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Special Section

The Crash of 2008:
Causes and Lessons to Be Learned

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The headlines of 2008 were dominated by falling housing prices, rising default and foreclosure rates, failure of large investment banks, and huge bailouts arranged by both the Federal Reserve and the U.S. Treasury. The wealth of many Americans has been substantially reduced and concern about a lengthy and severe recession is now widespread. All of this turmoil has come on the heels of more than 20 years of solid growth and unprecedented economic stability. What caused this crisis?

Causes of the Collapse of 2008

The housing boom and bust during the first seven years of this century is central to understanding the economic events of 2008. Why did housing prices rise rapidly, level off and eventually collapse? There was a dramatic change in mortgage lending standards beginning in the mid-1990s. To a large extent, these changes were the result of regulations designed to promote home ownership. However, they had secondary effects. Borrowers were encouraged to take out imprudent loans, purchase housing with little or no down payment, and gamble on rising housing prices. Lenders were encouraged to make risky loans they never would have made if they could not have been bundled into securities and passed on to someone else. Investment banks were permitted to leverage their capital irresponsibly because regulations treated housing loans more favorably than other loans. Blinded by the rising housing prices, the opportunity for short-term financial gain, and the tunnel vision of their position, almost everyone overlooked the seemingly obvious point that low down payment loans made to buyers with larger and larger mortgages relative to income were risky and they would soon lead to higher default rates.

Four factors underlie the rise and fall of housing prices and the conditions that eventually culminated with the crisis of 2008. Let's take a closer look at each of them.

1. Declining Lending Standards. During the past 15 years, two government-sponsored enterprises (GSE's), Fannie Mae and Freddie Mac exerted a large and increasing impact on mortgage markets because of their dominant role in the secondary market for mortgage securities.[1] Fannie and Freddie were privately owned, for-profit businesses but because their bonds were backed by the federal government, they were able to borrow funds at 50 to 75 basis points cheaper than private lenders. This gave them a competitive advantage and they were highly profitable for many years.

Because of their government sponsorship, they were also highly political. The top management of Fannie and Freddie provided key congressional leaders with large political contributions and often hired away congressional staffers into high paying jobs lobbying their former bosses. The relationship was one of "crony capitalism," but members of Congress, particularly those involved in banking regulation, found it highly attractive because Fannie and Freddie could be counted on to provide them with contributions and other valuable political resources.

Fannie and Freddie did not originate mortgages. Instead they purchased the mortgages originated by banks and other lenders in the secondary market. Propelled by their cheaper access to funds, Fannie and Freddie grew rapidly during the 1990s and by the end of the decade they held approximately 45% of all home mortgages and about 90% of those in the secondary market.

In 1995, the U.S. Department of Housing and Urban Development (HUD) imposed regulations requiring Fannie and Freddie to increase the share of their loans to low and moderate-income households. For example, the HUD regulations mandated that in 1996 40% of new loans financed by Fannie and Freddie had to go to borrowers with incomes below the median. This requirement was increased to 50% in 2000 and 56% in 2008. Similar increases were mandated for borrowers with incomes of less than 60% of the median. In 1999, HUD guidelines required Fannie and Freddie to accept smaller down payments and extend larger loans relative to income.

Because of their huge size and dominance of the secondary market, the policies of Fannie and Freddie exerted an

Protesters organized by a group called "Moratorium Now" gathered in front of the Bank of America in downtown Detroit, Michigan, December 10, 2008. The protest was in support of Lorene Parker, a woman who fell behind on her Bank of America mortgage and whose home was scheduled for sheriff sale.

REUTERS/Carlos Barria

Glossary

Adjustable rate mortgages (ARMs): Loans that have a designated interest rate for the first 1 to 3 years and a variable rate thereafter. The variable rate for these loans is generally tied to a readily available interest rate such as the one-year Treasury bill rate.

Alt A loans: Loans extended with little documentation and/or verification of the borrowers' income, employment, and other indicators of their ability to repay. Because of this poor documentation, these loans are risky.

Basis points: A basis point is one one-hundredth of a percentage point. Thus, 100 basis points is equivalent to one percentage point.

FICO score: Stands for Fair Isaac Corporation, which was the first company to create a measure of the likelihood the borrower will repay a loan. FICO scores range from a low of 300 to a high of 850. A score of 700 or more indicates the borrower's credit standing is good and therefore the risk of providing him or her with credit would be low.

Leverage ratios: The ratio of loans and other investments to a firm's capital assets.

Mortgage backed securities: Securities issued for the financing of large pools of mortgages. The promised returns to the security holders are derived from the mortgage interest payments.

Secondary mortgage market: A market in which mortgages originated by a lender are sold to another financial institution. In recent years, the major buyers in this market were Fannie Mae, Freddie Mac, and large investment banks.

Security rating: A rating indicating the risk of default of the security. A rating of AAA indicates that the risk of default by the borrower is low.

Subprime mortgages: Mortgage loans to borrowers who have a relatively poor credit history. Bank examiners consider a loan to be subprime if the borrower's FICO score is less than 660.

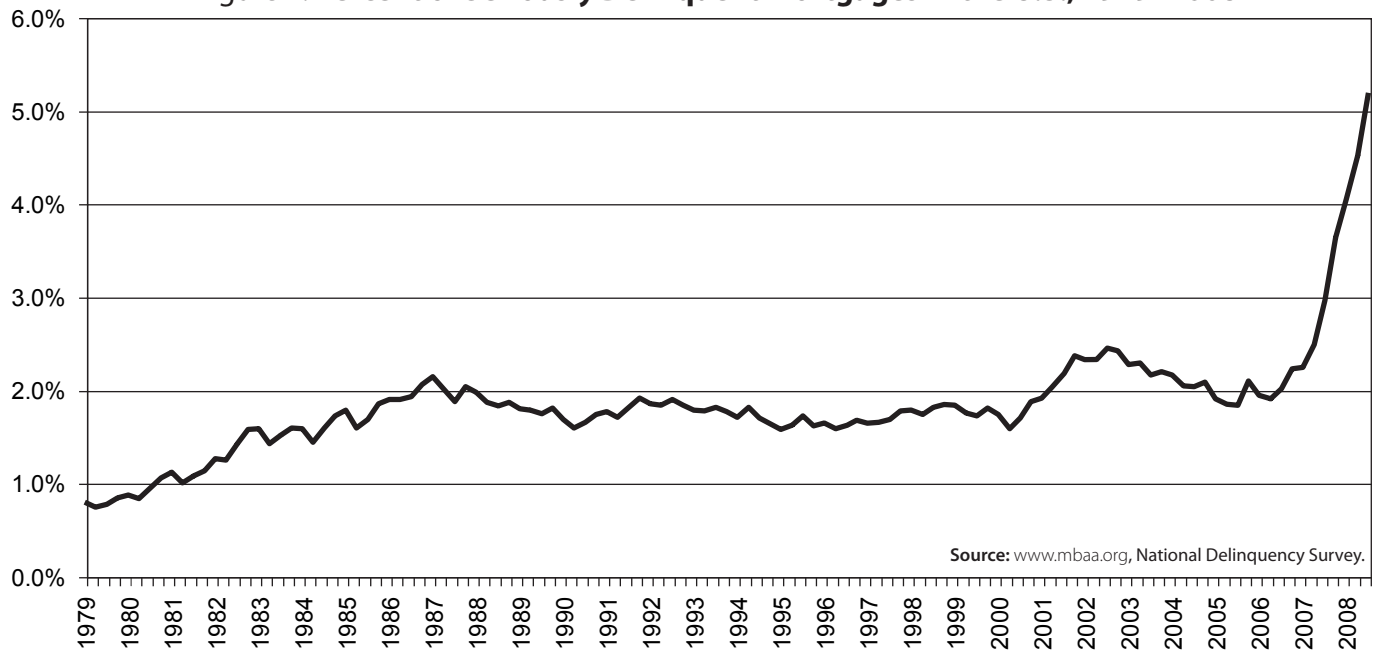
Troubled Asset Relief Program (TARP): Legislation passed during the fall of 2008 providing $700 billion in federal assistance for troubled financial institutions.

enormous impact on the actions of banks and other mortgage lenders. Recognizing that riskier loans could be passed on to Fannie and Freddie, mortgage originators had less incentive to scrutinize the credit worthiness of borrowers. The bottom line: required down payments were reduced, accepted credit standards lowered, and more loans extended to subprime borrowers.

Measured as a share of mortgages originated during the year, subprime mortgages rose from 4.5 percent in 1994, to 13.2 percent in 2000 and 20 percent in 2005 and 2006. When the Alt-A loans, those extended without full documentation, are added to the subprime statistics, a third of the mortgages extended in 2005-2006 were to borrowers with either poor or highly questionable credit records.[2] At the same time, conventional loans for which borrowers were required to make at least a 20 percent down payment fell from two-thirds of the total in the early 1990s to only one third in 2005–2006.

The shift from conventional loans to "flexible standards," as the regulators called

Figure 1. **Percent of Seriously Delinquent Mortgages in the U.S., 1979–2008**



the low down payment and/or interest only loans, exerted a huge impact on mortgage markets. Initially, the easier availability of mortgage credit increased the demand for housing and helped drive housing prices upward during 2002-2005. Historically, however, the foreclosure rates for subprime loans have been seven to ten times higher than for conventional loans to prime borrowers. Given this huge difference, it was highly predictable that the growing share of loans to those with weaker credit would eventually lead to higher default and foreclosure rates. This was particularly true in light of the erosion of the conventional down payment and loan value to income standards. Housing prices leveled off during the first half of 2006, and as Figure 1 shows, seriously delinquent mortgage default rates began to rise during the second half of the year. The current recession did not start until December 2007. Thus, mortgage default rates began increasing nearly a year and a half before the onset of the recession.

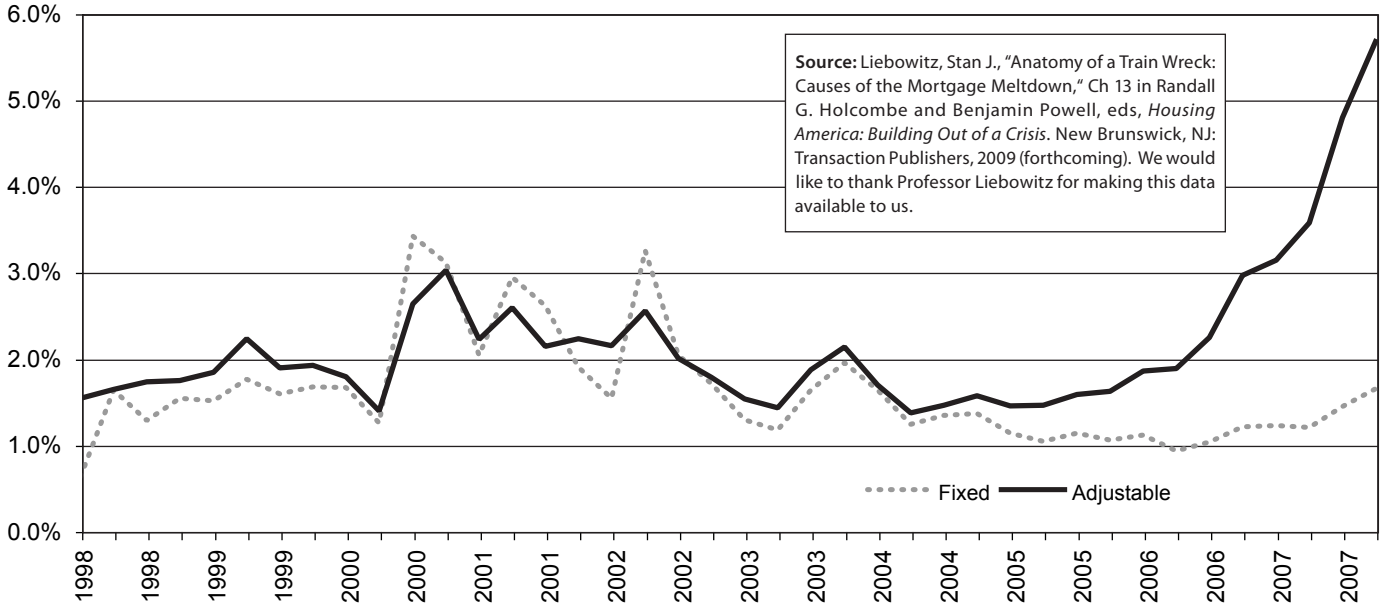
2. Federal Reserve Interest Rate Policies. The low interest rate policy of the Federal Reserve during 2002-2004, helped drive housing prices upward and the Fed's shift to higher short-term rates during 2005-2006 contributed to the housing price collapse. The Fed injected additional reserves into the banking system and kept the federal funds rate at 2% or less for more than three years. These prolonged, historically low, short-term interest rates made it cheap to borrow money, and in particular, made adjustable-rate mortgages (ARMs), which reflected the low interest rates, highly attractive to both lenders and borrowers. Adjustable rate mortgages jumped from 11 percent of total outstanding mortgages in 2002, to 22 percent in 2006-2008.[3] The low initial interest rates on ARMs made it possible for homebuyers to afford the monthly payments for larger, more expensive homes. Like the looser lending standards, this helped drive housing prices upward.

With time, however, the combination of low down payment loans, general erosion of lending standards, and the Fed's manipulation of short-term interest rates was disastrous. This combination provided households with the incentive to use ARMs both to undertake imprudent amounts of debt and purchase more housing than they could afford. Many who purchased houses with little or no down payment and adjustable rate loans when interest rates were low during 2002-2004 faced substantially higher monthly payments as interest rates rose and the monthly payments on their ARM loans were reset during 2006 and 2007. These owners had virtually no equity in their house. Therefore, when housing prices leveled off and began to decline during the second half of 2006, the default and foreclosure rates on these loans began to rise almost immediately. Owners with little or no initial equity simply walked away as their loans exceeded the value of their house.

In essence, the small down payment and ARMs combination made it possible for homebuyers to gamble with someone else's money. If housing prices rose, buyers could reap a sizable capital gain without risking much of their own investment capital. Based on the rising housing prices of 2000-2005, many of these home buyers expected to sell the house for a profit and move on in a couple of years. There were even television programs and investment seminars pushing this strategy as the route to riches.

Although subprime borrowers were more likely to default than prime borrowers, there was no upward trend in the foreclosure rate on fixed interest

Figure 2. **Foreclosure Rates on Subprime Mortgages, 1998–2007**



rate loans to subprime borrowers during 2000-2008. In contrast, as Figure 2 shows, the foreclosure rate on ARM subprime loans soared beginning in the second half of 2006. The pattern was the same for loans to prime borrowers. While the foreclosure rate on fixed interest rate loans to prime borrowers was unchanged, the foreclosures on ARM loans to prime borrowers also began to soar in 2006. In fact, the foreclosure rate on adjustable rate mortgages increased by a larger percentage for prime than subprime loans. Responding to the incentives created by the regulators and the Fed's low interest rate policy, both prime and subprime borrowers purchased houses with ARM loans and little or no down payment in the anticipation of gains from a continuation of higher housing prices.

3. Excessive Leverage. A rule change adopted by the Securities and Exchange Commission (SEC) in April of 2004 made it possible for investment banks to increase the leverage of their investment capital, which eventually led to their collapse. A firm's leverage ratio is simply the ratio of its investment holdings (including loans) relative to its capital. Thus, if a firm had investment funds that were 12 times the size of its equity capital, its leverage ratio would be 12 to 1.

At the urging of leaders of the investment community, including future Treasury Secretary Henry Paulson who was CEO of Goldman Sachs at the time, the SEC regulation increased the permissible leverage ratio of investment banks. Essentially, the SEC applied regulations known as Basel I to investment banking. These regulations, which have been adopted by most of the industrial countries, require banks to maintain at least 8 percent capital against assets like loans to commercial businesses. This implies a leverage ratio of approximately 12 to 1. However, the Basel regulations provide more favorable treatment of residential loans. The capital requirement for residential mortgage loans is only 4 percent, which implies a 25 to 1 leverage ratio. Even more important, the capital requirement for low-risk securities is still lower at 1.6 percent. This means that the permissible leverage ratio for low risk securities is about 60 to 1.

The large investment banks, like Lehman Brothers, Goldman Sachs and Bear Stearns, responded to the change in the leverage rule by bundling large holdings of mortgages together and issuing securities for their finance. Because of the diversity of the mortgage portfolio, investment in the underlying securities was thought to involve minimal risk. Thus, security-rating firms like Moody's and Standard & Poor's provided the mortgage-backed securities with an AAA rating, which made it possible for the investment banks to leverage them up to 60 to one against their capital.

The mortgage-backed securities, financed with short-term leverage lending, were highly lucrative and investment banks sharply expanded their activities in this area. The large number of mortgages packaged together provided lenders with diversity and protection against abnormally high default rates in specific regions and loan categories. But it did not shield them from an overall increase in mortgage default rates. As default rates increased sharply in 2006 and 2007, it became apparent that the mortgage-backed securities were far more risky than had been previously thought. It was difficult to know their true value, and as their risks became apparent, investors became more reluctant to hold them, and the value of the mortgage-backed securities plummeted. The highly leveraged investment banks had incurred massive

short-term debt obligations in order to finance their holdings of these securities, but the securities had lost their value as collateral, and the investment banks had too few reserves on which to draw when their short-term debts became due. This is why the investment banks collapsed so quickly. In fact, when the Fed financed the acquisition of Bear Stearns by JP Morgan Chase, the leverage ratio of Bear Stearns was an astounding 33 to 1.

Why didn't key Wall Street decision-makers see the looming danger? No doubt, they were influenced by the low and relatively stable default rates over the past several decades. Even during serious recessions like those of 1974–1975 and 1982–1983 (see Figure 1), the mortgage default rates were only a little more than 2 percent, less than half the rates of the current crisis. But it was still reasonable to expect that analysts at investment companies and security rating firms would have warned that the low historical rates were for periods when down payments were larger, borrowing was more restricted relative to income, and fewer loans were made to subprime borrowers. A few analysts did provide warnings, but their views were ignored by high-level superiors. Again, economics helps explain why. The bonuses of most Wall Street executives are closely tied to short-term profitability and the mortgage-backed securities were highly profitable at the time. When a personal bonus of a million dollars or more is at stake this year, the recipient is likely to be far less sensitive to the long-term dangers. The shortsighted compensation packages that characterize many Wall Street firms led to the collapse of some of its giants.

4. Increased Household Debt. High household debt also contributed to the collapse of 2008. During the past two decades, household debt has grown to unprecedented levels. Between 1950 and 1980, household debt as a share of disposable (after-tax) income ranged from 40 percent to 60 percent. However, since the early 1980s, the debt to income ratio of households has been climbing at an alarming rate. It reached 135 percent in 2007, more than twice the level of the mid-1980s. Unsurprisingly, more debt means that a larger share of household income is required just to meet the interest payments. Today, interest payments consume nearly 15% of the after-tax income of American households, up from about 10% in the early 1980s.

Interest payments on home mortgages and home equity loans are tax deductible, but household interest on other forms of debt is not. This incentive structure encourages households to wrap more of their debt into loans against their housing. But a large debt against one's housing will mean that housing will be hardest hit by unexpected events that force major adjustments. Thus, the high level of household indebtedness also contributed to the current crisis.

Lessons from the Current Crisis

The Crisis of 2008 has numerous villains, including aggressive marketers, greedy lenders, incompetent rating agencies, speculative homebuyers, and unethical and corrupt investment managers. However, the foundation of the crisis is primarily a story about unintended consequences and what happens when the incentive structure is polluted by unsound institutions and policies.

Over the past 15 years, the structure of incentives in the housing and lending markets was perverted by bad policies. As we reflect on current conditions, we must think more seriously about incentives, accountability, and the secondary effects of policy changes. Policies on lending standards, down payments, and holding loan originators accountable for the credit worthiness of the borrower affect how the housing and lending markets work. They should not have been weakened in the first place and steps now need to be taken to restore them. Policymakers should also think about ways to provide stockholders with better protection and corporate executives with a stronger incentive to serve shareholders and pursue long-term success. Perhaps a larger share of corporate executive compensation needs to be tied to share value four or five years in the future, in which case, those shares would have little value if shortsighted policies were pursued.

Both monetary and fiscal policies are now on a highly expansionary course and they will eventually turn the macro economy around. But without fundamental reforms designed to restore sound incentives and make high-level decision-makers in both the corporate and government sectors more accountable, the recovery is likely to be both weak and relatively short. A quick fix may provide additional time, but more fundamental reforms that will encourage productive actions will be required for long-term future success.

Notes

1. The Federal National Mortgage Association and Federal Home Loan Mortgage Corporation, commonly known as Fannie Mae and Freddie Mac, were created by Congress to help provide liquidity in secondary mortgage markets. Fannie Mae, established by the federal government in 1938, was spun off as a "government sponsored enterprise" (GSE) in 1968. Freddie Mac was created in 1970 as another GSE to provide competition for Fannie Mae.
2. These data are from the Joint Center for Housing Studies of Harvard University, *The State of the Nation's Housing 2008*, www.jchs.harvard.edu/son/index.htm and Edward M.Gramlich, *Financial Services Roundtable Annual Housing Policy Meeting*, Chicago, Illinois, 21 May 2004. www.federalreserve.gov/boarddocs/speeches/2004/20040521/default.htm
3. Office of Federal Housing Enterprise Oversight, *Single-Family Mortgages Outstanding, 1990-2008Q3*. www.ofheo.gov/media/marketdata/SFMO90to08Q3.xls

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