own location and condition). Essentially mortgage valuation is a longer term proposition than futures pricing. So mortgages are ill suited for marking to the market daily. But when current market values of mortgages fell, mark-to-market accounting forced downward revaluation of mortgage portfolios by banks. The downward revaluation depleted their capital, placed banks in either weaker or inadequate capital positions, and constrained bank lending.

The third seasoning of Structured Investment Vehicles (SIVs) redoubled the punch of the first two seasonings. SIVs were used in a variety of ways by banks but common to these different uses was the result of earning revenues without running up against capital requirement limits.\(^\text{14}\) Essentially banks moved mortgage assets off balance

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sheet by selling them to SIVs which would warehouse the mortgages in their portfolios. In one use a bank would buy mortgage-backed securities (MBSs) created by an SIV and would also buy a CDS on the MBS.\textsuperscript{15} The combination of the MBS plus its CDS produced a credit rating for the “CDS-insured” MBS which required less bank capital than would the bank’s holding of the actual mortgages on its balance sheet. But when the compound event of the mortgages of the MBS going into distress and the seller of the CDS becoming suspect and so their CDS guarantees becoming problematic, the bank had less capital than it would have had had the bank held the mortgage outright. In another use of SIVs pointed out by Flowers (2008), the bank guaranteed the mortgages it sold to the SIV. So when the mortgages went into distress, the mark-to-market requirements forced the SIV to write down the value of the mortgages it held which, in turn, triggered the guarantees by the originating bank.\textsuperscript{16} At the least propitious time, the mortgages returned to the originating bank’s balance sheet further eroding the bank’s lending capacity.

**Ingredient Number 10: Broth of Liquidity—Fed’s Fault or Exported Dollars Come Home?**

The broth to which all these ingredients were added was abundant liquidity. Many, most notably John Taylor, lay the blame for this abundance of liquidity on the Fed’s too loose monetary policy.\textsuperscript{17} He points to interest rates that were too low. But for Taylor the liquidity was not the ultimate problem. The problem was counter party risk as no one knew what paper was good and what paper was bad. Others believed that monetary policy was not too loose in light of the worldwide increase in production capacity and its looming specter of deflation.\textsuperscript{18} Instead these others, most notably within the Federal Reserve System, pointed to the repatriation of dollars as the source of the liquidity and low interest rates. Huge U.S. balance of payments deficits had sent billions of dollars out of the country. As the rest of the world, notably the Chinese returned these hundreds of billions of dollars through their purchases of U.S. Treasury securities,

\begin{itemize}
  \item Altig, David, Senior Vice President and Director of Research Federal Reserve Bank of Atlanta. —Remarks to the Symposium Examining the Causes, Effects, and Consequences of the Financial Crisis, October 1, 2009, Ross Bridge, Alabama
  \item Taylor, J.B. Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis. (Hoover Institution Press, Stanford California, 2009), Ch 1
\end{itemize}
interest rates remained low. Regardless of their source, the low interest rates created a quest for return and encouraged those seeking high returns to load up on the relatively higher yielding MBS.19

IV. Conclusion: The Stew

The ingredients presented above provided a fine stew which everyone enjoyed but only in the short run. People enjoyed the great American dream – home ownership- and the politicians could take credit for improving the lot of the people. The building of the houses provided employment and income for developers, carpenters, plumbers, electricians, masons, truckers, real estate agents and many more. Filling the house provided employment and income for the manufacturers of paint, drapery, carpeting, washers and dryers, ovens, microwaves, sound systems, TVs, beds, tables, couches and many more. Getting people into the houses provided profits for bankers. And in the era of innovation, mortgage-backed securities provided fee income for the mortgage brokers originating mortgages, government-sponsored enterprises (Fannie Mae and Freddie Mac) guaranteeing pools underlying mortgage-backed securities, and the investment bankers who originated the pools underlying mortgage-backed securities. The ratings agencies earned fees for rating the rising volume of mortgage-backed securities. And the sellers of the credit default swaps earned the premiums for insuring the face value of debt instruments.

All the ingredients were in place. Everything was ready when the housing bubble burst. Housing demand’s rate of growth declined, housing prices softened, then fell, taking with it the value of the collateral for the mortgage loans. As housing demand’s rate of growth declined, the volume of new mortgage loans slowed, reducing the incomes of the mortgage brokers and the new age bankers whose income was tied directly to volume-generated origination fees rather than the spread between loan interest rates and deposit interest rates. And then defaults on mortgages by less than creditworthy borrowers began to rise. Other people got nervous about the safety of their savings and were reticent to lend. Investment banking seized up and the financial markets froze. The heart attack that struck the financial markets left banks with toxic assets by the trillion and eroded net worth, household retirement funds fell by 30-40% as the stock and housing markets fell. Confidence was in a shambles.

19 The source of the excess liquidity and low interest rates is not unimportant. Indeed separately John Taylor and David Altig point out that from one’s understanding of the source of the excess liquidity and low rates flows one’s policy prescriptions for solving the financial crisis. From John Taylor’s perspective the counter party risk was the problem that needed solution while from the Fed’s point of view liquidity was not moving down the yield curve. Undoubtedly many dissertations will dissect this period of financial market history.
This financial market heart attack impacted the real economy. The long road to recovery through eating right, exercising, no smoking, and no drinking began for the economy with the TARP and the Economic Recovery Plan, increased household saving, layoffs, and reduced investment by business.
References

Altig, David, Senior Vice President and Director of Research Federal Reserve Bank of Atlanta. —Remarks to the Symposium Examining the Causes, Effects, and Consequences of the Financial Crisis, ll October 1, 2009, Ross Bridge, Alabama.


