When Will It End?

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And what does the near collapse of the financial system mean?

- The financial shock of 2008 is the most serious financial crisis since the 1929 stock market crash.
- Policymakers' unprecedented response to the crisis has brought the financial system back from the precipice.
- The potential cost of the government's actions is mind-boggling, with an upfront commitment that has surged to well over $1 trillion.
- The actual cost to taxpayers will be much less; certainly no more than the $250 billion cost of resolving the early 1990s' savings and loan crisis.
- The cost of no government action would be much greater; the financial system would likely unravel and take the economy with it.
- Even with the government engaged, the negative economic fallout will be significant. The recession that began in late 2007 will continue into 2009. The downside threats are now much greater as well.
- The economy is expected to find its footing by the end of the decade, and the financial system will do so by early in the next decade.
- The long-term challenges created by recent events are daunting; at the same time, the flexibility of the U.S. financial system and economy is without parallel.

The global financial upheaval borders on biblical proportions. The system at times has appeared on the verge of collapse. The result is a complete transformation of the financial system and a redefinition of government's role in it. The already-struggling economy's near-term prospects have darkened; recession now seems likely well into next year. The long-term fallout depends on whether policymakers are able to gracefully extricate the government from its new role and whether they are successful in reworking the nation's Byzantine regulatory framework.

The current financial crisis is arguably the worst since the 1929 stock market crash. Every corner of the global financial system has been shaken. Money markets have seized up, bond issuance and mergers and acquisitions have dried up; credit spreads have ballooned, and stock markets have been a daily roller-coaster ride. Fannie Mae and Freddie Mac have been nationalized, Lehman Brothers has failed, Merrill Lynch sold itself to Bank of America, and AIG, one of the world's largest insurance companies, has effectively become the property of the federal government. Even storied Goldman Sachs and Morgan Stanley have jettisoned their investment bank structures to become bank holding companies in order to more readily get help from the Federal Reserve if need be.

The financial system has now been in turmoil for more than a year. The proximate catalyst for the crisis was the failure of two Bear Stearns hedge funds that ran aground when their mortgage investments soured in summer 2007. That event now seems quaint in comparison with what has followed.

Boom to bust

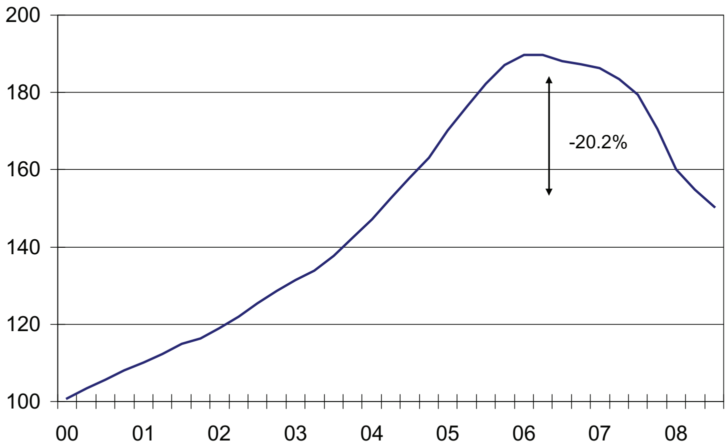
The fundamental fuel for the crisis are the hundreds of billions in losses that financial institutions are taking on their bad mortgage-related investments made during the housing boom and now unraveling in the housing bust. National house prices had nearly doubled during the first half of the decade. In parts of the country such as California and Florida they rose threefold (see Chart 1).[1] It was a bubble: House prices had become unhinged from household income and rents.

The bubble was inflated by numerous forces. The most important of these were the flawed process of mortgage securitization, a lack of regulatory oversight, and plain old-fashioned hubris. In securitizing mortgage loans, no one involved had enough at stake to make sure that the mortgage loans being made were good. Lenders originated the loans but quickly sold them to investment banks. Investment banks packaged the loans and made them into securities that they quickly sold to global investors. Rating agencies grading the riskiness of the securities based their assessments on loan information provided by the investment banks; they did not check the accuracy of that information. Global investors took the rating agencies' grades as a given and did little of their own due diligence, not checking whether the loans backing their securities were good.

Banking and securities regulators were silent during all of this. Deregulatory sentiment that had begun nearly a quarter-century earlier was

[1] This is measured by the national Fiserv Case-Shiller index. There are numerous measures of house prices, but the CS index is the closest representation of reality in the housing market. It is a repeat-sales index for all homes sold in arm's-length transactions. It does include homes sold at auction in a foreclosure proceeding, but it does not include nonprice discounts offered by home sellers that have become ubiquitous in the housing bust.

Chart 1: Housing Boom and Bust
Fiserv Case-Shiller National House Price Index, 2000Q1=100



at its apex, the view being that market forces would be self-disciplining. That is, self-interested investors would make sure the loans backing the securities they were buying would be good loans. This sentiment was strongest at the Federal Reserve under Chairman Alan Greenspan. The mortgage lending industry is regulated by an alphabet soup of federal and state institutions with acronyms such as the OCC, OTS and FDIC, but the Fed is the nation's most important regulator. It had been empowered by Congress in the 1990s (under the HOEPA laws) to set guidelines for mortgage lending that would apply across all regulators. Yet, only early this year did the Fed take Congress up on that authority. Some regulators were publicly worried about egregious mortgage lending driving the housing boom, but it was all but impossible for them to respond effectively. Given the fractured regulatory framework, lenders were able to take on corporate structures allowing them to skirt oversight, and regulators could not agree among themselves on how to respond quickly enough to make a difference.

No bubble is possible without wild optimism. House prices rose strongly one year and then the next, and then everyone began forecasting with a ruler, expecting house prices to rise strongly ad infinitum. Given this forecast, homebuyers began flipping homes. Homeowners added pools or new decks. Lenders made more aggressive loans, thinking they could refinance borrowers before they went delinquent. Investors were willing to buy increasingly arcane securities with yields that provided very little cushion if the securities did not perform as planned.

The housing boom began to unravel in earnest in the spring 2006 selling season. The surge in house prices during the first half of the decade, along with Fed tightening, had made housing unaffordable, even with anything-goes mortgage lending. Subprime loans with no down payment, no mortgage insurance, and no proof of income and piggyback second mortgages had become more common than not. House prices have since fallen close to 20%, bringing prices back to where they were at the beginning of 2004.

Foreclosure waves

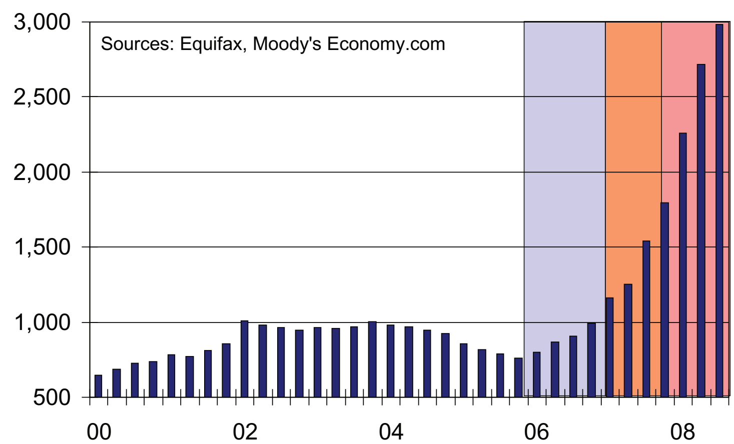
When house prices began to flag in the spring of 2006, investors realized the market had turned on them and started defaulting on their loans. House flippers, looking to make a quick buck, had juiced their returns by using low, or no, down payment loans. Many had lied about living in the homes to obtain better terms. Lenders did little to thwart this behavior. Now the result was a wave of so-called early payment defaults as flippers turned their keys back to their lenders, in some cases without even making a single mortgage payment (see Chart 2).

A second wave of foreclosures hit in 2007, when subprime borrowers who had gotten loans at the peak of the housing market in 2005 faced their first payment reset. Nearly all the subprime loans made in 2005 and 2006 were "2-28" loans: the payments were fixed for two years, then reverted to adjustable-rate mortgages with adjustments tied to six-month Libor. With rates still very high in 2007—this was before the Fed began cutting rates in earnest—the resets were too large for many subprime borrowers to handle; the average monthly mortgage payment jumped by $350 from $1,200 to $1,550 per month.

Resetting has not been a serious problem in 2008, as Libor has fallen sharply with the Fed's aggressive rate cutting. However, a third wave of foreclosures has hit, driven by a combination of negative equity and a weakening job market. Nearly 10 million of the 52 million homeowners with first mortgages are now underwater—that is, the market value of their homes is less than they owe. This is up from 4.1 million homeowners a year ago and 2.7 million two years ago.

Negative equity by itself is generally not a reason for a mortgage default. Most homeowners do not have a precise grip on the value of their homes. Even if they could determine they were underwater, they would not walk away, given the hefty transaction and psychological costs. There is growing anecdotal evidence of more so-called walk-aways in the most distressed areas of the country, where prices are already off more than 30% from their peak, such as in the Central Valley of California or Southwest Florida, but these remain unusual. Mixing negative equity with a disruption to income from unemployment or lost overtime hours, or an unexpected expense due to a divorce or even a leaky roof, is a catalyst for a default.

Chart 2: Foreclosure Waves
First mortgage loan defaults, ths, SAAR



Financial system losses

About 15 million sketchy mortgage loans were made during the teeth of the housing boom from mid-2004 to mid-2007. Of these, 7.25 million were subprime loans, 5.25 million were so-called "alt-A" loans, and 2.5 million were jumbo option ARMs or other types of risky mortgages. It is reasonable to expect that close to 10 million of these loans will ultimately default.[2] Not all will go through the entire foreclosure process, but of those that do, the loss on the mortgage will be close to 50%. If this arithmetic holds, then total losses on residential mortgage loans and securities to the financial system will approach $625 billion.[3]

The losses the financial system will have to bear do not stop there. Total losses suffered on all assets originated through 2007 are expected to amount to some $1.1 trillion, equal to a stunning 4.5% of all assets (see Table 1).[4] Construction and land development loans and commercial mortgage loans will suffer significantly, with losses expected to total $225 billion.[5] Another $125 billion will be lost on corporate loans, and losses on consumer loans including vehicle and credit card debt will amount to $100 billion. Abstracting from the government's nationalization of big parts of the financial system, depository institutions are expected to suffer $500 billion in losses, while broker-dealers, insurance companies, pension funds, hedge funds, and the government-sponsored enterprises will each lose approximately $100 billion each.

Financial panic

Although eye-popping, the magnitude of these loss estimates has been known for some time. And although they are the fodder for the panic that has roiled the financial system in the past few weeks, the catalyst seems to have been the government's takeover of Fannie Mae and Freddie Mac. Global investors reasoned that if these two government-backed institutions could run aground, anybody could.

Investors immediately turned their attention to Lehman Brothers, a highly leveraged investment bank that had been struggling since the failure of Bear Stearns. Yet, Bear's failure in March was driven by a lack of liquidity; that was not the issue for Lehman. The Federal Reserve had established two new credit facilities to provide emergency cash for investment banks after the Bear collapse. Lehman had access to these.[6] Yet, even with enough liquidity to operate, Lehman's business evaporated as its counterparties lost faith that it would remain a going concern. Lehman's plunging stock price, driven in part by rampant short-selling of its stock and the ballooning cost of insurance to protect against a default on its debt, heightened these fears.[7]

The Treasury Department, Federal Reserve, and a host of major financial institutions tried to find a graceful alternative to the Lehman collapse; they failed, and so did Lehman. Unlike Bear's collapse, which had been a complete surprise, Lehman's unraveling was widely predicted. Policymakers felt that Lehman's counterparties had had plenty of time to plan for it, and thus decided not to help Lehman as they had Bear. It was a calculated risk. Lehman made markets for all kinds of fixed-income assets, including credit default swaps and foreign exchange. Policymakers believed, but were not certain, that these markets would be able to smoothly adjust to a Lehman bankruptcy.

The gamble seemed to pay off initially. Lehman filed for bankruptcy, but markets continued to trade with little disruption. One casualty of the Lehman failure, however, was the Reserve Fund, one of the nation's oldest money-market mutual funds for institutional investors. The Reserve Fund's investments included commercial paper issued by Lehman; as this plunged in value, it forced Reserve's net asset value below $1—an extremely rare phenomenon known as "breaking the buck." This panicked investors, who had come to think of money-market funds as so safe and liquid as to be one step away from the mattress. Redemptions from the fund began to accelerate.

This took the financial crisis to another level. Money funds hold some $3.5 trillion and are large investors in short-term securities such as commercial paper, which funds operations for factories, stores and other nonfinancial businesses. If money fund redemptions continued, the market for commercial paper would dry up, endangering the operations of firms throughout the real economy.

Adding to the turmoil was the collapse of American International Group, one of the world's largest insurers. In this case, policymakers deemed that an AIG bankruptcy would be too much for the global financial system to bear and stepped in with an $85 billion loan in exchange for a nearly 80% equity stake in the firm. AIG is a big player in the credit default swap market, through which it insures as much as $450 billion in bonds. An AIG bankruptcy could cause all that insurance to fail as well, since any financial institutions holding AIG-insured bonds would be forced to further mark down the value of their holdings. The resulting hit to those institutions' capital could very well force more failures, spreading the damage throughout the financial system. AIG was too big to fail in the judgment of policymakers.

By the morning of September 18, the global financial system was near complete collapse. The panic was evident in plunging stock prices, soaring gold prices, ballooning credit spreads, and three-month Treasury bill yields that were effectively offering a 0% interest rate. The spread between three-month Libor and Treasuries, a good proxy for the angst in the financial system, surged to an all-time high (see Chart 3).

Policymakers act

Given the widespread financial panic and the clear and imminent threat this posed to the economy, policymakers had no choice but to take unprecedented and massive actions. These steps include:

1) **Troubled Asset Relief Program**. Under legislation expected to become law this week, the Treasury Department will establish a program funded by taxpayers to purchase up to $700 billion in bad residential and commercial mortgage assets from financial institutions. The legislation is understandably vague, but

[2] Default is the first step in the foreclosure process. A default usually occurs after a borrower is more than five months delinquent on their loan.

[3] This loss forecast assumes that house prices will fall by another almost 10%, making the peak-to-trough decline in prices approximately 30%. The bottom in national house prices is anticipated in 2009q3. It also assumes that the nation's unemployment rate will peak at 7% by the end of 2009, up from its current 6.1%. Other key assumptions are that oil prices will remain near $100 per barrel and that the major financial failures will subside by next spring.

[4] This includes cash flow losses by domestic and foreign-based institutions on their U.S.-based assets.

[5] This assumes a 15% peak-to-trough decline in commercial real estate prices as measured by the Moody's/REAL repeat-sales index.

[6] This includes the Primary Dealer Credit Facility and Term Security Lending Facility.

[7] This is reflected in the ballooning spread on Lehman's credit default swaps. CDS are insurance contracts on bonds in which one party for a premium agrees to pay another if the issuer of the bond defaults.

Table 1: Financial System Losses on Unsecuritized Loans and Securities
On assets originated through year-end 2007
$ bil

	Outstanding	Expected losses	Loss rate	Expected losses: Banks	Insurance	Pension funds	GSEs and Government	Hedge funds & Mutual funds
Residential mortgages	10,085	623	6.2	317	83	69	87	67
Consumer credit	2,025	102	5.0	86	10	3	-	3
Commercial real estate	3,425	232	6.8	109	33	36	24	30
Corporate	7,835	125	1.6	65	10	17	-	33
Total loans	23,370	1,082	4.6	577	136	125	111	133

Financial System Losses on Unsecuritized Loans
$ bil

	Outstanding	Expected losses	Loss rate	Expected losses: Banks	Insurance	Pension funds	GSEs and Government	Hedge funds & Mutual funds
Subprime	335	61	18.2	33	4	4	13	7
Alt-A	605	43	7.1	22	4	3	11	3
Prime	3,850	40	1.0	21	1	1	17	-
Commercial real estate	2,475	32	1.3	22	4	3	1	2
Consumer loans	1,400	100	7.1	84	10	3	-	3
Corporate loans	3,700	55	1.5	31	3	3	-	18
Leveraged loans	175	20	11.4	9	2	4	-	5
Total loans	12,540	351	2.8	222	28	21	42	38

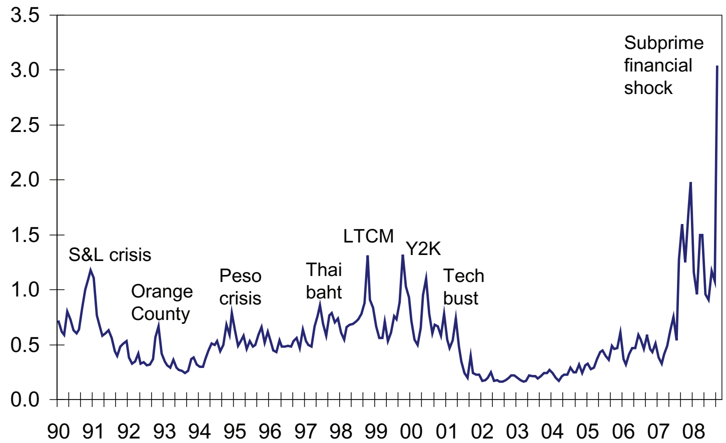
Financial System Losses on Securities Holdings
$ bil

	Outstanding	Expected losses	Loss rate	Expected losses: Banks	Insurance	Pension funds	GSEs and Government	Hedge funds & Mutual funds
ABS	1,095	221	20.2	93	33	40	30	25
ABS CDOs	400	258	64.5	148	41	21	16	32
Prime MBS	3,800	-	-	-	-	-	-	-
CMBS	950	200	21.1	87	29	33	23	28
Consumer ABS	625	2	0.3	2	-	-	-	-
High-grade corporate debt	3,010	-	-	-	-	-	-	-
High-yield corporate debt	605	31	5.1	15	3	8	-	5
CLOs	345	19	5.5	10	2	2	-	5
Total loans	10,830	731	6.7	355	108	104	69	95

Sources: Federal Reserve, IMF, BIS, Moody's Rating Agency, Moody's Economy.com

Chart 3: On the Precipice of Financial Collapse

Difference between 3-month Libor and Treasury bill yields



origination. Bids would be accepted from financial institutions wishing to sell such loans. Institutions with the lowest bids would transfer their loans to the government. Market prices would thus be established to which all other institutions would then have to mark their own similar assets. Such markdowns would cause weak institutions with inadequate capital to fail. Stronger institutions would know how much capital they needed to raise, and investors would be more forthcoming with capital given the increased certainty about which institutions were sound.

it is likely that financial institutions would sell their bad assets at a discount that could be determined through a reverse auction or other model-based approaches.[8] To participate in the program, institutions would have to have significant operations in the U.S., but could presumably be headquartered in Europe or elsewhere. What constitutes a financial institution is not defined and presumably could include everything from money-center banks to hedge funds to mortgage guarantors.

The program is as important for its symbolism as for its substance. Given the potential size of the program and its comprehensive approach—the case-by-case approach was arguably creating more uncertainty—it clearly signals the federal government's commitment to backstop the global financial system. By so doing, policymakers hope to quell the financial panic. Judging by the markets' positive reaction after the plan was disclosed, they appear to have succeeded, at least for the moment and if it becomes law quickly.

In theory, establishing a reverse auction to purchase troubled mortgage assets is straightforward. The government would announce its intention to buy, say, $5 billion in subprime mortgage loans originated in 2006 with at least a 97% loan-to-value ratio, and in which borrowers had no more than a 40% debt-to-income ratio at the time of

In practice, a reverse auction for mortgage assets may be tricky to pull off. Auctioning mortgage-backed securities could prove especially problematic, since each security is so idiosyncratic. Conducting a successful auction of, say, the "A" tranche of subprime MBS originated in 2006's fourth quarter could be complicated, since each MBS has its own structure. The mortgage loans that back each security—and thus their performance—could be too different to make it feasible to conduct an auction with sufficient bidders fitting the stipulated criteria. Another possibility would be for the trusts that are the legal entities that hold the individual mortgage loans that back the MBS to sell individual loans in an auction. But this may require substantial legal, tax and accounting rule changes, and would almost certainly require the approval of the mélange of investors that own the MBS.

2) **Money Market Guarantee Fund.** The Treasury has established a $50 billion fund to provide temporary guarantees to money market mutual funds. The guarantee fund would work much like the FDIC insurance fund for bank deposits. The clear purpose was to stem redemptions from money market funds, a tide that threatened to disrupt the commercial paper market. The announcement appears to have worked; redemptions have abated.

3) **Buy commercial paper.** In another effort to shore up the commercial paper market, the Federal Reserve said it will extend nonrecourse loans at the primary credit rate to U.S. depository institutions and bank holding companies to finance their purchases of high-quality asset-backed commercial paper from money market mutual funds.

4) **Buy MBS.** The Treasury said that it will expand its earlier announced plan to buy Fannie Mae- and Freddie Mac-issued MBS. Fannie and Freddie will also be empowered to increase their purchases of MBS. This should reduce mortgage rates.

5) **Restrictions on short-selling.** The SEC severely clamped down on short-selling by temporarily prohibiting short sales of the securities of certain financial firms. Institutional investment managers are also required to provide much more disclosure with respect to their short positions in an effort to curb aggressive short-selling of financial stocks by some big hedge funds.

6) **Liberalizing liquidity facilities.** The Federal Reserve broadened the types of collateral eligible for loans from the PDCF and TSLF, increased the size and frequency of TSLF auctions, and relaxed restrictions on bank lending to nonbank affiliates. Below investment-grade securities and even equities can now be offered as collateral. The purpose of these actions was to reduce liquidity pressures on broker-dealers, and it seems to have helped. Both the PDCF and TSLF have been in much greater demand in recent days. No changes were made to the discount window programs, but it is worth noting that borrowing from the window has increased.

7) **Supplementary Financing Program.** Through the SFP, the Treasury issues Treasury bills and deposits the proceeds at the Federal Reserve. The purpose of the SFP is to help the Fed sterilize the effect on bank reserves and thus on the federal funds rate of lending through all its liquidity facilities. The SFP also has the benefit of increasing the supply of bills, which have been in

[8] I proposed such an idea in testimony before the House Financial Services Committee on February 26, 2008 http://www.economy.com/mark-zandi/documents/Financial_Services_2_26_08.pdf

Chart 4: The Negative Economic Fallout Is Significant
Real GDP growth, annualized % change

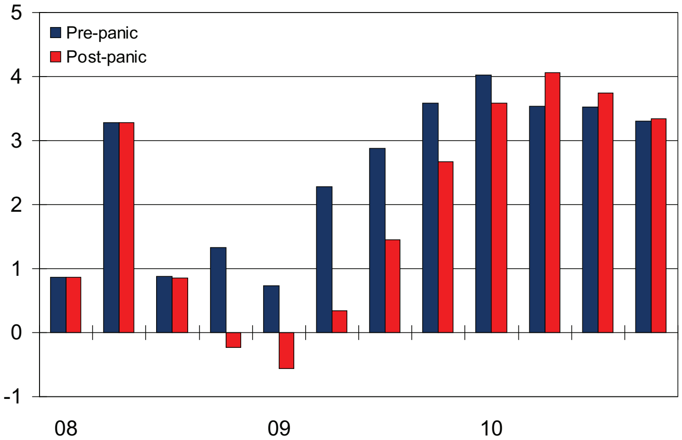
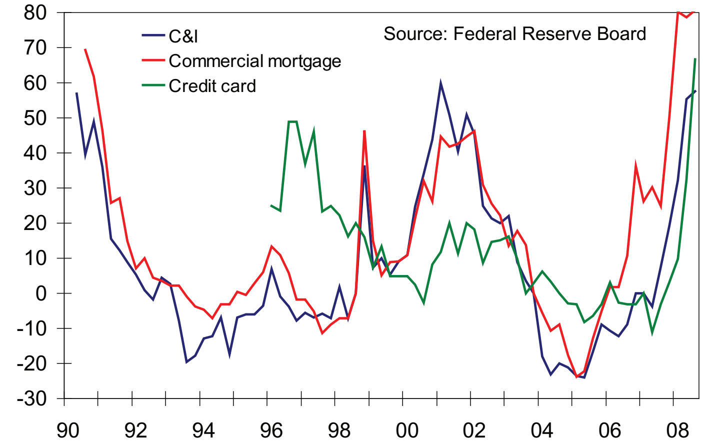


Chart 5: Battening Down the Credit Hatches
Net % tightening standards



hot demand given the massive flight to quality. Some $200 billion in Treasury bills have been or soon will be auctioned.

8) **Increase swap lines.** The Federal Reserve quadrupled the size of its swap lines with other central banks, including the European Central Bank, the Swiss National Bank, and the Banks of England, Japan and Canada. The $180 billion increase will make it easier for foreign financial institutions to obtain dollar reserves directly from their central banks without having to convert their reserves into dollars via the foreign exchange markets. That can be difficult when markets are in turmoil.

Economic fallout

Assuming that the Troubled Asset Relief Program is passed this week, the bold moves by the federal government should stem the financial panic and restore at least a fragile stability to the global financial system. Investors appear to understand the message, namely that the government will do whatever is needed to ensure that the system does not unravel.

Despite this, substantial damage has already been done to the fragile economy. The recession that likely began in late 2007 will continue through the first quarter of 2009. Before the financial panic, real GDP growth in the fourth quarter of 2008 was expected to be just over 1%, and growth for all of 2009 was projected to be 1.75% (see Chart 4). It is now very likely that this year's fourth quarter will witness a decline in GDP, as will the first quarter of next year. Growth for all of 2009 is now expected to be only 1.3%. Some 1.25 million payroll jobs will be lost peak to trough, with the bottom expected in the second quarter of 2009.[9] Unemployment will rise steadily throughout next year, topping out at 7% at year's end. It had previously been expected to peak at 6.5% in the third quarter of 2009 (see Table 2).

The housing and mortgage markets will also be hurt, given the worse than expected job market, but it could have been much worse. The effective nationalization of the mortgage industry means it is insulated from the current tumult, and combined with the Treasury's plan to expand purchases of Fannie and Freddie MBS, even more credit will soon flow to the mortgage market. House prices are now expected to fall another 10% through the third quarter of 2009, with a total peak-to-trough decline of 30%. Home sales and housing starts will be only a bit weaker than previously thought, with both bottoming out by the end of this year.

Table 2: Fallout on the Economic Outlook

	Pre-financial panic	**Post-financial panic**
2008Q4 Real GDP Growth	1.3%	-0.2%
2009 Real GDP Growth	1.8%	1.3%
Peak Unemployment Rate	6.5% (2009Q3)	7% (2010Q1)
Peak-to-Trough Decline in Payroll Employment	800,000 (2009Q1)	1,250,000 (2009Q3)
Peak-to-Trough % Decline in House Prices	26% (2009Q2)	30% (2009Q3)
Federal Funds Rate Trough	2.0%	1.5%
Cumulative Budget Deficit FY 2009 - FY 2013 *$ bil*	2,214	2,834

Source: Moody's Economy.com

[9] This job loss projection does not consider the impact of the benchmark employment revisions that will be released in January. Those revisions are likely to show that the economy has lost closer to 900,000 jobs since the beginning of the year rather than the 600,000 now estimated.

Chart 6: Credit Spreads Balloon
Difference with 10-yr Treasury rate, basis points

The financial panic will weaken the economy by undermining confidence, further restricting the availability of credit and reducing household wealth. Gauging the impact of recent events on the collective psyche is difficult, but the shock of coming to the financial edge will likely prove difficult for households and businesses to shrug off. The confidence of both was already plumbing record lows. Businesses in particular will turn more cautious. They understand just how tenuous the current environment is. Many are sure to curtail expansion plans, while more pressed businesses will accelerate layoffs and cut investment spending.

In many cases, businesses will have little choice but to cut back as financial institutions further restrict credit. Debt growth has already slowed sharply during the past year as institutions have struggled to reduce their leverage.[10] After inflation, it is now about as weak as it has been since the early 1990s. With capital in short supply, the only option they have is to rein in their lending. With many institutions simply struggling to survive, they are battening down their underwriting standards. According to the Federal Reserve's quarterly senior loan officer survey, the net percent of lenders that say they are tightening their underwriting has jumped to record highs (see Chart 5). The dramatic tightening has been across all assets, ranging from commercial and industrial loans to credit cards and vehicle loans.

The credit spigot is even more tightly shut in the credit markets. Not only has residential mortgage-backed securities issuance completely evaporated, so too has commercial mortgage-backed issuance. Junk corporate bond issuance has stalled, and asset-backed issuance for credit cards and vehicles is occurring only because the large money center banks making these loans are willing to hold the riskiest pieces of the securities. The cost of capital has also surged. The yield spread between junk bonds and 10-year Treasuries has ballooned to more than 1,000 basis points; this is as wide a spread as prevailed during the late-1990s LTCM collapse. Yield spreads on everything else have also soared (see Chart 6).

The wealth effects from the sliding prices of stocks, housing and other assets will also take more of a toll on consumer spending, and thus the broader economy. Total household net worth has fallen by some $5 trillion since peaking nearly a year ago. If the wealth effect is just a nickel—meaning that every $1 decline in net worth will ultimately reduce consumer spending by 5 cents—then this alone could shave at least a percentage point from GDP growth in 2009.[11] Wealth effects are highly variable and depend on the broader economic environment. In periods of violent downward moves in asset prices, such as the current one, the wealth effect is magnified; households do not know how much they are really worth. The recent financial turmoil will signal to households that they are not as wealthy as they thought, prompting them to save more and spend less, to the near-term economy's detriment.

It is also important to note that the downside risks to the near-term economic outlook have also risen. The threats to the outlook range from more financial failures and the increased risk of renewed financial turmoil, the heightened job losses reverberating back on consumer spending and the broader economy, and the very real possibility that house prices will fall more than expected. The projected 30% peak-to-trough decline in house prices will restore housing affordability as prices fall back in line with household incomes and rents, but there is no guarantee that homebuyers will return to the market once affordability is restored. Prices may have to fall even more to convince buyers that it is a good time to buy. The odds of a deep recession, characterized by an unemployment rate as high as 9% sometime in 2011, are thus now as high as 1 in 10. Such a scenario had only a 1 in 20 probability before recent events.

Fiscal impact

Fallout from the financial turmoil also includes the negative impact on the nation's fiscal situation. The weaker economy and the cost of the government's actions will add measurably to federal budget deficits. The government's red ink had been expected to average $450 billion a year over the next five years but now seems more likely to come in closer to $550 billion a year. The cumulative deficit over the period would thus increase by some $500 billion.

This is about half the upfront cost of the financial bailout, which could potentially reach more than $1 trillion. Adding up all of the Treasury's financial commitments made so far, there is $700 billion for the Troubled Asset Relief Program, $200 billion for recapitalizing Fannie Mae and Freddie Mac, $85 billion in loans to insurer AIG, and $29 billion for the Bear Stearns resolution.

It is unlikely, however, that all the money committed by the federal government will be used. Fannie and Freddie probably will not need all $200 billion to be recapitalized, and it is not hard to envisage money being left over in the Relief Program. More importantly, the government will sell the assets it acquires in these auctions in the future, when market conditions and prices will be measurably better. Thus, the ultimate cost to taxpayers will amount to less than the $250 billion cost to resolve the savings and loan crisis in the early 1990s. The weaker economy and resulting loss of tax

[10] Leverage is measured by the ratio of assets to capital.

[11] Wealth effects generally play out over about two years.

revenue and increased transfer payments to support those losing their jobs and other income support programs will cost the Treasury another $250 billion. Together, the total cost is estimated to be $500 billion in current dollars.

This is a very substantial sum, greater than the nation's annual defense budget. The opportunity costs are almost too difficult to consider, given the bridges that could have been mended and the children educated. But the costs of governmental inaction would be measurably greater. The financial meltdown and very severe recession that would result would hammer tax revenue and lift spending, resulting in much more than the estimated $500 billion price tag for dealing with this financial crisis.

What is next?

Because of policymakers' bold and creative actions, the financial system will make its way back from the brink and soon stabilize. More institutions will fail, but the worst is over. However, more economic fallout is still to come. The next six months will be painful, and the six months after that are also likely to be uncomfortable. Not until the end of the decade will the economy find its footing. It will take even longer for the financial system to resurrect itself.

Policymakers may also have more work to do early next year, soon after the next president and Congress are in office. The implementation later this year of the housing legislation passed this summer—along with more aggressive lending by Fannie, Freddie and the FHA—may stabilize the housing market, but it may not.[12] A more comprehensive mortgage write-down plan, tax incentives to stimulate homebuying, and even bankruptcy reform may be needed to put a solid floor under house prices.

There are many questions regarding the long-term implications of the events of the past year and the past few days. How will global investors view the U.S. financial system and economy? Will they demand a higher interest rate to be compensated for the greater perceived risk of investing here? How will the federal government extricate itself from being the nation's mortgage lender and one of its largest insurers? Will it do so at all? Should we continue to subsidize housing as we have since the Great Depression? Will our financial system ever regain its mantle as the globe's most innovative and productive? Will we have the political will when all the dust settles to remake our regulatory structure, as is desperately needed?

There are those who will surely argue that the events in the financial markets of the past year, and especially of the past few weeks, signal a turning point in this nation's storied economic history. Indeed, we do face significant challenges. But we always have, and those who have bet against the U.S. economy for very long have always lost that bet.

[12] The housing legislation includes a first-time homebuyer tax credit, funds for local government to purchase foreclosed property, and a mortgage write-down plan that allows the FHA to purchase and modify up to $300 billion in residential mortgage loans.