

Financial Meltdown – Crisis and Challenges

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Abstract

This paper looks at the current financial crisis in the light of the preceding major bubbles in the United States. We observe that history of bubbles is history of asset bubbles with attendant easy money. We posit that solution to these bubble crashes do not have to lead to deflation or inflation. If we go back to the basic of credit creation through real savings, the solution will not likely to set the stage for another bubble. An example of back to basic credit creation is provided.

I. Introduction

A U.S. recession was inevitable by 2007, and it indeed began in December 2007, according to the National Bureau of Economic Research. Yet financial markets continued to function – until September 15, 2008 meltdown.

This crash was triggered when the Treasury took over Fannie Mae and Freddie Mac on September 8, 2008. Their combined assets were over \$5 trillion. These firms help guarantee most of the mortgages in the United States. The Treasury was cleared by Congress to take this action in July 2008 when it insisted that no intervention would be needed. The Treasury replaced the management of both companies and took over their operations. This signaled the market that the mortgage market and its institutions in the U.S. are now clearly broken.

On Sunday, September 14, 2008, the largest bankruptcy filing in U.S. history was made by Lehman Brothers with over \$600 billion in assets and 25,000 employees. The largest previous filing was by WorldCom, whose assets were just over \$100 billion just prior to bankruptcy.

On Tuesday, the Federal Reserve made a bridge loan to AIG, the largest insurance company in the world which has assets of over \$1 trillion and over 100,000 employees worldwide. The Fed never asserted its authority in a firm at this scale and so far removed from its own supervisory authority.

All three firms were unable to *retain* financing; however, the reasons differed in each case. AIG had to raise money because it had written \$57 billion of insurance contracts whose payouts depended on the losses incurred on subprime real-estate related investments. While its core insurance businesses and other subsidiaries were doing well, these contracts, called credit default swaps (CDS), were making significant amount of losses. Were AIG to default on CDSs, some other contractual partners would insist on prepayment of their claims. In addition, other large financial firms including the largest bond-investment fund in the world, PIMCO had guaranteed AIG.'s bonds by writing CDS contracts. Given the huge size of the contracts and the number of parties interconnected, the Federal Reserve decided that AIG was too connected to fail. Hence, AIG had to be rescued. The Fed loaned \$85 billion to AIG to honor its contracts which was subsequently raised to \$144 billion.

These events triggered widespread panics which led the Dow Jones Industrial Average to drop more than 500 the day after Lehman Brothers filed for bankruptcy. Stocks continued to plummet in the days to come, and it was realized that the nation was in the midst of a serious stock market crash. By Friday's close (10/10/08), the Dow's average had fallen 5,713 points (-40.3%) from its record finish of 14,165.43 just a year earlier (10/9/07). The Dow recorded its worst weekly percentage loss ever, a fall of 18.2%. Furthermore, the S&P 500 and the Nasdaq each lost 15.3% in the same week.

The Monday meltdown worsened a boom-and-bust cycle mainly present in the U.S. and U.K. into a global financial panic. The global system itself was highly vulnerable at that moment, so the meltdown did not come out as a shock. It was a culmination of a series of events and lack of engagement on the part of regulators that finally found a crash expression by September 15. The Treasury's desperate call for \$700 billion in bailout funding four days after the Lehman collapse probably exacerbated the sense of panic, even though the funding request was appropriate. It arrived too late and without a relevant plan.

The panic kept on spreading and engulfed the biggest bank Washington Mutual in its wake in the following week. The whole financial system was adversely affected: the shrinkage and subsequent collapse of inter-bank lending; the migration of investors from equities, banks, commercial paper, hedge funds and money-markets to government securities and commodities; the effective shutdown of corporate and municipal bond markets; and the abrupt withdrawal of credits to emerging markets from Argentina to Dubai to Hungary and South Korea. Most importantly, the consumer spending, the biggest driver of the economy, dried up.

II. The Making of the Meltdown

Understanding the making of the financial shock that occurred is vital to finding a way out of our current mess. In the short span of five years, American investors moved from the collapsing tech bubble into the real estate bubble.

We observe historical regularities in the ongoing global financial crisis sparked by subprime mortgage defaults in the United States. The systemic financial crises are typically preceded by asset price bubbles with credit booms and large capital inflows. Major default episodes are typically apart by decades, however, lately these are happening with increasing frequency. The recent US sub-prime financial crisis shows remarkable similarities with other bubbles in the past, and is, therefore, hardly unique.

Serial Bubbles - From Tech Bubble to Real Estate Bubble

i. Beginning and end of Tech Bubble

For all bubbles, the base of the problem had been credit. Some of them exhibited asset side problem and some demonstrated liability side problem Tech bubble problem was on the asset side. Causes of this financial meltdown can be traced back to events that occurred several years ago. In the late 1990s, the price of stocks of Internet startup companies grew at an unsustainable rate leading to tech stock bubble. The Fed's easy money

policies helped the bubble to grow. Also, during the same time, there was a phenomenal rise in computer hardware and software spending for Y2K preparedness to avoid operational crisis in the financial system. Due to overly optimistic long-term forecasts and sales, the dot-com industry was flourishing. Internet IPO underwriter requirement for profitability was lowered from three years in eighties to a quarter in late nineties. In fact, by the bubble time, investors were not requiring profitability in the foreseeable future. Hence, the bubble grew to an unsustainable size as investors poured money into the startup companies, causing them to become extremely overvalued. It soon became obvious that the market for dot-com services couldn't produce the anticipated profitability. Once the companies used up all their capital, they began to fall one by one, especially, technology-related companies. There was a continuous fall in consumer prices due to the oversupply of computer and related equipment, which further contributed to the downfall of related companies, eventually bursting the Tech Bubble in March of 2000. Other factors contributing to the downfall was the Fed's monetary policy at the time of crash. During the technology bubble, credit was relatively easy to obtain. In early 2000, failing to see the onset of the crash, the Fed tightened the monetary policy to slow the economy – a déjà vu of 1929-32 scenario.

In 2003 as a reaction to the bursting of tech bubble Greenspan cut the prime rate to just 1% in order to stimulate the economy and avoid a long recession. This resulted in the growth of another bubble, this time the asset was the real estate.

ii. Beginning and end of Real Estate Bubble

After the tech bubble burst, the money available at the time had nowhere to go except into real estate. Interest rates were very low, and there was a tremendous amount of money available. This is when greed came into play. Mortgage institutions lowered their standards to subprime to attract more borrowers. This led to speculation in the housing industry. Prices of homes increased in double-digit rates, which made homeowners feel wealthy. Mortgages were sold to borrowers who could not really afford them. This is when hubris was evident on the part of mortgage lenders. Hubris is a term used to indicate excessive pride, self-confidence, or arrogance, which many a times result in tragic downfall. That was exactly where the housing market headed. In order to raise capital and to make more loans, the debts and loans were bundled together with subprime loans as Collateralized Debt Obligations (CDOs), leading investors to believe that all the mortgages including subprime ones were safe. Financial institutions took greater risks than they could sustain. Lack of regulation played a major role here. Regulatory changes like Commodity Futures Modernization Act of 2000 enabled the Wall Street to be out of reach of the government's regulatory constraints on derivatives. The players were now free to trade CDS in a manner which was identified as security fraud by some.

Once again world came to know about the asset bubble late. Because it was difficult to determine the number of subprime mortgages that were inside Wall Street portfolios, all mortgage securities were deemed as bad. Given this uncertainty, investors avoided mortgages altogether and created a freeze in the mortgage markets affecting many banks' solvency. They now have increased leverage due to bad mortgages listed as assets and suspended making more loans. Furthermore, banks quit lending to other banks for fear of exposure to

more subprime loans. These financial institutions did not have enough capital to protect themselves against bad debt, nor did they concentrate on risk management.

Bear Sterns faced a similar problem to Lehman Brothers. The Fed, the lender of last resort, agreed to bail out Bear Sterns. It provided lending to JPMorgan to assume Bear Sterns' assets and liabilities. When Lehman Brothers was in the same situation, however, the Fed refused to bail it out. This "A" rated company, which was one of Wall Street's strongholds for 154 years, was forced to file for bankruptcy. As the institutions are interconnected, the fall of Lehman Brothers put the insurance company AIG in serious trouble. This time the government took control and rescued AIG using \$85 billion in taxpayer funds as an emergency loan. AIG failed partly because of its enormous exposure in the *unregulated* area of credit default swaps. Credit default swaps make up an unregulated market of \$45 trillion, which is five times the size of the U.S. government bond market. Because of the overwhelming size of the assets that could go bad through contagion if AIG crumbled, the government decided it would be best to save the company even after it let Lehman Brothers to go bankrupt. These institutions were not the only ones to find themselves in serious trouble during the meltdown. Morgan Stanley and Goldman Sachs were converted overnight from independent to regulated banks. Washington Mutual was taken over by JP Morgan Chase, making it the biggest banking failure in U.S. history. Wachovia was taken over by Wells Fargo.

The chain reaction affected balance sheets of most financial entities. The homeowners were foreclosed upon. The mortgages became non-performing. This meant that the Collateralized Debt Obligations built on top of them had to be downgraded which in turn downgraded CDS. The banks holding the original instruments were left with unhedged instruments, and if they were going to write them off, they would become insolvent. On the other hand, if they held them at a fictional face value, they could not make new loans. Thus many of them proceeded to write new derivatives, piling up another layer of CDS on top of the old ones, hoping that a new credit event would allow them to recoup some fraction of what they held, or they made agreement with other CDS holders to not enforce each other's bad debts. The number of CDS's doubled even as the credit market was collapsing.

Thus most of the financial institutions decided not to make new loans. But this credit contraction meant that more people fell into default, ARMs were adjusted upwards even more, and another round of toxic waste was created. When banks were not lending to each other, then central banks stepped in. The US Federal Reserve offered dollar swaps, in essence buying currency without any fees, in order to make sure that banks around the world could loan. However, even with these steps panic began. The housing bubble continued to erode in Europe, but while important banks failed, there was no cascading collapse. Interbank lending shrunk and money got diverted into short term treasuries. One month Treasury dropped a full percentage point of yield, from 1.37% to .36%, on September 15. The flight to quality continued. By Wednesday the three month Treasury had a constant maturity yield of just .03%. The next day interbank lending froze solid on 19-September-2008. By injecting liquidity the Fed created investment demand, without investment supply. Money fled for commodities, driving food and oil higher. This only put more downward pressure on the underlying housing stock, and therefore deepened the losses at Freddie Mac, Fannie Mae, the investment banks that held the CDOs, and AIG which reinsured these financial assets. Oil prices shattered 100 dollars a barrel on the spot market subsequently peaking at 130 dollars a

barrel. By October, it was broadly accepted in the financial world that the real estate bubble has crashed

III. Solution – Deleverage

When you are in fire, you do not ask for a fire code. The first in an emergency is to prevent the panic from causing a systemic collapse of liquidity and sudden insolvency of major financial institutions. It was leverage that created the problem, and hence, the answer is to deleverage. There are two ways to deleverage an economy.

First is the traditional and simple way where people actually try to pay their debts. However, direct deleveraging causes the problems of falling asset prices as people sell their assets to pay. Economy slows down resulting in bankruptcies and joblessness.

Most economic experts blame the tight liquidity conditions on bank actions to improve their solvency. In fact, it is believed that the collective attempt of banks to improve their solvency actually aggravates the risk of making them less solvent as their asset prices fall further, thereby deepening the liquidity crisis.

Let us see why. Assume an entity that finances \$800 of assets with a debt of 600 and equity of 200. The leverage is Asset/Equity and for this case it is 4. When asset value falls by 10%, it is now valued at \$720 which brings equity down to 120. These numbers now increase the leverage to 6. To deleverage, either asset needs to be decreased and/or equity need to be increased. When banks trim their assets by not lending, it will deleverage. As a result of the real-estate market crisis and the fall in the value of houses, banks and various financial institutions took the decision to reduce their leverage by trimming their assets. However, by cutting lending, banks are forcing various borrowers to sell off their assets to prevent insolvency. Consequently this deleveraging sets in motion of asset-price deflation. This in turn lowers borrower collateral and causes banks to reduce their lending further.

It follows that if all financial institutions are trying to fix their balance sheets, they could drive asset prices down, which for a given debt will shrink their net worth and actually increase their leverage, or make them less solvent. This is the paradox of deleveraging. If this process is not contained in time it could seriously damage the real economy, so it is held.

So what should be done here? According to popular thinking, the central bank or the government must step in and start buying the assets that banks are trying to get rid of. This, it is held, will prevent the asset-price deflation and can ruin the real economy. The Treasury has launched a \$787 billion dollar bailout in that respect. Central banks around the world have become the lender of last resort to a wide range of financial institutions.

Originally, the Fed tried to buy up the toxic assets to affect the numerator of leverage multiplier. Later it shifted to direct re-capitalization, perhaps, because of fear of deflation. However, they create a new and worse problem of inflation, maybe hyperinflation. Inflation reduces the real value of debt in a perverse and unpredictable way. Debtors benefit from inflation, however, savers lose. Inflation like bailouts rewards the least responsible players – those who have gotten themselves heavily in debt and punishes those who have not. As

Germany saw in the '20s, it de-stabilizes the whole society leading to extremely dire outcomes. More fundamentally, this bailout shifts from restoring banking system to restoring banks that may be ethically indefensible.

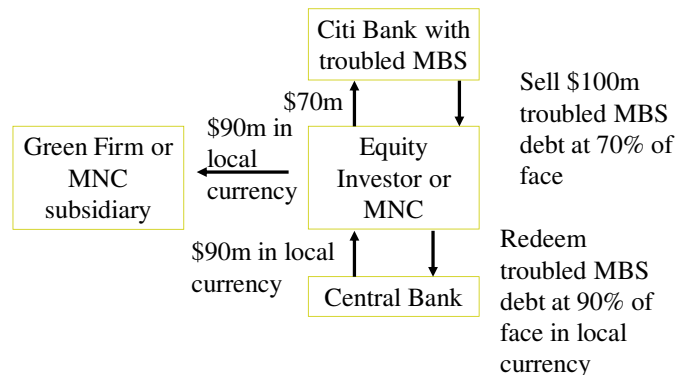
One year after a financial crisis federal government debt increased, on average, by about 86 percent. Thus the fiscal burden of banking crisis extends far beyond the commonly cited cost of the bailouts.

IV. Challenges: Avoiding More Harm

However, there is another way where deleverage can take place without creating deflation or inflation. This type of deleveraging is done by going back to basics of credit creation, i.e., credit is based on real savings. The debt for equity swap is such an example. It is capable of solving problem that happens on the asset side of the balance sheet and generates credit based on real savings.

Exhibit I – Going Back to Basics of Credit Creation

Debt-for-Equity Swap – Simultaneously Prevents Deflation and Provides Capital Infusion



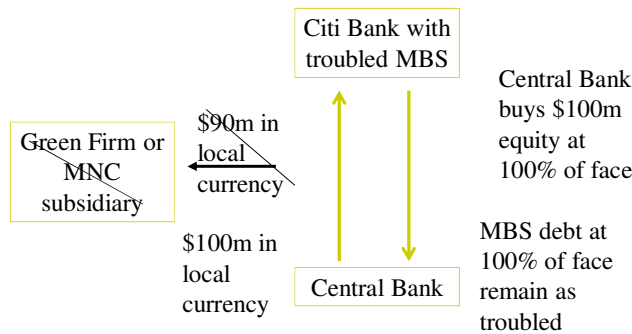
An illustration is provided above. The crucial point is the interjection of equity investor or MNC between the Fed and Citi bank. The Citi bank, a money center international bank, sells \$100m of MBS debt to equity investor who in turn gets \$90m from the Fed. The equity investor only pays \$70m to Citi bank. This is a win-win situation for all parties. Deflation is reduced; credit is expanded based on real economy not out of “thin air.” Given the focus on going green by current administration, these green equity investors immediately has \$20m of built up equity. In fact, this can happen with concerted effort on a global scale. The Fed can be replaced by another Central Bank as a player in the debt to equity swap illustration above. At that point currency in question will be local currency from the Central Bank.

However, current Fed bailout focuses on direct re-capitalization of banks. They

shifted from asset side management to liability side management. This does not solve the liquidity problem as banks still have troubled assets in their balance sheet which, inter alia with recessionary economy, compel the banks to suspend further creation of loan. Liquidity problem continues to remain in an economy with double digit unemployment. Importantly, as the money is not going to production of real savings, the bailout is likely to be inflationary.

Exhibit II – Current Inflationary Bailout.

Current Direct Re-capitalization – Inflationary with Constrained Liquidity



Direct re-capitalization is required when the problem is on the liability side as was in 1930s. There were bank runs for redemption of deposits; and liability side was drawn down with cash withdrawal by the depositors. The crisis was further worsened as the shortage of liquidity motivated depositors to withdraw funds from banks that were not in distress, causing still more failures. However, current crisis is different in that lenders do not have shortage of liquidity. Lending is freezing up for two reasons. Lenders see that their balance sheets are adversely affected by the troubled assets and they now have high leverage. So, they deleverage by trimming their lending. Second, lenders do not have the confidence that their would-be-borrowers will have the ability to pay. Direct re-capitalization does not deal directly with these real issues and will be inflationary, and is likely to create another asset bubble. However, debt to equity swap addresses both of these issues and will bring liquidity flow back to the real side of the economy.

V. What is likely to happen – Any Danger Ahead?

If we compare 2008 with 1929, we see that we avoided Great Depression. It is quite apparent from the following graphs that we managed to avoid the danger of 1929. However, did you postpone it to the future? Did you already put in seeds for another bubble to get out of the ruins of the current one? Is history repeating itself? Can you not start relating credit to real savings and investments rather than creating it from thin air? These are the questions that beg our attention.

Exhibit 3

Dow Jones 1929 vs 2008

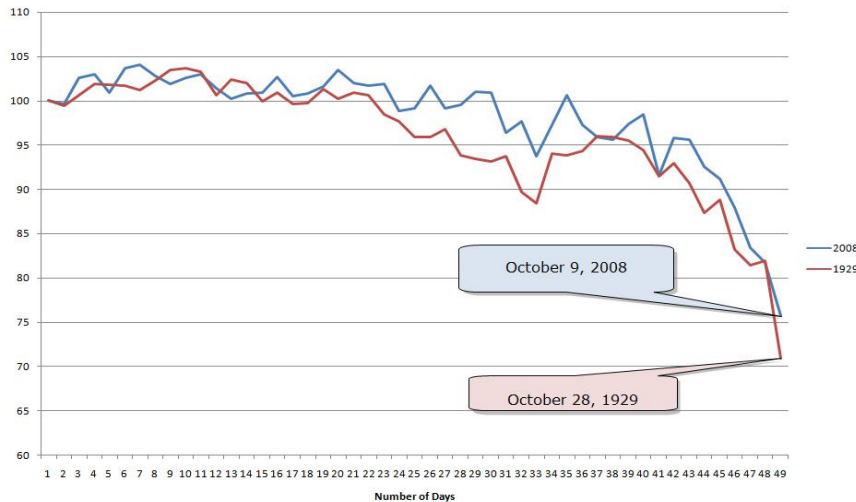
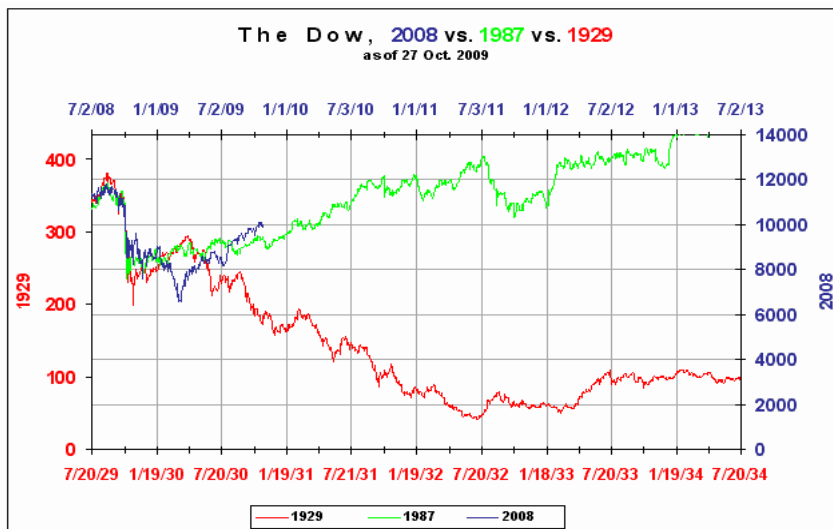


Exhibit 4

The Dow, 2008 vs. 1987 vs. 1929
as of 27 Oct. 2009



VI. Preventing Future Catastrophes

We see that financial catastrophes are happening with increasing frequency. After 1929, the major crash was in 1987 – 57 years apart. However, tech bubble crash in 2000 and real estate bubble crash in 2008 happened in quick succession. There are many reasons cited for this increased frequency. However, one thing stands out is that “too connected to fail”

syndrome got more pronounced in the technology driven global information economy. Now days the asset bubble goes to unsustainable height in a period doubling fashion. The particular asset varies from one bubble to another. Increasingly the bubble asset class is becoming more complex and connected. Easy monetary policy and low interest rates remain consistent underlying drivers that induce ordinary people to acquire that asset class. And then when it is realized, monetary policy tightens and the boom collapses.

Solution prescriptions from various schools of thought span the full spectrum to stem the future crises. Recommendations include breaking up of the big corporations so that none is too big to fail. Behavioral economists focus on human frailties of bounded rationality and limited self control and recommend full disclosures to eliminate the mania driven bubbles.

In this paper we emphasize the investigation of individual bubbles and observe that we create bubble to get out of the ruins of the other. That does not have to be. Even though all bubbles are asset bubbles, the nature of the solution differs according to which side of the balance sheet is affected. We can avoid setting the stage for another bubble if we do not apply the same solution to every bubble. However, all available evidence point to the fact that we are set to create another bubble, possibly Green bubble, to get out of the ruins of the current real estate bubble crash. We are applying liability side solution to the asset side problem, possibly for the fear of potential deflation. However, as we point out here that going back to the basics of credit creation, we do not have to fear deflation and apply wrong solution. The current re-capitalization solution will create too much money which will have nowhere to go but to green assets.

VII. Conclusions

The nature of free market economy will generate cycle. However, it is not in the nature of the free economy to generate major crashes. The major crashes are generated with too much money in the system. The lack of vigilance lets the asset bubble assume unsustainable height. We conclude that to solve one bubble crash we do not have to plant the seeds for the other. To avoid such error we need to go back to basics of credit generation from real savings. This will shape our future efforts to apply appropriate policy measures in times of need.

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