
Booms, Busts, and the Fed: The Never-Ending Story

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If the current crisis in the financial markets creates a feeling of *déjà vu*, it should come as no surprise. It shares the same causes, and elicits the same responses, as similar crises over at least the last 20 years. Still, the severity of each crisis seems to worsen, causing market participants to wonder if the cure may be worse than the disease.

The current market environment has been characterized as a credit crisis and a subprime debacle, but it is presented as if such a market environment had never been seen before. The truth is that how we got to where we are today may be almost inevitable. That is, it is part of the DNA of capitalism. The current environment reflects the need to delever the financial system, a process that we must, unfortunately, go through from time to time.

The Leveraging

To understand the current situation, it is necessary to talk about how we got to where we are today. The seeds of the current financial crisis were actually sown in the preceding one, which occurred before 2001. That crisis was characterized by a massive shift in attitudes related to the prospects for the equity markets. Remember, many were talking about a Dow of 100,000. But when the euphoria was replaced by complete pessimism, predictions focused on a bottom in the Dow at 5,000. (In fact, we experienced an 80 percent decline in the NASDAQ, which is extraordinary.) This massive decline in enterprise values caused companies to be overlevered.

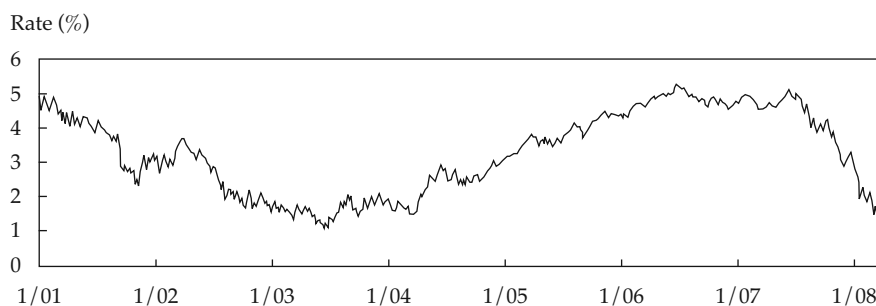
The popping of the equity bubble was followed in short order by the attacks of 9/11. By the summer of 2002, lending to every major U.S. corporation virtually shut down in the wake of the Enron and WorldCom scandals. For several months during that period, corporations had no ability to take out

loans, causing the prospect of bankruptcy to loom over the heads of corporate America. It is in this context that the most recent example of what I call “the leveraging” began.

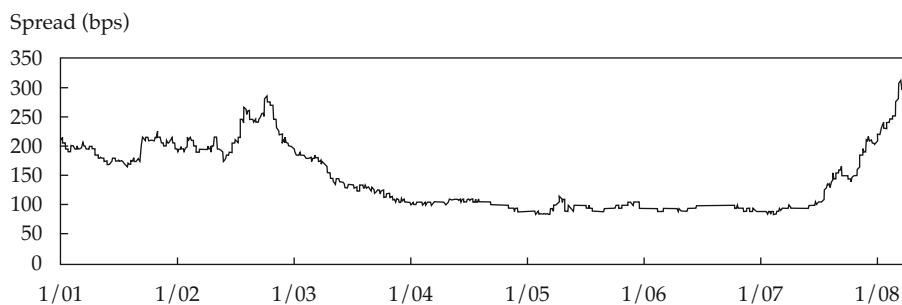
The U.S. Federal Reserve (Fed) responded predictably to this situation by lowering rates very aggressively and holding them there for an extended period of time. By late 2002, real short rates were negative, which is to say that the nominal rate was below the underlying rate of inflation. In effect, borrowers were being paid to borrow. This was a well-thought-out and very intentional response to the existing situation. Remember that the Fed thought that it had good reason for holding interest rates at these low levels for such a long period of time—a time when there was concern about the prospects of a Japanese-style deflation. Importantly, the Fed made it clear that it did not think that years and years of deflation represented the base case. But the Fed recognized that the costs of being wrong on this point were very high, and it was willing to pay insurance in the form of very low rates for several years. These low rates were reflected by low levels of two-year Treasuries in the 2003–04 period, as shown in **Figure 1**, and by a tightening of credit spreads, as shown in **Figure 2**. Credit was deliberately designed to become cheap to spur the economy forward, which it did.

Not surprisingly, the consequence of keeping credit cheap and readily available led to a rapid increase in economic growth and in personal income. In effect, the damage done by the popping of the equity market bubble was beginning to get fixed.

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Figure 1. U.S. Two-Year Treasuries On-the-Run Quoted Yield, January 2001–March 2008

Source: Based on data from Lehman Live.

Figure 2. U.S. Corporate Investment-Grade Spread, January 2001–March 2008

Source: Based on data from Lehman Live.

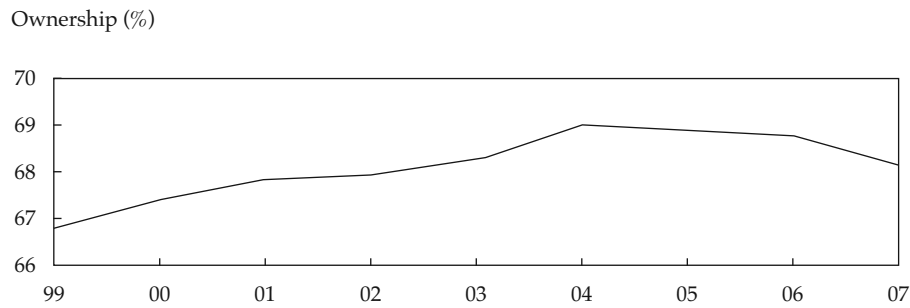
Just after the bursting of the internet bubble, a general consensus had developed that one of the consequences of the bursting of the bubble was a disastrous effect on consumer and business balance sheets, which were decimated by what happened as equity valuations declined. Probably everybody remembers the undervaluations in pension funds and the deep pessimism that resulted as people watched their nest eggs disappear.

One way to deal with such a situation is to inflate assets elsewhere in the economy. And in this case, the asset class that got inflated was housing. Housing is an interesting asset class because it is relatively easy to inflate homeowner price expectations because, as the quants term it, housing prices are highly serially correlated, which means that last year's price change tends to be one of the best predictors for what is going to happen this year. In effect, investors in the housing market tend to be momentum-type investors. Another important metric is homeownership rates. From the 1960s through the first half of the 1990s, the percentage of households that were homeowners in the United States was fairly stable, at roughly 63 percent. But

as we entered the latter part of the 1990s, that percentage started to take off, as shown in **Figure 3**. (Note that each percentage increase represents 1.4 million new homeowners.)

As homeownership extended itself across the socioeconomic spectrum, lenders responded by extending loans into the Alt-A and subprime areas. Lenders were willing to make these loans because they were looking at the housing market in the rearview mirror. This "backward" perspective gets so embedded in people's thinking that, after a while, it is not even noticed. For example, the rating agencies use quantitative models to assess the riskiness of a pool of mortgages. But these models may be based on the experience of subprime lenders from, say, 2002 to 2006 because that range is considered a representative sample. But such a sample captures the performance of subprime loans only during a period of significant housing price inflation. Even if lenders thought this analysis was in error, most saw no consequences to being wrong because, in the worst case, they could foreclose on the property and because the home had appreciated in value, there was little risk of loss.

Figure 3. Average U.S. Homeownership as a Percentage of Households, 1999–2007

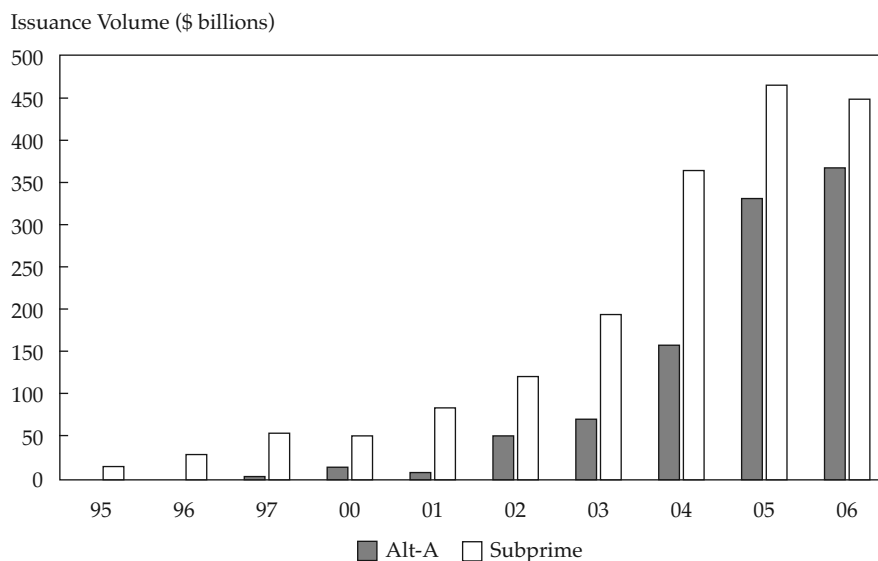


Source: Based on data from www.census.gov.

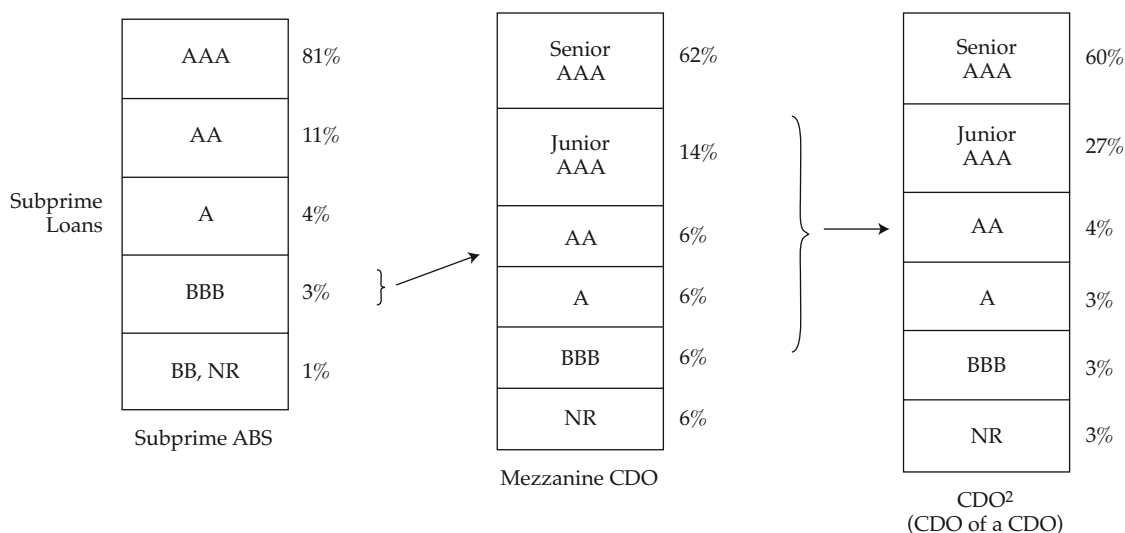
Not surprisingly, the United States experienced a tenfold increase in the volume of subprime and Alt-A loans over a short time, as shown in **Figure 4**. A perceptive person looking at this figure could have seen the early warning signs of an asset class getting itself into trouble. At its peak, subprime loan originations totaled almost half a trillion dollars. As credit availability drove home prices higher, U.S. consumers were able to extract equity from their homes, thereby making them feel wealthier. As a result, consumer spending exploded in the United States, creating a large U.S. current account deficit as consumers purchased goods from abroad, which then came back to the United States as capital flows. To complete the circle, these capital flows were directed in a massive way toward U.S. real estate-related securities.

Into this environment came CDOs (collateralized debt obligations), a Wall Street innovation designed to match investors looking to put dollars to work in the United States with homeowners looking to borrow. CDOs layer assumption on top of assumption based on backward-looking models. And to make things worse, they add leverage. As long as losses are in the anticipated 1–2 percent range, everything is fine. But with the 15–25 percent losses experienced recently in subprime loans, it is not hard to see how even top-rated tranches can be wiped out. Consider **Figure 5**. The leftmost bar indicates the degree of loss protection each credit tranche has in a subprime asset-backed security (ABS). It shows that the entire ABS can lose 1 percent before the BBB rated segment is affected. But this BBB rated segment is then combined with other BBB rated securities into a

Figure 4. Origination of Alt-A and Subprime Loans, 1995–2006



Source: Based on data from *Inside MBS & ABS* and UBS.

Figure 5. ABS, CDO, and CDO² Structures

Note: NR = not rated.

mezzanine CDO (center bar) with the anticipated loss protections based on experience. Of course, with default rates over 15 percent, all the BBB rated tranches have been wiped out and with them, even the top-rated tranches of the mezzanine CDO.

This environment is just like what Hyman Minsky described. He broke the changes, the evolution, in lending practices that occur over the course of a credit cycle into three stages. The first stage is traditional lending, in which a borrower must prove to a lender that he or she is able to pay the interest and amortize the principal of a loan.

In the second stage, lending is extended to more marginal borrowers. At the same time, and somewhat paradoxically, lenders feel confident about the current situation. Their loan book looks healthy. They appear to be well capitalized. Competition in the lending industry is robust. Lenders become willing to lend to borrowers who can pay only the interest on their loans. Principal will be rolled into a refinancing loan at some point in the future.

In the third and last stage, lenders know that borrowers not only cannot pay the principal on their loans but also cannot even pay all the interest. But lenders convince themselves that because the asset class is going to continue to appreciate in value, they are not at risk. When lenders are making loans in this way, the end of the credit cycle has been reached.

The Postmortem

After the fact, it is easy to assign blame. But the point is that no one saw this crisis coming, certainly not to this extent. It is also important to remember that, at

the time, all the participants were acting legally and in what they perceived to be their own economic best interests. For example, home buyers were eager to buy into a rising market. Rating agencies were receiving multiples of their regular fees. Investors in ABS wanted to enhance the yield on their portfolios. And even though the Fed may have had its concerns, at the end of the day, there was not a great deal that it could have done. It could perhaps have written a white paper warning that the housing market was getting expensive. It could have put out press releases cautioning against putting no money down on homes because borrowers might not be able to make the payments someday. But other than raising rates to try to make the speculative activity unprofitable, there was not a great deal the Fed could have done. In a market economy, any profitable activity will expand, grow, and franchise itself until it is no longer profitable. Over the course of a credit cycle, speculative activity becomes ingrained in an economy. We are currently going through a necessary deleveraging in the economy. It is a severe one. But it is not the first, and it will not be the last.

Plus Ça Change . . .

To judge from the media coverage, one would get the impression that nothing like this credit crisis has ever happened before. But the truth is, over just the last almost 20 years, we have had a number of similar examples, as shown in **Exhibit 1**. The conditions in the U.S. housing market, which represent our current problem, were the intended consequences of Fed policies that were designed to reduce

Exhibit 1. Deleveraging: The Last 20 Years

| Period | Source | Characterization |
|-----------|---|---|
| 1990–1991 | <ul style="list-style-type: none"> • Excessive commercial real estate. • U.S. “over-retailed.” • Overhang of leveraged buyout deals. | <ul style="list-style-type: none"> • Banking crisis. • Bank of New England fails. • Drexel Burnham Lambert shuts down. |
| 1994 | <ul style="list-style-type: none"> • Mortgage derivatives. • Excessively long durations. | <ul style="list-style-type: none"> • Procter & Gamble/Bankers Trust scandal. • General Electric Capital Corp. liquidates Kidder, Peabody & Co. • Orange County, CA—bankrupt. |
| 1998 | <ul style="list-style-type: none"> • Emerging markets liquidity crisis. | <ul style="list-style-type: none"> • Russia defaults. • Fed rescues Long-Term Capital Management. |
| 2002 | <ul style="list-style-type: none"> • Overleveraged corporate balance sheets. • Equity bubble bursts. • 9/11 attacks. | <ul style="list-style-type: none"> • Fallen angels. • Corporate accounting scandals. • Pension underfunding. |

the risk of a Japanese-style deflation while addressing the problems of the last cycle. What the exhibit shows is that the asset class being levered up each time is different. But the painful deleveraging environment that follows can be quite similar.

One of the problems with these deleveraging environments is that investors tend to learn the wrong lessons. For example, after 1994, the lesson that the market absorbed was that no one should ever buy a mortgage derivative. After 1998, the lesson was to avoid emerging markets. In 2002, the villain was corporate debt. These are the wrong conclusions. The point is that the problem is not with the asset class. The problem is with the amount of leverage being applied to the asset class in question. The real take-away is that all these asset classes are perfectly fine, reasonable, and acceptable at the right price and in the right risk context and are hopefully used by appropriate investors.

Do any of these previous cycles tell us anything about how painful an adjustment period we are in for? I think that the 1990–91 experience, with its excess of commercial real estate, does. Unfortunately, what it tells us is that real estate, residential or commercial, is not an easy asset class to unwind. The process will be economically and politically painful and will probably take years. This insight does not necessarily mean that a recession is unavoidable, but it probably does imply a diminution in economic growth for an extended period of time.

Note that in these previous cycles, the Greenspan Fed responded by aggressively lowering the federal funds rate. The market began to learn that the Fed displayed an asymmetrical response function—that is, when times are hard and deleveraging is the order of the day, the Fed will lower rates aggressively and hold them down. When things get better, the Fed will be slow to raise rates.

In effect, the Fed became the insurance policy against downside economic volatility. From a U.S. citizen’s point of view, this is a good thing. It minimizes unemployment and personal and business

bankruptcies. But for an investment professional, it does raise an interesting question. Could it be that the Fed is inadvertently teaching the market that liquidity will be abundant in good times and that in bad times, the Fed will come to the rescue? Is it possible that the Fed is systematically increasing the leverage in the system with each passing cycle?

If so, how could a shrewd investor exploit this situation? One strategy for doing so would be to attempt to profit through leverage, the call option strategy. To implement this strategy, identify an asset class that is increasing in value. Then, find a lender who also believes that this asset class will continue to appreciate and is willing to lend with no money down. In effect, this strategy creates a portfolio of call options. If the asset class continues to increase in value, all the benefits accrue to the call option holder. Success, of course, would require selling out of the asset class at the right time. But if the asset class declines in value, then the call option holder must return the assets back to the lender. In that case, the call option holder might have to declare bankruptcy, but with so little capital at stake, very little would be lost.

If this strategy is deemed too risky, consider a second strategy. This strategy would be to attempt to profit from the deleveraging part of the cycle. In this approach, in a Warren Buffett–like manner, one accumulates cash while everyone else is leveraging up. Then, when the inevitable deleveraging occurs, many attractive opportunities can be acquired at highly attractive valuations. The problem for the Fed is that the more it limits the pain of deleveraging, the more it limits the profitability of Warren Buffett–like strategies, and there may come a point when there is no one left to pick up the pieces.

Back to the Future

The Bernanke Fed has responded to the current crisis differently from the Greenspan Fed. First, aware of the moral hazards issue, the Bernanke Fed

was actually rather slow to lower rates initially, perhaps trying to resist the temptation to go down the same road. But as the severity of the problem became evident, the Fed quickly reversed course and lowered the federal funds rate 300 bps in just 6 months. In contrast, unique to the current situation is an extraordinary level of regulatory forbearance. Consider that Bank of America was allowed to buy Countrywide, the 16th largest depository institution in the United States, without any complaints by regulators, even though Bank of America already controlled an amount of banking deposits that generally has been viewed as the bright line that would disallow any future acquisitions.

The situation with Bear Stearns was also remarkable. The fifth largest broker/dealer in the United States was acquired over the course of 48 hours. The number of decisions that had to be made in that time by JPMorgan Chase, the Fed, the U.S. Treasury, key members of Congress, and of course, the President must have been staggering. Also, to

deal with this situation, the Fed has invented new liquidity facilities (such as term auction facilities and term securities lending facilities) that allow broker/dealers to take mortgages and ABS off their books, effectively giving them to the Fed in exchange for Treasuries. The Fed has also opened the discount window to primary broker/dealers. In my opinion, the totality of the regulatory response over the past nine months has been extraordinary.

Conclusion

Although the governmental response has been nothing short of heroic, perhaps it should not come as a surprise because the asset class involved, residential real estate, is so integral to the well-being of middle-class Americans. Regrettably, the very nature of real estate means that the problem will not be resolved quickly.

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