

# How We Got to the Credit Crisis

*The many and various  
factors that led to the current  
credit crisis.*

**THE CAPITAL MARKET** crisis has people asking, “How did we get here?” The last time things were this messy—in the early 1990s, with the disastrous commercial real estate situation exacerbated by the savings and loan collapse—the cause was simple: there was no money available in the system. By contrast, plenty of money exists today; nevertheless capital markets are unstable, and the origins of today’s problem are poorly understood.

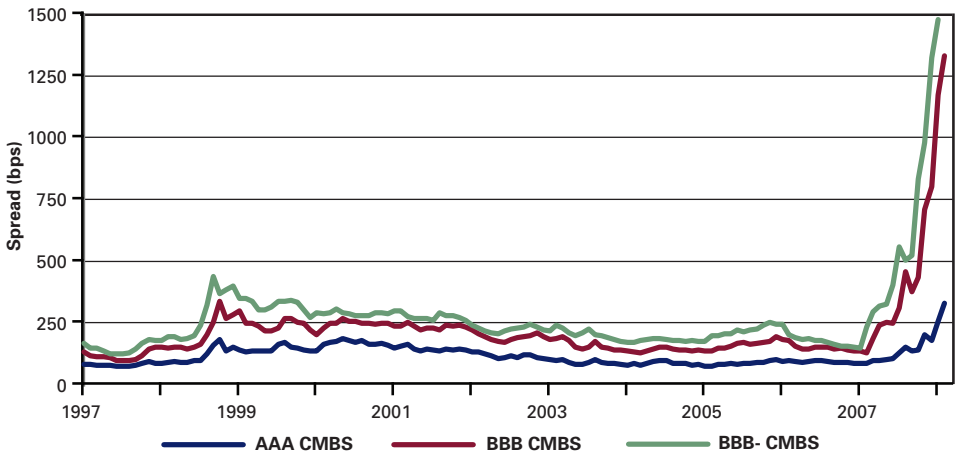
The answer to “How did we get here?” lies in three phenomena that arise at least once a decade. First, people are always torn between greed and fear. That is, our greed is fundamental, but we are also easily frightened. Think back to the time

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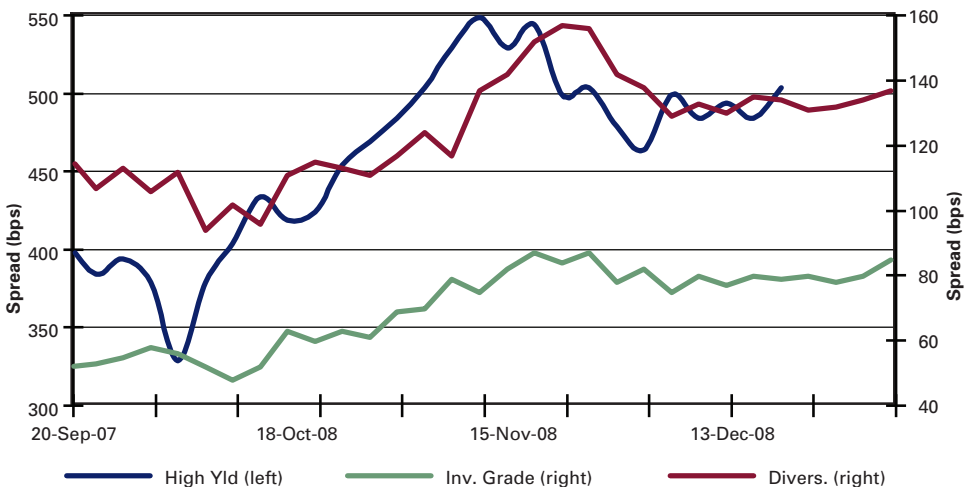
when American neighborhoods were filled with thirty-foot television antenna towers. Your mother told you never to climb the tower because it was dangerous. But you climbed it to demonstrate your bravery—a child’s version of greed. With each foot higher you climbed, the more fearful you

became. At some height, fear trumped greed—you stopped, and quickly scrambled down to the ground. Something similar happened in 2005 through early 2007. Although risk premiums and credit spreads narrowed, greed kept investors in the market. The lower spreads became, the

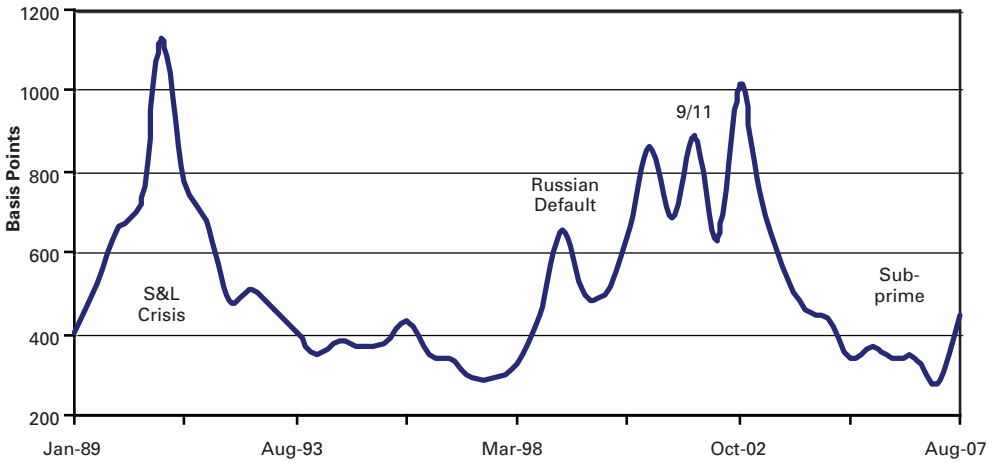
**Figure 1: Monthly spreads in the CMBS market**



**Figure 2: Credit default swap indices**



**Figure 3: High yield credit spreads**



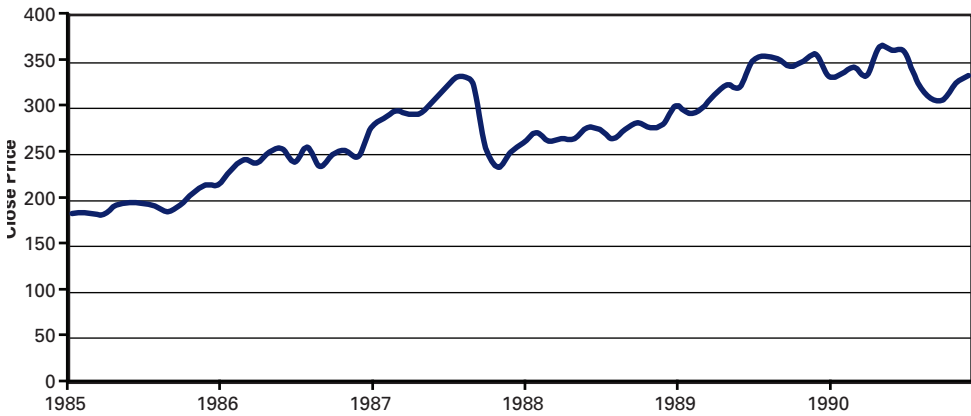
more fearful intelligent investors became. Still, most stayed in the market because they didn't want to miss out on an opportunity (Figures 1-3).

In the last twenty years, greed has been defeated by fear five times. The first time was the stock market crash of 1987 (Figure 4). Thanks to fear's victory, investors ended the day 23 percent poorer than they had been that morning. Fear spread on a grand scale and optimism quickly turned to pessimism. But the financial system survived and the economy escaped without a recession. The second time that greed was defeated by fear was the savings and loans collapse of 1990, which almost brought down the American financial system and also threatened other countries. But again, we survived. The third episode was the Russian ruble crisis of 1998, which

sparked widespread investor fear. At first glance, this episode is hard to explain; after all, Russia had never in the past paid its debt (there was still debt outstanding from Czarist Russia!). But the crisis wasn't really about Russian debt—it was about the basic realization that if lenders are willing to lend at low spreads to borrowers who have never paid their debts, then greed had been winning far too long. The Russian announcement that they would not service their debt merely underscored the extent of greed's victory. As a result, it was easy for fear to rout greed. But soon enough, greed returned in force during the Tech Bubble. The fourth time pervasive fear won was immediately after September 11, 2001, which was understandable. But again, by early 2003 greed was back.

Now, fear is triumphing for a fifth time

Figure 4: S&P 500



in twenty years, led by concerns about sub-prime residential debt. By April 2007, investors came to the realization that if lenders were willing to lend at high LTVs, razor-thin interest rate spreads, and without credit checks, to borrowers with bad credit records, greed had gone too far. If borrowers could obtain mortgages (many on speculative homes), it meant that all good lending options had been exhausted. Fear soared as people realized how low underwriting standards had fallen. But if the pattern of history holds, greed will be victorious within two years.

#### GREED RETURNS

The seeds of greed's return are already being sown. Historically, the first investors to return during a fearful period are contrarian non-institutional investors. These

tend to be "fundamentals" investors who rely on their own counsel. Their investments are usually relatively small and fall below the radar screen. But rumors of their bottom-feeding profits stiffen the resolve of institutional investors, some of whom will invest via opportunistic funds. Already billions of dollars have been raised for distressed debt funds, with more in the pipeline. The capital for these funds comes not only from high-wealth investors, but also from university endowments and large pension funds. The purchases by distress funds set floors for asset prices, providing comfort to more conservative institutional investors.

A unique feature of the current situation is the nearly \$30 billion invested in U.S. financial institutions (and probably more via distressed debt funds) by sovereign wealth funds. Although not historically contrarian investors, these sovereign

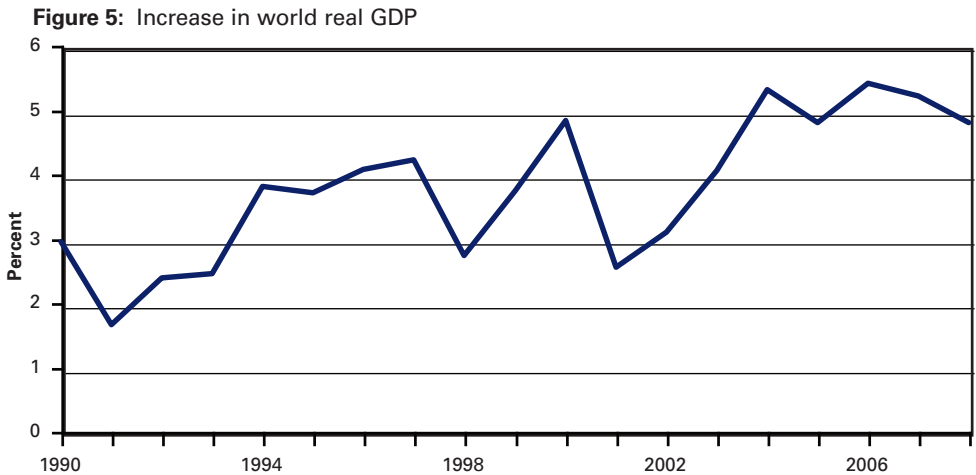
wealth funds have boldly gone where lesser investors fear to tread. Their equity infusions are recapitalizing major financial institutions, speeding the resumption of normal capital market operations.

Retail investors and the mass of institutional investors will be the last to return to the fray. These investors are “herd followers.” They return only after their consultants certify that others have made money. Frustrated by low yields on treasuries, and fearful that they might miss out on the next upswing, they will begin to return by mid-to-late 2008. And the return of greed will be in full swing.

#### MORE MONEY THAN BRAINS

A second phenomenon explains “how we got here.” Consider that in the history of

measured economic growth, the world economy never grew as rapidly as it did between 2002 and 2007 (Figure 5). Wealth was created faster than at any other time in history, but the investment infrastructure lagged the expansion of investable wealth. In other words, there was more money than brains. In such a situation, investors commonly take two shortcuts. The first is to rely on rating agencies, rather than due diligence, to determine investment risk. But the fact is that rating agencies have never correctly forecast a major credit collapse until after the fact! The second common shortcut is to skip independent due diligence, and merely rely on “who else is investing.” After all, “so-and-so is a smart investor, and they’re in, so it must be a good investment.” Many investors used this shortcut for “small” investments (say \$50 million),



focusing their diligence efforts on larger investments (say \$500 million). The problem is that when lots of investors trust other investors to do the diligence, frequently no one ends up doing diligence. So, there were not enough chairs when the music stopped, and a lot of “small” \$50 million errors quickly added up to billions in losses.

#### **ASSET-LIABILITY MISMATCH**

The third phenomenon that explains “how we got here” is that most assets, such as cash streams on buildings, the returns to homeownership, and corporate profits, are long-term, but most liabilities, such as bank deposits, are short-term. Since most assets are long-term in nature, there is a fundamental mismatch of assets and liabilities in the financial system. Mismatched investors run the risk that their debt will be subject to a margin call, or that they will be unable to roll their debt upon maturity. As long as greed is winning, this mismatch is not a systemic problem since values generally increase when greed prevails, which allows comfortable refinancing and few margin calls. But when fear defeats greed, and asset values drop, mismatched short-term debt presents a serious systemic problem. As asset values fall, investors with mark-to-market debt must sell assets

to pay down their debt. As they sell, they further force asset prices down, causing a ripple effect, until the process reaches balance sheets that are strong enough to withstand margin calls, or until greed begins to win again.

The credit crisis underscores a fundamental challenge of mark-to-market pricing: many (probably most) assets trade only by appointment. This is true even of securitized assets. The concept of mark-to-market revolves around the idea that there is a “price.” But for the vast majority of assets (including almost all debt, homes, private companies, and many stocks) there is no “price.” Rather, there is a bid price, and an ask price. For most assets, the bid and ask prices rarely converge, as witnessed by the fact that most assets rarely trade.

When greed is winning (which is about 80 percent of the time), price “marks” tend to reflect ask prices, as the bean-counters lack the expertise to counter claims by asset owners that they would not sell for less because asset prices are trending upwards. But as fear takes hold, the bean-counters gravitate to price “marks” in line with bids, fearful of legal liability if they overstate “prices.” The result is that “marks” plunge not only because fundamentals may have reduced both bid and ask prices, but also because “marks” shift from ask prices to bid prices. Such a shift can create 10 percent to 30 percent “mark” declines for illiquid assets.

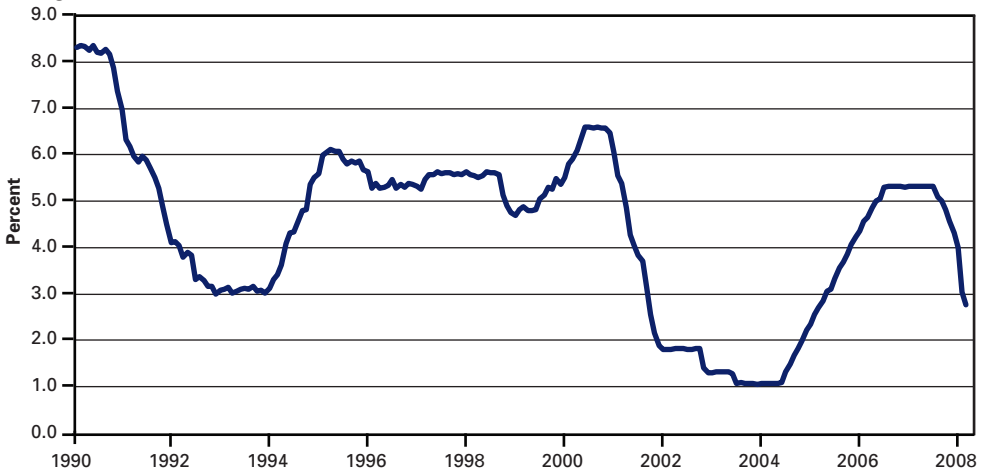
But it is wrong to view either the bid or the ask as the “price,” as a market price requires the presence of a willing buyer and a willing seller—that is, for the bid and ask prices to converge. Owners should not be forced to accept write-downs to prices at which they would never sell. “Marks” should be made using a consistent method, and never shift from using the ask to using the bid, as such inconsistency creates a misleading value picture. We suggest that for accounting purposes, the asset owner should always use their ask price, subject to fraud prosecution for using “marks” that systematically mislead investors. In other words, asset holders should consistently explain the worth of their assets. If investors feel misled by these disclosures, fraud statutes provide sufficient protection. But switching between ask and bid prices increases

misinformation. Auditors must not be asked to divine the “price” of illiquid assets. Their job should only be to audit and certify the consistency with which illiquid assets are marked.

#### THE SUBPRIME MESS

As the unprecedented growth of global wealth was already fueling record demand for safe assets, the Fed made a well-intentioned, but enormous, mistake. After September 11, 2001, they cut rates, flooding the market with liquidity (Figure 6). Then for four years they held rates so low that investors were guaranteed real losses of 1 percent to 2 percent on short-term safe assets. Faced with guaranteed real losses on short-term safe assets, investors chose to invest long and risky, while borrowing

**Figure 6:** Real Fed funds rate



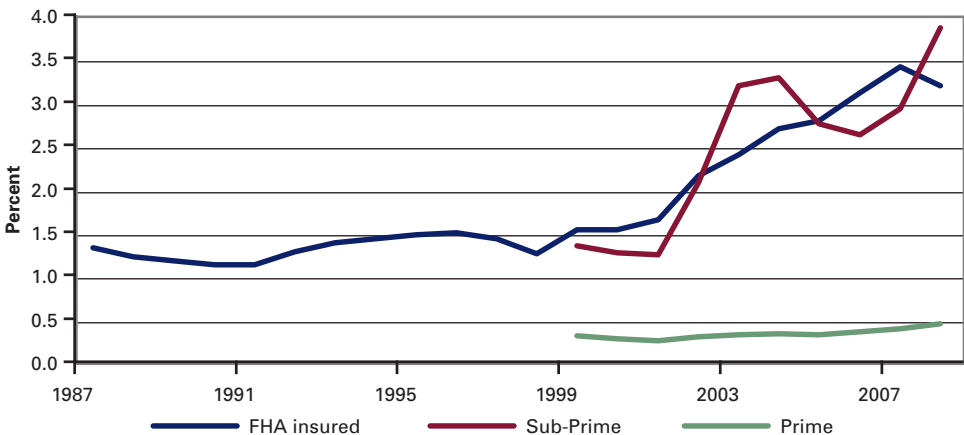
short, as at least this strategy offered the chance of a positive real return. The Fed forced investors to go longer and riskier than their expertise, and to mismatch their asset-liability positions, in effect issuing an economy-wide mandate to climb up the risk ladder. As investors steadily climbed this ladder, it was only a matter of time until fear prevailed; the trigger was the subprime residential mortgage market.

Historically, the typical subprime borrower was a small storeowner, or a service worker such as a waitress, golf caddy, cab driver, or charter boat captain. What these workers have in common are large amounts of unreported cash income. Consequently, as borrowers they have mortgage ratios that are “out of formula.” In other words, their maximum mortgages, calculated according to their reported incomes, are less than they what can actually afford. The solution is to take a

subprime loan and pay an extra 100 to 250 basis points on their mortgages. This premium is necessary because default rates have always been high on subprime mortgages, as fraud is easy on loans with little documentation. But these high cash-income households prefer to pay a mortgage premium rather than pay 40 percent in taxes on their unreported income.

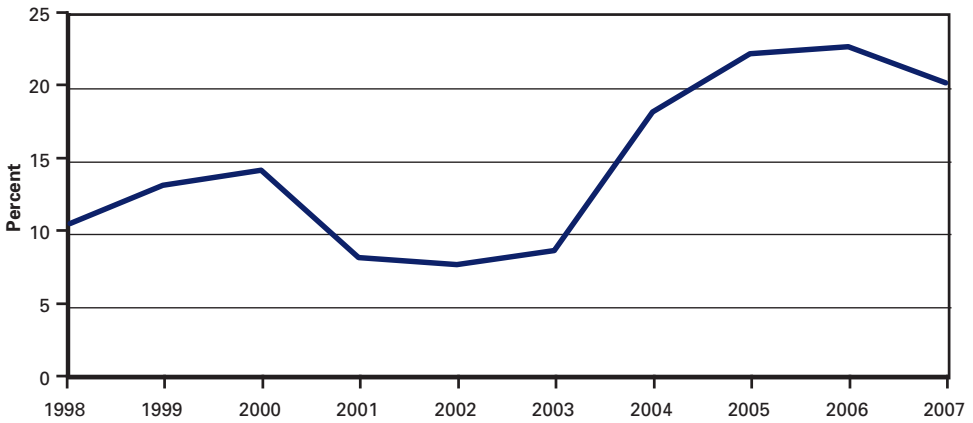
High cash-income household borrowing does not explain why subprime borrowing skyrocketed in 2005 and 2006, however. Who were the new subprime borrowers? The answer (which is rarely mentioned in the media) is simple: speculative homebuyers. From 2004 to 2006, some 500,000 homes were bought by speculators, who were schooled by late-night television infomercials to put 5 percent down and triple their money in six months by flipping the house. Pure unadulterated greed led these speculators

**Figure 7:** Mortgage delinquency rates (90+ days)





**Figure 8:** Subprime mortgages as a percent of originations



to buy with 95 percent LTV mortgages, secured from greedy lenders seeking a few extra basis points of spread. To avoid requesting commercial loans, for which they would not have qualified, these speculator-lenders misstated that the properties were their primary residences. But as greed rampaged, speculators had access to abundant high LTV, low (and no) doc mortgages.

If you lend \$285,000 to a family member who wants to purchase a \$300,000 home, and you do it without a credit check, that's imprudent. But if you make such loans to hundreds of thousands of people whom you've never met, that's idiotic. And idiots deserve to lose their money. At its heart, the subprime "problem" is the result of idiots lending to idiots.

Subprime defaults are higher than their historical norm, because once spec-

ulators realized they couldn't flip their homes for quick profits, the game was over (Figure 7). Many made just one payment on their mortgage. This is particularly true in Florida, Las Vegas, Phoenix, and southern California. These areas have high default rates because they had stunning levels of speculative buying. For example, Miami absorbed some 10,000 condos in ten years, but roughly 40,000 "pre-sold" units are under construction. In large part, idiot speculators put down deposits on these units, with money provided by idiot lenders.

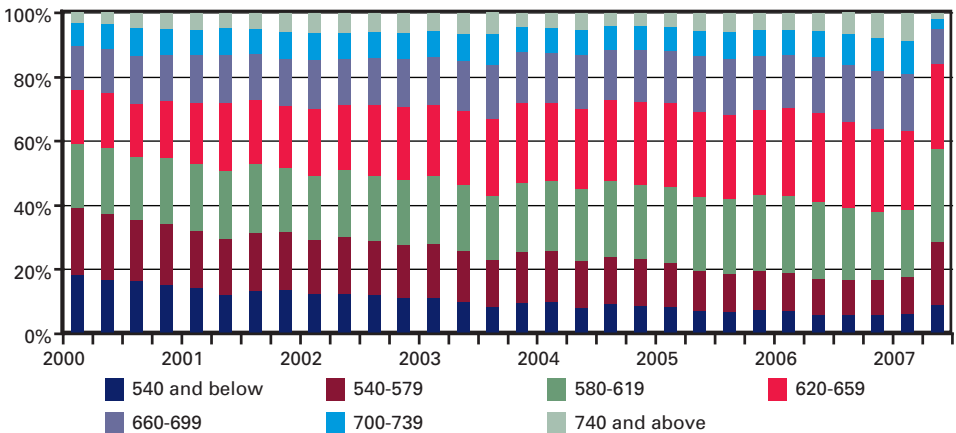
Is it surprising there are a lot of delinquencies by speculative buyers? After all, why make mortgage payments on an empty investment home you were planning to flip for a big profit, once you know it can't be done? You don't feed the beast: you stop paying and make the lender take

the home. We believe most mortgage defaults in strong economic regions of the country are by speculative owners. This is consistent with the rapid rise in 2000 through 2007 of subprime borrowers with high credit scores (Figure 9). In 2000, 60 percent of all subprime mortgage borrowers had credit scores of less than 620, but by the first quarter of 2007 only about 40 percent were below that threshold. During that period, the market share growth primarily occurred in the 620 to 659 and the 740+ credit rating categories, which increased from 17 percent to 26 percent and from 3 percent to nearly 9 percent, respectively. Then the trend reversed in the second quarter of 2007 when fear began to surpass greed, and about 60 percent of subprime borrowers were once again below the 620 threshold. Similarly, in the first quarter of 2007, nearly 20 percent of subprime loans were to borrowers with

credit scores of 700 or greater. This has since dropped to about 5 percent, versus the 10 percent “norm” in 2000.

Not all mortgage defaulters are idiot borrowers. In Ohio and Michigan, defaulters are people who actually live in their homes and have been ravaged by a local recession. Borrowers in these recession areas have lost the value of their equity, but they will not lose their homes. The reality facing lenders in Ohio and Michigan is that no one other than the defaulters wants to live in these homes. These loans will generally have to be restructured, as there is no other option. Defaults are also very high in Louisiana and Mississippi, where many homes no longer exist, or have been abandoned due to Hurricane Katrina. Why pay a mortgage on a home that no longer exists? Stop paying and let the mortgage and insurance companies work it out. The

**Figure 9:** Subprime borrower credit scores



lender cannot foreclose on a home that does not exist anymore.

#### FACT AND FANTASY

As speculative owners defaulted, the extent of poor underwriting became clear. Investors became fearful, and asked what else had been oversold and overrated. After all, the same people were packaging everything: subprime mortgages, mortgage-backed securities, and collateralized debt obligations. As fear took hold, investors effectively went on strike and stopped buying these assets. As margin calls occurred due to rising credit spreads, fear spread, and investors demanded much larger returns until they figured out what else was badly underwritten.

Today is very different from the early 1990s. In the 1990s people did not have money to invest; today, they do. But they demand a much higher return. Consider the example of the Abu Dhabi Investment Authority, which in order to stay cash-neutral must invest approximately \$2 billion each week. Their recent investment in Citi amounted to just three and a half weeks of cash flow.

Financial fantasies are being written by revisionist financial historians. These fantasies claim that if only the lenders had held on to the debt they issued, rather than securitizing and selling the debt, excessive

lending would have been avoided. They call for the return of whole loan lending for one's own account. But this version of past lender behavior is as overly romanticized, as are revisionist urbanist memories of the joy of children playing amid street traffic in the days of old. Just as children playing in New York City streets was dangerous, not romantic, the history of lenders who kept their loans was far from prudent. Remember the Japanese bank loans for real estate in the 1980s? Or Latin American lending by U.S. banks in the late 1970s and early 1980s? Or commercial real estate lending in the 1980s? All of these lending excesses occurred even as lenders retained their debt. In fact, retention of these loans only meant that the losses were far more concentrated and easier to hide from investors.

It is greed, not whether institutions hold or sell their loans, that generates excessive lending. Debt securitization evolved in the 1990s in response to the checkered history of whole loan lending, in order to diversify losses (among greedy investors) and to require more rapid resolution of problems. Human nature, not securitization, is the real culprit.

Unfortunately the idiots who lent to idiots have created a serious political problem. Congress and the administration feel compelled to "do something," even though the right thing to do from an economic standpoint is nothing. It is very

dangerous when something is right politically, but wrong economically. It is clear that a bailout of idiot borrowers and idiot lenders is a major mistake, as idiots who lend to idiots do not deserve to be bailed out, especially as there is no feasible way to distinguish the “innocent” (whatever that means) from the idiots. But although a bailout is unwise economically, it is probably a political necessity. The fear is that such legislation will seriously undercut the integrity of our capital markets.

The U.S. economy is performing well, even though we have been told for the last six years that it is on the brink of disaster. The U.S. economy continues to grow because consumers, who make up the bulk of economy, only need to access capital markets to buy cars and houses. The typical consumer buys a new car every four years, and a home about once every eight. Consider the capital “need” for a car: unless you’ve totaled your car, you can forestall your purchase until spreads on auto loans return to normal. But while reduced car buying hurts the auto industry, it does not hurt the economy; consumers will spend the money they would have spent on a new car on other things. The same is true of housing purchases. Mortgage spreads are quite high, especially on jumbos, so homebuyers are deferring their home purchases. This is bad for the housing sector, good for apartment owners, and neutral for the economy.

Since the majority of present homeowners locked in long-term mortgages at historically low rates in 2003 through 2005, bidders have to bribe owners to sell their houses. Young prospective homebuyers will continue renting for another year or two. Again, this does not hurt the economy, as they spend the money earmarked for housing on other things. Consumers are shifting consumption across categories, not stopping consumption.

#### **BUT WHAT ABOUT THE LOSSES?**

The newspaper headlines say, “Merrill Lynch lost \$8 billion,” or “Citi lost \$11 billion.” How can the economy withstand such massive losses? It is important not to confuse losses among participants in the economy with losses to the economy itself. If one player at a poker table loses \$11 billion, the table hasn’t lost a dime. The money simply transferred among the players. Similarly, subprime lenders lost tens of billions of dollars, but the U.S. economy did not lose a dime, since these losses were transferred to borrowers. The difference is that the lenders must report their losses, while private borrowers do not have to report their gains. But every lender loss is exactly offset by a borrower gain.

In fact, it could be argued that the United States made money from the sub-

prime excess. U.S. lenders probably gave \$100 billion too much to subprime borrowers, which is to say, \$100 billion more than they can pay back. Thus, for U.S. borrowers, there was an offsetting gain. But U.S. lenders sold \$30 billion to \$40 billion of their losses to Germans, French, Japanese, and Italian investors—anybody who would buy the overrated paper. Greed led these foreign buyers to buy loans they could not possibly understand, in exchange for 5 to 20 basis points higher spread. Bad for them, but a net gain for the United States, as \$100 billion in gains went to U.S. borrowers, but only about \$60 billion to \$70 billion of the losses were ultimately suffered by U.S. lenders.

There are two real losses associated with poorly underwritten loans. First, we built too many homes, and empty homes cannot generate a return. The economic loss is not the cost of the empty homes, but the carry cost until occupancy. There are currently 400,000 to 500,000 empty homes beyond the normal inventory. That is about \$100 billion worth of housing. It will take three to twenty-four months for this surplus to be absorbed, depending on the strength of the local economy. While some empty homes will have longer carry costs than others, we calculate roughly a year's carry on \$100 billion, or about \$8 billion to \$10 billion, is the social loss. Not much in the \$13 trillion U.S. economy, with its \$57 trillion net household wealth.

How can we be sure that the excess inventory of homes will be absorbed in roughly a year? Will immigration stop, or even slow, because of a credit crisis? Will couples decide not to have children, because of a credit crisis? No. Births, deaths, and immigration will be unaffected, meaning a U.S. population growth of about three million in 2008. This population growth translates into about 1.2 million new households—and every household needs a home. Add to that 100,000 second homes (the average in a normal year), and the 500,000 to 600,000 homes that are destroyed each year, and we will need about 1.8 million homes in 2008, about 70 percent of which will be owner-occupied. This amounts to 1.2 million to 1.3 million owner-occupied units demanded in 2008. The current run rate of single-family housing production is 800,000. Adding this new production to the 400,000 to 500,000 excess home inventory yields a supply of 1.2 million to 1.3 million available in 2008. So in 2008, demand will push housing inventories back to normal. Hence, home prices do not have to plummet, as many suggest, to restore market balance. All that is needed is a year of normal-demand growth.

The effect of the credit crisis on housing is affected by the fact that homeowners react differently to price changes than owners of other assets. Imagine that you learned that your stocks were 10 percent

overvalued. You would be smart to sell. If you learned that your bonds were 10 percent overvalued, you'd also sell. But if you learned that your home was 10 percent overvalued, would you sell? Probably not. Selling costs are about 6 percent to 8 percent of your home's value, selling takes time, and moving is a huge headache. In addition, your home provides a guaranteed dividend: the joy of living there.

The second major economic loss associated with the capital market crisis is the erosion of the credibility of U.S. capital markets. As securitization, ratings, underwriters, hedge funds, collateral, and liquidity were shown to be incomplete, incompetent, conflicted, and occasionally corrupt, the world's trust in U.S. capital markets declined. And trust is easy to lose, but hard to regain. The loss of U.S. capital market credibility—underscored by the fact that major banks “suddenly” discov-

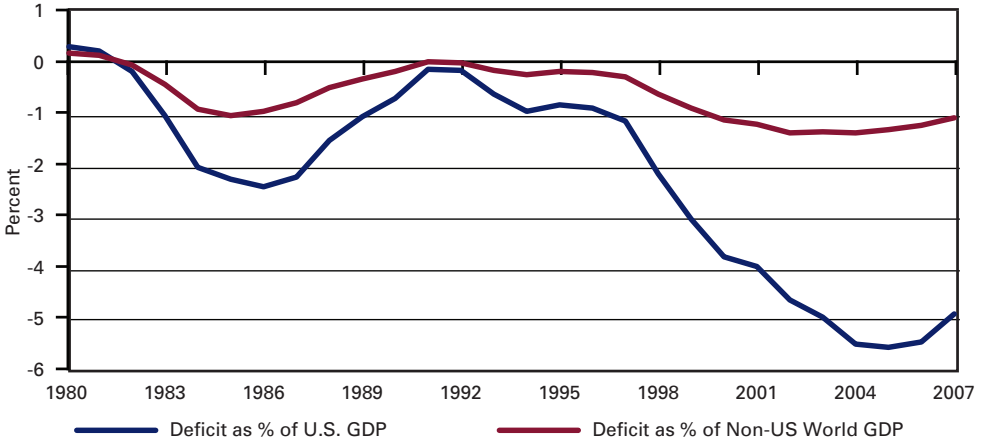
ered billions in losses—is reflected in the decline in the value of U.S. dollar and the reduced U.S. trade deficit. In spite of being enormously undervalued in terms of purchasing power parity, the dollar has tumbled during the credit crisis, as foreign investors reduced their demand for U.S. assets. After all, if U.S. assets are as illiquid and flawed as those at home, why pay a “safety” premium for U.S. assets?

The weak dollar is good for U.S. exporters, but bad for American financial markets and financial firms. The decline of the U.S. trade deficit reveals that foreign investors have dramatically reduced their demand for U.S. assets, which have turned out not to be as liquid, safe and transparent as advertised. Thus, the decline of our trade deficit is bad for the U.S. economy, as it reflects a decline in the desire of foreigners to invest in the United States (Figure 11). This economic loss associated

**Figure 10:** Exchange rates



**Figure 11:** The declining U.S. trade deficit indicates decreasing foreign investment



with lost capital market trust is probably much larger in magnitude than the loss on our empty houses.

### CONCLUSION

The U.S. economy will grow until the new government (regardless of which party wins) attempts to make good on their promises to “do something” about capital market excesses, health care, taxes, Iraq, and global warming. Their attempts will likely cause uncertainty, leading consumers and businesses to pause. As people and businesses pause, the economy will go flat. This means there will be too many workers, since the hiring that took place in 2008 was in anticipation of growth that did not occur in 2009. Hence, cost structures will be too high in 2009, causing

employment to be cut and the unemployment rate to rise. The recession of 2009 will be billed as the worst ever, but as certainty returns, the economy will again move forward.

In the meantime, growth in 2008 will be a pleasant surprise, unless the government does something really dumb (always a possibility). This government, which loves to spend, will spend even more in this election year. While this is not good in the long term, it will be good for 2008. Also in 2008, many investors who thought they were smart will be shown up for just having had money, as they struggle with their maturing mismatched short-term loans. But in five to seven years, asset prices will be at new highs, overriding concerns about asset/liability mismatches. You can count on this because greed wins 80 percent of the time.