CHAPTER 7

Imagining Financial Armageddon, Making Emergency Loans in the Crisis, and Pursuing QE1

With the funds rate objective having reached 5-1/4 percent by mid-2006, for a time the economy actually did seem well balanced. The FOMC on August 8 held the rate steady. The statement foresaw that "inflation pressures seem likely to moderate" because of contained inflation expectations and previous tightening that, along with other factors, restrained aggregate demand. The next paragraph of the statement repeated only part of the previous statement, deleting the excessively obvious reference to the consistency of its future actions with its objectives:

> Nonetheless, the Committee judges that some inflation risks remain. The extent and timing of any additional firming that may be needed to address these risks will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.[1]

The Committee's implicit forecast of its own policy stance again was minimized. In general, the Fed apparently had demonstrated a new-found success in designing, implementing, and communicating monetary policy. Unfortunately, that Nirvana-like state of affairs wasn't destined to last. In an important degree, the Fed had brought its troubles on itself, as we now shall see.

Sowing the Seeds of Financial Disaster

The forces behind the crisis of course had come into being many years before it visibly began in earnest. In fact, to grasp an important, but by no means only, one we need to return to 2003, when the Committee at its mid-June meeting was beginning to think that it was risking becoming *too* successful by already having nudged inflation even lower than virtual price stability would require. The Fed had become worried "in the latter part of 2002 and much of 2003" when developments seemed to jeopardize attainment of the lower end of a 1 to 2 percent range.[2] The 12-month rate of core consumer inflation had been slipping off, approaching 1 percent, and threatening to go even lower. The Committee, as well as specific Federal Reserve officials, notably Governor Bernanke, expressed concerns about the risk of excessively low inflation or even the "remote" possibility of a decline in the average price level, that is, deflation.[3] The FOMC lowered the funds rate to what was then a record low 1 percent in June 2003.

If the funds rate were to have been reduced all the way to zero, the central bank obviously would give up the possibility of cutting the nominal overnight rate any more. Moreover, if deflation were to become ever more virulent, real long-term interest rates, where the "rubber" of monetary policy "hits the road," would move still higher and thus exert an even more restrictive influence on real spending. It's a controversial point, but I argue throughout this book that the Fed unfortunately then would lose much if not all of its ability to stimulate further.

Stanford's John Taylor complained that by mid-2003, the FOMC had taken the funds rate too low.[4] Actually, the reduced funds rate in late June was a tad higher than called for by an estimated forward-looking Taylor rule that previously in Greenspan's chairmanship had proven on average to have been effective. A briefing by Vince Reinhart at the June 2003 FOMC meeting demonstrated that fact with a simulation based on an estimated Fed reaction function using the forecasts of Committee participants that had been specified in my volume dated that month. That econometric model predicted a funds rate of 3/4 percent in the third quarter.[5]

But thereafter, out of continued fear of deflation, the Fed, like a naïve house guest, did overstay its welcome. Moving into 2004, the year after I retired, the economy had regained a solid footing, and core inflation had started to climb in halting baby steps. Although not so easy to discern at the time, in hindsight it has become clear that the Fed's relaxed accommodation should have been abandoned sooner. And when the Fed belatedly did get around to tightening in mid-2004, retrospective analysis suggests that it should have done so much more rapidly. Instead, the Committee began a glacial firming in only quarter-point increments at each regularly scheduled meeting.

To add insult to injury, after mid-2003 through much of 2005 the Fed not only kept the federal funds rate "too low, too long" but also *telegraphed in advance* its easy policy through the immediate statement. The Fed in August 2003 for the first time began to give vague forward guidance about policy, unknowingly contributing further to the eventual problem: "The Committee judges that, on balance, the risk of inflation becoming undesirably low is likely to be the predominant concern for the foreseeable future. In these circumstances, the Committee believes that policy accommodation can be maintained for a considerable period."[6] Although inflation was starting to return to a more acceptable pace, the Fed averred in January 2004 that it could be "patient in removing its policy accommodation."[7] In May 2004 the Committee began to underscore its intention to make a small tightening move at the next meeting—a strategy that lasted for a year-and-one-half: "[T]he Committee believes that policy accommodation can be removed at a pace that is likely to be measured."[8] When policy tightening started at last in late-June 2004, the Fed again indicated that it would continue to firm at only a "measured pace."[9]

Matthew Klein spotted a fascinating debate between Boston Fed President Cathy Minehan and Governor Donald Kohn at the March 16, 2004, FOMC meeting, shortly before the Fed's extended rounds of small upward funds-rate adjustments had begun.[10] Although Kohn very insightfully framed the issues, in the end Minehan's anxiety proved to be warranted:

> *Ms. Minehan*: I also remain concerned that the current very accommodative stance of monetary policy and the assurance that markets seem to have that we are on hold has increased leverage across all markets. When rates return to a more neutral place, as they ultimately will, this could create a burst of financial instability . . . [A]s I balance the risks of slower-than-expected growth against the risks of faster growth, rising costs, and financial instability, I am more concerned about the upside. My view is that maintaining a policy with interest rates too low for too long is in the end a bigger concern than the possibility of a widening output gap. To be sure, we have the tools to deal with either case. But I think the costs to us in terms of credibility would be greater if the situation got out of hand on the upside.[11]
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> *Mr. Kohn*: Recent data have underlined the virtues of patience in our current monetary policy strategy . . . Nonetheless, some observers have been arguing that our patience should be wearing thin sooner rather than later. One argument is that policy is very accommodative by historical standards and that many of the reasons for adopting such an accommodative policy no longer pertain. Demand has strengthened substantially, and the threat of pernicious deflation has receded. A second concern is that policy accommodation—and the expectation that it will persist—is distorting asset prices. Most of this distortion is deliberate and a desirable effect of the stance of policy. We have attempted to lower interest rates below long-term equilibrium rates and to boost asset prices in order to stimulate demand. But as members of the Committee have been pointing out, it's hard to escape the suspicion that at least around the margin some prices and price relationships have gone beyond an economically justified response to easy policy. House prices fall into this category, as do risk spreads in some markets and perhaps even the level of long-term rates themselves, which many in the market perceive as particularly depressed by the carry trade or foreign central bank purchases.
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> I believe that at least for a while the macro imperatives are likely to outweigh any threat to financial or longer-term economic stability from accommodative policy. Any unusual distortions in asset prices that might intensify a subsequent correction are probably small.
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> . . .
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> In our situation, a high burden of proof would seem to be on policies that would slow the expansion, leaving more slack and less inflation in the economy in the intermediate run to avoid hypothetical instabilities later. In short, Cathy, I understand your concerns, but until the labor market takes a more definitive and sustained turn for the better or until inflation looks as if its trend has changed, I'd be quite hesitant about allowing such concerns to have an effect on policy.[12]

At its June meeting the FOMC began a series of quarter-point hikes in the funds rate at every FOMC meeting through the rest of Greenspan's tenure. So by the time Greenspan's full 14-year term as a Board member ended in late January 2006, a year and a half into his fifth chairmanship, the funds rate had climbed the stairs from 1 percent all the way to 4.5 percent without inducing much movement in long rates. Given the apparently healthy state of economic activity at that time, the return of the funds rate to a neutral neighborhood seemed obviously justified, rendering the last two and a half years of Greenspan's term through January 2006 seemingly uneventful in real time. And the last chapter recounted the details of the three 25-basis-point firming actions though the middle of the first year of Ben Bernanke's tutelage, which caused the funds rate to top out at 5.25 percent. But beneath the surface eventual economic disaster was becoming inevitable as a housing bubble was filling with ever more air. At the same time the fundamentals of housing finance had begun to rot away, as now is obvious in retrospect but wasn't then.

The underlying situation had developed for a variety of reasons, which today can be identified: (1) the mandating of higher shares of mortgages to lower-income households at the government-sponsored housing agencies Fannie Mae and Freddie Mac by the Department of Housing and Urban Development (HUD) and at commercial banks and saving and loan associations by the Community Reinvestment Act, enacted initially to counter redlining but later becoming instead a component of a general governmental policy to promote enlarged homeownership;[13] (2) the spreading of an "originate-to-distribute" mode for extending mortgage loans by mortgage-finance companies in the "shadow banking system;" (3) the extreme relaxing of underwriting standards, especially for subprime mortgages—that is, made to people with a low credit score, many of which also had an adjustable-rate with a minimal initial "teaser" rate and an inadequate down payment—and for Alternative A (Alt-A) mortgages with no verification of income or wealth; (4) the relying on refinancing made possible by ever-increasing house prices that permitted adjustable-rate mortgage recipients to avoid paying a higher reset interest rate that would be unaffordable; (5) the transforming by Wall Street investment banks and other institutions of those default-prone mortgages into tiered, structured securities both for sale to unsuspecting, often foreign, investors but also in surprisingly large volume as investments owned by US commercial or investment banks; (6) the applying by the government-sanctioned rating agencies to the atrocious mortgage-backed securities wildly optimistic ratings that the unsophisticated investors trusted; (7) the surging after 2004 in the investment banks' borrowed funds, particularly of only overnight maturity, relative to capital or net worth—that is, leverage—so that they were sunk when the market froze up for the toxic housing-related securities on their books and their short-term lenders departed; and (8) the aforementioned building up of an unsustainable housing bubble that promoted a rise in house prices year after year.

Thus, many factors beyond the Fed's influence contributed to the underlying imbalances. But the Fed certainly can't be fully excused. The long-run consequences of the too-easy stance of monetary policy from 2003 through much of 2005 as well as the telegraphing of its future posture were most unfortunate because they contributed to overly low mortgage rates. The Fed's sustained accommodative stance and associated signals surely helped to stoke the flames inflating the housing bubble by keeping long rates from rising more from overly simulative levels even after the Fed started firming. The Fed's promise of only a predictable, gradual unwinding of the policy ease was especially significant because it eliminated the surprise element in each tightening move, which tended to remove most of the reaction in bond rates. That outcome minimized criticism of the process of tightening and presumably was part of the motivation for selecting that approach. But if bond rates instead had responded in normal fashion to partly unanticipated hikes in the funds rate, the bubble in housing would have ended much earlier than actually was the case. Although Greenspan referred to the failure of long rates to respond to the Fed's tightening actions as a "conundrum," it actually was nothing of the sort.[14]

Greenspan later asserted in this respect that a breakdown in the correlation between the funds rate and the mortgage rate helped to exonerate the Fed. "The 30-year mortgage rate had clearly delinked from the [F]ed funds rate in the early part of this decade. The correlation between the funds rate and the 30-year mortgage rate fell to an insignificant 0.17 during the years 2002 to 2005, the period when the bubble was most intense, and, as a consequence, the funds rate exhibited little, if any, influence on home prices."[15]

As an alibi to establish the FOMC's lack of culpability in the case of the housing bubble, this explanation has severe shortcomings. Any implication that such Fed actions didn't make long-term mortgage rates significantly lower than otherwise contradicts Michael Woodford's valid idea that the structure of interest rates on maturities ranging from short to long term responds to policies altering the expectations of market participants about the future course of the funds rate.[16] Financial expert Brian Sack's appraisal at the time incorporated this idea. He had been employed by the Board and by Macroeconomic Advisors before rejoining the System in April 2009 as manager of the open market account at the New York Fed. In his earlier incarnation in the private sector, he plausibly estimated that "[t]he 10-year Treasury yield was about a percentage point lower with the Fed's easy policy than if the federal-funds rate . . . had remained around 4.5% to 4.75% . . . He said that the Fed intended to boost housing at the time, because the rest of the economy was so weak."[17]

Furthermore, it was the Fed's own pre-commitments from August 2003 through November 2005—first to a constant funds rate until June 2004 and then to a quarter-point adjustment at each FOMC meeting through November 2005—that also helped to cause the breakdown Greenspan cited. According to the expectations hypothesis of the term-structure of interest rates, the Fed's announced policy of pre-committing only to a gradual elimination of its accommodative posture supplemented the effects of its current and previous easing actions themselves in reducing bond rates, and hence elevating the public's spending as well as production by suppliers. By eliminating the surprise element in each tightening decision, the Fed tended to remove most of the reaction in long rates, which otherwise would have engendered potential criticism.

Regarding appropriate versus inappropriate monetary policy settings, an analyst should distinguish among three distinct "ideal types," in Max Weber's evocative phrase. First, consider in normal circumstances an initially "too-easy" policy stance, perhaps reinforced by promises of sustained accommodation without any convincing rationale. Only later will come a belated turn to policy tightening that continues to be "too little, too late." That is, a sensible Taylor rule—backward looking, forward looking, or some combination but with a doubled responsiveness to the unemployment gap—remains violated on the side of inordinate stimulus for a sustained interval. Not only will the economy appreciably overshoot in the end, but also inevitably various ultimately destabilizing bubbles can't help but emerge. Second is the case of a steeper tightening trajectory over time that more or less replicates an adjusted Taylor rule. Presumably, without unusual surrounding developments, disastrous economic or severe bubble-related financial outturns would be minimized. Just enough tightening as called for by macroeconomic conditions relative to mandated objectives wouldn't tend to foster excessive bubbles. Third, consider a still steeper climb at some point, marked by heightening tautness relative to a Taylor rule's prescriptions, perhaps motivated by a well-intentioned desire to restrain inflating bubbles or other growing imbalances. But this potential problem will finally come to pass: economic activity will become overly retarded and disinflation excessive, perhaps even transforming into intensifying deflation. The intermediate case clearly is preferable, but before the meltdown the Fed instead adopted the first option.

Even beyond the prolonged too-easy monetary policy under the previous chairman, the Fed's supervision missed recognizing, much less countering through heightened regulation using the organization's extant authority, the disappearing mortgage lending standards in the shadow banking system. This episode exemplifies that in some circumstances imposing on nonbanks as well as on banks stricter supervision and regulation that is well designed would counter the smaller emerging bubbles that can result even if monetary policy were appropriately positioned. Instead, the transcripts of FOMC meetings reveal the participants to have remained much too complacent into 2007 about the worsening and ill-fated state of housing finance; accordingly the Fed committed the double sin of pursuing *both* a too easy monetary policy *and* a too lenient supervisory posture.

But the participants in FOMC gatherings were hardly alone. Few people on the outside, including me, foresaw hard times ahead. True, at an August 2005 Jackson Hole conference designed to honor Chairman Greenspan, finance professor Raghuram G. Rajan of the University of Chicago's Booth School of Business, like a skunk at a garden party, presented a prescient paper suggesting that financial innovations actually had added risk. Yale economics professor Robert J. Shiller warned of the looming popping of an emerging housing bubble, while Nouriel Roubini, a professor at New York University's Stern School of Business, not only foresaw that problem but also predicted the resulting world-wide recession. In the media, *The Economist* in early 2006 criticized Greenspan's role in contributing to the housing bubble.[18]

That bubble was destined eventually to pop—ultimately inducing a catastrophic plunge in home prices nationwide. In a macabre but prophetic development, the decline as measured by the composite-20 S&P/Case-Shiller index started, slowly at first, in only the fourth month of Bernanke's new chairmanship. The ultimate drop in house prices caused massive mortgage delinquencies and defaults, as more homes slipped "underwater" with a market value lower than the value of the mortgage. Many mortgage-backed securities became virtually worthless as their private market, somewhat ironically, "dried up" and as the Great Recession followed on the heels of the consequent financial crises, which further repressed housing demand.

Robert Samuelson contended that more substantive ironies emerged from Chairman Volcker's conquest of inflation:

> Disinflation had, it seemed, triggered a virtuous cycle of steady economic and wealth growth.

> It was not just the real economy of production and jobs that seemed to have become more stable. Financial markets—stocks, bonds, foreign exchange, and securities of all sorts—also seemed calmer.
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> . . .
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> Finally, government economic management seemed more skillful . . . Faith in the Fed grew; Greenspan was dubbed the "maestro."
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> Well, if the real economy and financial markets were more stable and the government more adept, then once risky private behaviors would be perceived as less hazardous.
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> . . .
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> So, paradoxically, the reduction of risk prompted Americans to take on more risk.[19]

Chairman Bernanke actually considered the implications of Samuelson's point, first made in January 2010 in the paperback version of his book on the rise and fall of US inflation.[20] Bernanke reacted later that year as follows:

> A different line of argument holds that, by contributing to the very long period of relatively placid economic and financial conditions sometimes known as the Great Moderation, monetary policy helped induce excessive complacency and insufficient attention to risk . . . [T]here may be some truth to this claim. However, it hardly follows that, in order to reduce risk-taking in the financial markets, the Federal Reserve should impose the costs of instability on the entire economy.[21]

Another paradox implicit in Samuelson's quote as well was having to put part of the blame for the collapse of housing at Chairman Greenspan's doorstep after his, on balance, highly successful earlier career as chairman. Still, Greenspan's defense against the accusation that the FOMC contributed to the housing bubble by keeping the funds rate "too low, too long" rings hollow to my ear, as noted before. His book also argued that the breakdown between the funds rate and long rates had arisen partly from an overhang of saving generated internationally, particularly in China, which artificially depressed the US long-term mortgage rate.[22] But to the extent that such an effect did contribute to a housing bubble, the rise in those asset prices could have been offset by sufficiently tight monetary conditions, though overdoing it by excessively retarding the economy in general would have been a danger.

At about the same time as the ex-chairman expressed those thoughts, Chairman Bernanke made much the same argument about capital inflows resulting from the "global savings glut" lowering long rates.[23] In early January 2010 he followed that speech up with another one entitled "Monetary Policy and the Housing Bubble."[24] It drew heavily on a staff paper, which largely exonerated the Fed.[25] He then addressed the issue in more detail in the second of his later four lectures to undergraduates at the George Washington business school in March 2012.[26] In addition to reiterating his argument about capital inflows, he presented several new exculpatory interpretations. The house price bubble in the United Kingdom was similar to ours despite a much firmer monetary policy, while an identical monetary policy determined by the European Central Bank (ECB) gave rise to a severe bubble in Spain but none in Germany. To my mind, that evidence just confirmed that factors in addition to monetary policy also affect housing developments.

Bernanke claimed that the declines in mortgage rates were too small to foster the bubble. But it wasn't the *changes* but rather the observable *levels relative to* the unobservable and changeable *non-bubble ones* that were relevant. He didn't distinguish between the repercussions of easing policy against the backdrop of an unchanged economic environment versus retaining an increasingly accommodative policy stance and then tightening too slowly even though underlying economic conditions were strengthening. Indeed, the issue wasn't that mortgage rates didn't decline, but rather that they didn't mount enough. The telegraphed policy stayed too easy too long, which according to Brian Sack's aforementioned estimate kept mortgage rates steady at about a percentage point below where they would have been otherwise.

Regarding anomalous timing, Bernanke observed that the house price bubble started in 1998, well before the Fed initially lowered the funds rate in response to economic weakness early in the new century and then took it down to 1 percent in mid-2003 out of deflationary concerns. "However, the pace of house price appreciation increased notably after 2002, and much of the overvaluation in house prices appears to have occurred after 2002 as well."[27] Bernanke also noted that house prices continued to increase sharply after monetary policy started to tighten in mid-2004. But, as noted, it was the Fed's signaling in advance of those halting firming moves that mainly kept mortgage rates from rising very much.

Narrating the Development of the Financial Crisis

Scattered signs of trouble started to emerge as 2007 progressed, especially in residential real estate and several related markets, including for subprime mortgages, private mortgage-backed securities, repurchase agreements, and commercial paper. Housing prices slipped further with the start of noticeable defaults on subprime and similar mortgages. At the March FOMC meeting, Janet Yellen, then president of the San Francisco Fed, presciently warned,

> So just as we have seen in mortgage markets, the bubble in private equity, as my sources characterize it, and the overabundance of liquidity more generally raise the risk of a sharp retrenchment in credit and higher risk spreads with associated risks to economic growth and, conceivably, even financial stability.[28]

Board Vice Chairman Donald Kohn expressed a more balanced view (pp. 59–61), as did Chairman Bernanke, who said,

> The central scenario that housing will stabilize sometime during the middle of the year remains intact, but there have been a few negative innovations . . . The effects of the decline in subprime lending may have already been mostly seen, since that has slowed from last fall . . . So long as the labor market remains strong, I would think that the general health of the housing market would be improving. (pp. 72–73.)

And he asserted later in the month that "the impact on the broader economy and financial markets of the problems in the subprime market seems likely to be contained."[29]

As the months passed, the prices of mortgage-related securities began to decline, and in June two Bear Stearns hedge funds that invested in various types of mortgage-backed securities (MBS) ran into trouble. That month's FOMC meeting saw intensified concerns about housing as a factor augmenting downside risks to growth. Janet Yellen called risk to housing "a 600-pound gorilla in the room." She noted "that rising defaults in subprime could spread to other sectors of the mortgage market and could trigger a vicious cycle in which a further deceleration in house prices increases foreclosures, in turn exacerbating downside price movements."[30]

As she feared, signs of financial problems continued to mount. Even so, the FOMC was slow on the uptake over the second half of the year. On August 7, it recognized that "the downside risks to growth have increased somewhat," but said once again that inflation risks were "predominant."[31] The FOMC scrambled later in August to undo that impression in response to even more serious financial disturbances, including concerns among lenders in the funds market about the credit quality of on and off balance-sheet portfolios of large- and foreign-chartered banks that briefly elevated the overnight and more lastingly the term funds rates. The Fed added open market operations, issued press releases, cut the discount rate 1/2 percentage point, and lengthened the term for discount lending. A funds-rate easing trajectory finally started in September with a 1/2 percentage-point action, but to appease Committee hawks the statement oddly deleted the risk of less growth while keeping one of more inflation. In October the FOMC saw balanced risks in making a small rate cut. But in December, it once more no longer explicitly cited a growth risk but only an inflation one, while again easing the funds rate by 25 basis points—to 4.25 percent—when financial markets expected more.[32]

The pace of easing fortunately steepened in the early months of 2008. Tim Geithner's generally thoughtful and insightful book on the financial meltdown explained why:

> Chairman Bernanke was usually a calm and conciliatory presence, but on a call in early January 2008, he sounded worried, too, and frustrated by the constraints on the FOMC. Ben told me he had no longer intended to be so deferential to the FOMC's hawks. If they wanted the Fed to stand around inert as the crisis intensified, they could dissent. He wouldn't meet them halfway anymore.
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> "If I'm going to be hung, I want to be hung for my own judgment," he said. "Not theirs."[33]

The subsequent statements accompanying reductions of 2-1/4 percentage points that brought the funds rate to 2 percent after the FOMC assembly in April again cited downside growth risks.

A purchase of the troubled Bear Stearns by JPMorgan Chase had been effectuated on Sunday, March 16, 2008, with the Fed assuming a substantial exposure on dodgy real estate assets. While the authorities saw the rescue as needed to avoid broader systemic problems, Paul Volcker remarked that the Fed had stretched "the time honored central bank mantra in time of crisis—'lend freely at high rates against good collateral'—to the point of no return."[34] An ex-Fed senior staffer, Vincent Reinhart judged that intervention to be "the worst policy mistake in a generation." His erstwhile colleagues at the Fed would have been justified had they perceived that comment, at a minimum, to have represented considerable hyperbole.[35] Still, Reinhart's comment embodied concerns about "moral hazard" (the tendency to assume risk if someone else pays the price if things go wrong), which could spill over to third-parties. Evidently more worried about political repercussions, later "Obama's campaign put out word that he didn't want a taxpayer-financed rescue of Lehman, which was also the emphatic consensus of both parties in Congress."[36]

On Sunday, September 7, Secretary Paulson placed the federally sponsored housing agencies Fannie Mae and Freddie Mac into conservatorship involving governmental control and capital injection under special congressional dispensation. Then, on Monday, September 15, he allowed Lehman Brothers, a larger investment bank than Bear Stearns, suddenly to file for bankruptcy. That event triggered a financial crackup. Various shocked intermediaries husbanded lendable funds by freezing credit extension. Private interest rates spiked, while their spread over Treasury yields widened further in a pronounced flight to quality. To be sure, Lehman's demise was only the proximate cause precipitating the financial turmoil. Underlying conditions already had deteriorated so much, especially in housing finance, that the particular spark igniting the financial conflagration in principle could have come from another source.

The Fed and the Treasury first argued that investors and counterparties of Lehman had time to take precautionary measures but later contended that neither organization could find the legal authority to salvage it. True, the firm at the end had experienced an old-fashioned run, this time by creditors, many overnight, who seemingly perceived that the firm's non-performing housing-related assets had rendered it insolvent.[37] But many critics viewed Lehman's bankruptcy as a fatal unintended consequence of the earlier handling of Bear Stearns. For example, distinguished economist Frances X. Diebold, formerly of the Board staff, and lawyer David A. Skeel wrote:

> The Lehman bankruptcy was so destructive because the Fed and Treasury had strongly suggested they would bail out any large troubled investment bank, as they did with Bear Stearns. Regulators' sudden shift in policy took Lehman and its potential buyers completely by surprise. If the government had instead made clear that it did not intend to rescue troubled investment banks . . . Lehman and its buyers would not have played chicken with the Fed and Treasury as they did, holding out for a government guarantee of the sales of Lehman's assets.[38]

Roger Lowenstein later put it more succinctly: "The Bear Stearns rescue had poisoned the waters; everyone expected the government to help with Lehman too."[39]

On the next day, the Treasury and the Fed implemented an $85 billion bailout for the insurance giant American International Group (AIG) using Fed resources, because they contended that certain institutions were "too interconnected to fail," at least quickly.[40] That company had invested collateral from its securities lending operation in increasingly illiquid residential mortgage-backed securities. But it couldn't afford to put up added collateral on its outstanding issuance through late 2005 of a pot-load of insurance-like derivative contracts (collateralized debt obligations). Those contracts depended on the trading success of structured securities based on numerous subprime and Alt-A mortgages, which proved to be poor-quality and started defaulting on a massive scale. (The bailout ultimately topped out at $182 billion.)

Shortly thereafter, the Fed provided support, and the Treasury a guarantee, for all money market mutual funds. When the value of the assets of Reserve Primary Fund, which owned Lehman commercial paper, fell below $1 for each of its shares, it "broke the buck" causing a generalized run. The next shoe to drop was not long in coming. Six days later, the Federal Deposit Insurance Corporation (FDIC) announced that it had facilitated the purchase of the country's largest Savings and Loan Association (S&L) by JPMorgan Chase. The S&L, named Washington Mutual or WaMu for short, had been closed by the Office of Thrift Supervision. Although insured depositors were made whole, the holders of $20 billion in bonds as well as the equity investors lost everything. Financial markets basically freaked out, as institutions became even more reluctant to lend.

In a dramatic appearance before Congressional leaders, Secretary Paulson and Chairman Bernanke emphasized the seriousness of the financial breakdown. After an initial negative vote in the House on September 29, which induced a big drop in stock prices, the Troubled Asset Relief Program (TARP) passed both houses of the Congress, becoming law on October 3. Ironically, the next week, October 6–10, the stock market suffered its worst single week ever, with the S&P 500 index falling 18 percent. The two officials had indicated that the government planned to acquire the banks' toxic assets at auction. But the Treasury instead decided to inject capital into the banks. To avoid invidious comparisons, it did so on October 13 for *all* of the nine largest financial firms. The FDIC also temporarily guaranteed new credit extensions, including renewal of expiring debt, of insured institutions and their holding company owners.

An alternative, more negative description of TARP is possible as well. Secretary Paulson got it passed under false pretenses, then called in the top nine commercial and investment banks to coerce them to take a government handout, even though only Citicorp and Bank of America at that time clearly were in need.[41] (The Treasury's capital injections for large banks in the next year were in the more justifiable and effective context of "stress tests.") The immediate reaction in financial markets was euphoric—the S&P stock index recorded a record surge on the day and risk spreads narrowed a lot—though some further unwinding later transpired. Representative Mel Watt (Democrat, North Carolina) subsequently asked Paulson just why forcing large banks to take money that they didn't want or need really should be expected to help.[42] Next, populist language inserted into the Obama stimulus bill of February 2009 by Senator Chris Dodd (Democrat, Connecticut) restricted the executive compensation at those top nine banks as well as AIG on the grounds that they all had accepted government money! Most of these large banks at that point understandably wanted out of TARP as soon as they could get the Treasury's permission.

The Treasury then threatened small banks with an expensive tax investigation if they didn't accept government money. When the compensation of top management at all banks getting bailout funds became subject to more significant review, smaller banks in droves started asking permission to drop out of TARP. In addition, TARP funds were extended to the auto makers General Motors and Chrysler. (Repayments of TARP loans from small banks and the auto companies have been incomplete.) In short order, the Fed accepted the request of General Motors Acceptance Corporation to be considered a bank, which permitted it to borrow at the discount window.

Handling the Financial Meltdown with Unusual Lending Policies and Quantitative Easing

Even with the passage of TARP and the adoption of other initiatives, the economic downturn, which had begun in December 2007, steepened appreciably, as private-sector spending plunged further. The FOMC around this time also can be criticized. In its case, despite softening economic activity, the Fed before, during, and for a short while after the outbreak of the crisis was too slow in relaxing further its primary tool—the intended funds rate. The 2 percent target for that rate stayed in place for five whole months after April 2008. Only on October 8 did the Committee, in an action coordinated with five key foreign central banks, cut the funds rate by another 1/2 percentage point. The Minutes of that impromptu meeting noted enlarged growth risks and lower inflation risks. The Fed's similarly sized easing at a regular meeting at month-end lowered the overnight rate to 1 percent, and the statement mentioned remaining downside risks. At last on December 16 the intended funds rate fell to its sustained reading of zero to 1/4 percent. The FOMC announced that "economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time," which became "an extended period" in March 2009.[43]

Instead of a prompt reduction in the funds rate, it was earlier, unorthodox Fed initiatives—together with TARP and Treasury and FDIC guarantees—that constituted the crucial elements in avoiding a financial apocalypse. The Fed in December 2007 had hit on an ingenious way to counter the longstanding problem that individual depository institutions approaching the discount window risked being stigmatized if their reliance on such funding became common knowledge and misconstrued as a sign of weakness. The Fed augmented its traditional lending by starting an extended series of auctions of fixed sums of 28-day discount credit (lengthened to a maximum maturity of 84 days in August 2008) to depositories both chartered in the United States and US branches and agencies of banks charted abroad.[44] (The program proved to be quite popular, especially with the latter institutions. The amount auctioned reached a peak in March 2009 of almost $495 billion, sending nonborrowed reserves well into negative territory.)

The Fed then initiated a variety of creative programs to extend its own credit directly to nondepository financial and nonfinancial institutions. This type of loan first was authorized when the Fed widened the eligibility for its discount facility beyond depository institutions to encompass overnight loans to *all* primary dealers on March 16, 2008. (The New York Fed selects primary dealers for a trading relationship to implement open market operations, so their counterparties include certain securities broker-dealers well as banking organizations.) That decision came just too late to help Bear Stearns, occurring on the day JPMorgan's acquired it. The Fed that day also further lowered the penalty spread of the discount rate over the funds rate to only 25 basis points and again lengthened the maximum maturity of primary discount credit, this time to 90 days. On September 14, the Fed broadened appreciably the collateral requirements for its discount loans to primary dealers to match private practice for similar extensions of credit to those firms through repurchase agreements. That action was barely too late to help Lehman Brothers, which filed for Chapter 11 bankruptcy protection a day later.

To restore liquid funding for money market mutual funds and commercial paper issuers, the Fed opened three programs for business later in September, October, and November. In the last month as well, the Fed announced a program to widen the access of households and businesses to credit by financing investor acquisition of certain highly rated securities backed by newly and recently originated consumer and business loans. That program, called the Term Asset-Backed Securities Loan Facility (TALF), was launched in March 2009.

For its innovative programs as well as Bear and AIG involvement, the Fed relied for the first time since 1936 on its authority under Section 13(3) of the Federal Reserve Act to lend "[i]n unusual and exigent circumstances" to "individuals, partnerships, or corporations . . . unable to secure adequate credit accommodations from other banking institutions." These new domestic policy initiatives substituted its own credit to nonbank borrowers for that being withdrawn in the crisis by private sources, thus stepping into the breach as a financial intermediary itself. Bernanke's attitude about the unusual lending programs can be gleaned from his own words: "Such programs are promising because they sidestep banks and primary dealers to provide liquidity directly to borrowers or investors in key credit markets."[45]

Starting in late 2007, the Fed also helped avert worldwide disaster through a massive infusion of dollars abroad via collateral currency arrangements, known as central bank liquidity swaps. The exchanges with foreign central banks of dollars for foreign currencies were augmented after the crisis hit. At their peak in late-December 2008, they amounted to nearly $585 billion, representing around a quarter of the Fed's assets. The foreign central banks at their discretion would then on-lend the dollar credit to the banks in their own regions.[46]

After consulting individually with FOMC participants, Bernanke unusually acted on his own in November 2008 to instruct the Trading Desk to begin buying massive amounts of agency debt and agency-guaranteed mortgage-backed securities. In March 2009 the Fed announced that over the next year it would greatly augment those purchases. In total through March 2010 the Fed bought, besides $300 billion of Treasury notes and bonds, $175 billion in the debt of Fannie Mae, Freddie Mac, and the Federal Home Loan Banks and $1.25 trillion of mortgage-backed securities guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae. The purchases calmed unsettled mortgage- and asset-backed securities markets, where non-agency issuance had all but disappeared, and for a time depressed mortgage interest rates.[47]

The Fed's balance sheet from early 2006 through mid-June 2010 is shown in Figure 7.1.[48] It shows the component assets in this descending order: support for specific institutions (Bear Stearns, AIG, and then Maiden Lane), other credit facilities, central bank liquidity swaps, agency debt and MBS holdings, discount loans (including term auction credit), repurchase agreements, Treasury securities held outright and all other assets. The component liabilities plotted in descending order are Federal Reserve notes in circulation, reverse repurchase agreements, capital, Treasury accounts, other deposits, and deposits of depositories. The Fed's massive lending followed by large purchases caused excess reserves to shoot up from a customary $2 billion to more than $1 trillion by the fall of 2009, where they remained through mid-2010.

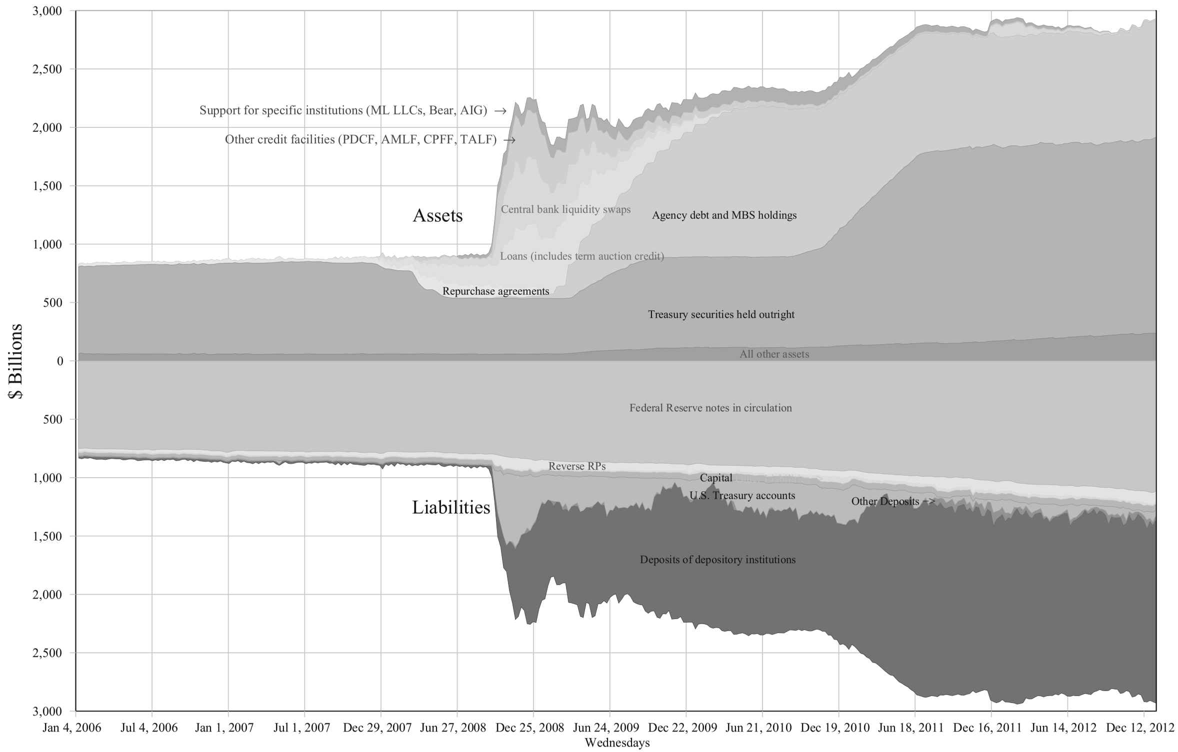

Figure 7.1 Federal Reserve's Assets and Liabilities, 2006–2012

Source: Seth B. Carpenter, Jane E. Ihrig, Elizabeth C. Klee, Daniel W. Quinn, and Alexander H. Boote, "The Federal Reserve's Balance Sheet and Earnings: A primer and projections," *Finance and Economics Discussion Series, 2013-01,* Figure 1, p. 34.

Monetarists and conservatives expressed worries about potential inflation arising from the vast surge in the monetary base. Yet those concerns were misguided. Three central bankers in the second spot in their own institutions have explained why:

Don Kohn (Board Vice Chairman)—"I know of no model that shows a transmission from bank reserves to inflation."
Vitor Constancio (ECB Vice President)—"The level of bank reserves hardly figures in banks lending decisions; the supply of credit outstanding is determined by banks' perceptions of risk/reward trade-offs and demand for credit."
Charles Bean (Deputy Governor Bank of England) in response to a question about the Milton Friedman quote "Inflation is always and everywhere a monetary phenomenon"—"Inflation is *not* always and everywhere a monetary *base* phenomenon."[49]

A sluggish business expansion began at mid-year 2009.[50] As financial conditions returned to normal with the turnaround of economic activity, lending at the discretion of borrowers in the special programs automatically fell to zero, because the Fed had priced them at a penalty in normal times. As these developments occurred, the Fed also discontinued auctions of discount credit and liquidity swaps. By late-March 2010, all the special lending programs had expired formally, either through the automatic running down or the discretionary decision of the central bank.

In the introduction Charles Goodhart observed that the monetary policy responsibilities of central banks were grafted onto their prudential duties. Three years after the worst of the crisis, Chairman Bernanke adopted a more recent vantage point in his related comment:

> [I]n the decades prior to the crisis, monetary policy had come to be viewed as the principal function of central banks; their role in preserving financial stability was not ignored, but it was downplayed to some extent. The financial crisis has changed all that. Policies to enhance financial stability and monetary policy are now seen as co-equal responsibilities of central banks.[51]

The Fed's responsibility for promoting financial stability may have been enhanced by the crisis, but notice an implication of the Fed's response of massively augmenting its balance sheet and as a result also the availability of bank reserves. Its "large-scale asset purchases," the Fed's preferred term, or "quantitative easing," in market parlance, paradoxically also sounded the death knell for a related long-standing prudential central-bank function. It took Robert Barone much later to point out what should have been obvious to me long before then but I must admit instead escaped my notice: "[T]he Fed as the 'lender of last resort' simply doesn't make sense in a world awash in liquidity."[52]

The Fed's role during the financial crisis and its immediate aftermath boils down to the following three issues:

1. Could the Fed have avoided guaranteeing a hefty share of Bear Stearns' real-estate securities, which set a precedent that led to the later Lehman Brothers bankruptcy? On Sunday morning, March 16, 2008, Jamie Dimon, CEO of JPMorgan Chase, expressed to New York Fed President Tim Geithner

his disinterest in buying Bear Stearns at a share price between $8 and $12. Geithner replied that together with an original (and the ultimate) share price of $10, the Fed would guarantee $30 billion in Bear's squirrely real-estate assets, a possibility that had rendered Chairman Bernanke "incredulous" when he first learned about it.[53] What if Geithner instead had suggested that Dimon simply pay a price of $2 per share (which later in the day he actually got to pay at Secretary Paulson's insistence) without mentioning any guarantee? If Dimon had accepted that alternative, would a private party subsequently have been willing to buy Lehman Brothers outright without negotiating for public aid, which in the end was not to be, thereby avoiding its bankruptcy? If so, would the crisis then have evolved differently?[54]

2. Even if that proximate detonator of the crisis had been defused, though, some other one inevitably would have exploded sooner or later because the fundamental factors behind the meltdown still would have remained in place. The main cause revolved around increasingly strict federal mandates for low-income housing that encouraged subprime or similar mortgages eventually to make up more than half of the total. Fannie Mae and Freddie Mac ended up guaranteeing or owning an appreciable share of structured securities backed by ill-fated subprime or comparable mortgages. Financial institutions packaged many similar securities and sold most of them to unsuspecting investors, but also retained a lot of highly rated ones, casting doubt on their prescience as well as their alleged venality. The assured demand severely distorted incentives and standards in granting mortgage loans, especially in the unsupervised shadow banking system. A false sense of security permeated housing markets. After the bubble burst, the private secondary market for mortgage-backed securities disappeared, so that Federal agencies came to guarantee around 90 percent of all mortgages in this country. Fed purchases of those federally guaranteed securities helped to prolong the basic housing problem, which festers to this day.
3. The demise of Lehman Brothers became the proximate cause of an unprecedented financial disaster because it induced a freezing up of credit markets, caused a shutting down of new loan extensions, and risked a systemic breaking up of financial arrangements absent a variety of emergency programs. True, the indebtedness of financial firms to Lehman can be overstated. But they had very real exposures to AIG, which couldn't keep its promise to make good on numerous credit default swaps. Furthermore, on top of capital injections under TARP and temporary Treasury and FDIC guarantees, the Fed's emergency discount loans peaked at $1.2 trillion in October 2008. To be sure, much of Treasury's transfers to banks under TARP was unwanted—initially for most of the nine largest ones and subsequently for the others after the Congress intruded significantly on the compensation decisions of the recipients. And much of those Fed loans was an opportunistic bank response to the Fed's temporarily below-market lending rates at the height of the crisis. But not all of both kinds of emergency funding was like this, and without those extraordinary Treasury, FDIC, and Fed initiatives, a cascade of bankruptcies could well have occurred. So the government officials weren't imagining financial Armageddon in the sense of "just imagining things." Instead, they were contemplating a realistic counterfactual outcome absent those innovative governmental programs, which suggests that the new initiatives *during* the crisis paid off in spades. But

the *subsequent* attempted permanent fix to systemic problems embodied in the Dodd-Frank Act and QEs were a different kettle of fish.

Forecasting a Third Year, Updating Quarterly, and Providing Longer-Term Objectives

Bernanke's initial plan for innovations in communication partly stemmed from his earlier support for inflation-targeting. At his confirmation and first monetary policy hearings, he still argued that the central bank should announce a narrow range for the official inflation target. After considerable discussion, however, the FOMC initially opted for a different approach. In October 2007 it decided to begin updating each quarter its macroeconomic projections for several crucial variables; it also decided to lengthen its forecasts to cover three out years through 2010 rather than the previous two. It continued to give both full ranges and central tendencies that dropped the top three and bottom three estimates. Not until January 2009 did it belatedly conclude that a preferable way to indicate its assessment of the economy's capacity and its own inflation objective was simply to present meeting participants' opinions about longer-term values for real GDP growth, the unemployment rate, and the inflation rate for consumer prices.

Except as a subterfuge for divulging those longer-term specifications, the rationale for asking the participants to extend their forecasts so far ahead is impossible to divine. The theoretical models as well as empirical estimates of the five eras from early 1969 through early 2003 discussed in my internal 2003 book indicate that even when Fed policy was preemptive, the setting of the funds rate was not based on forecasts more distant than three quarters out.[55] That is, for February of each year, the policy stance was related to the projections extending only through the end of that year. In July the forecasts underlying policy decisions in effect only went through the middle of the next year. So it's not obvious that the policy behavior of modern FOMCs was really any different until August 2011, when the Committee began forward guidance predicting a low funds rate for an explicit date two years ahead. But in October 2007 Chairman Bernanke still requested that the distant macroeconomic projections both be formulated and revealed.

He later conceded the inherent flaws of distant projections. "Our ability to forecast three and four years out is obviously very limited. It's certainly possible that we will be either too optimistic or too pessimistic."[56] The results have borne out the comment, starting with the range of the original projections of all the participants in October 2007 for 2009 and 2010. FOMC forecasters saw little change in the prevailing 4-3/4 percent unemployment rate for 2009 and 2010, with ranges of 4.6–5.0 percent. The ranges for forecasts of real growth were consistent with the normal operation of Okun's Law, which was explained in Chapter 5. The virtually unchanged unemployment rate implied the prospect of real growth around its potential in those years. FOMC participants projected real GDP expansion over 2009 and 2010 that ranged from 2 to 2-3/4 percent.

Those FOMC forecasts can be compared with my own vision for the economy during 2009. True, I made my forecast around Christmas 2008 for the benefit of my brother-in-law, Nam Shik Yoo, who owns and operates an equity oriented hedge fund in Seoul, Korea.[57] Because the FOMC constructed its projections a little more than a year earlier than mine, I had the distinct advantage of knowing about the full extent of the financial disaster. In fact, my projection for a 3-percentage-point rise in the US unemployment rate during 2009 was right on the money, as that rate in the fourth quarter averaged 9.9 percent. By contrast, the FOMC's October 2007 two-year-ahead range for the unemployment rate was a vast underestimate.

Still, like the FOMC participants more than a year before, I totally missed the looming massive surge in labor productivity in 2009 of 5-1/2 percent associated with lower demands for labor relative to output. It implied a complete breakdown of Okun's Law. Unaware of that looming collapse, I thought the huge rise in unemployment would accompany a 3-1/2 percent drop in real GDP over the four quarters of 2009, whereas it actually recorded a much smaller decline. Though that outcome was well below the FOMC's range, the Committee was more nearly correct in projecting economic activity for that year than I was. The upside surprise to the FOMC in unemployment during 2009 turned out to be consonant with PCE inflation coming in at the lower edge of its range of predictions of 1.5–2.2 percent.

Then, in 2010 real GNP growth of more than 3 percent outpaced the upper end of the October 2007 range provided by the FOMC participants, but the unemployment rate of 9.6 percent also exceeded its upper bound. As one summary for 2010 had it, "The forecasters further predicted that both Personal Consumption Expenditures inflation . . . and core PCE inflation would be in a range from 1.5% and 2%. The former came in at 1.3% and the latter at 1%, again outside the Fed's range. The Fed's scorecard on its 2007 three-year forecasts: 0 for 4." Actual data for 2011 led that reviewer to this uncharitable conclusion: "Since the start of the crisis in 2007, its three-year forecasts have been worthless."[58] Actual data for 2012 in the monetary policy report in mid-July 2013 implied that the lower bound of the ranges for output growth in each of the five times new projections were made in 2009 and 2010 were at least 3/4 percentage points too high. The unemployment rate in the fourth quarter of 2012 ended up above the upper bound of the first three ranges announced in 2009 and early 2010 for that year.[59] As of September 2013, the 2.3 percent upper bound of the central tendency forecast of real growth that year was 3/4 percentage point below the 3 percent lower bound of the range of the three-year-ahead Committee growth forecast as of November 2010. Nine of the first ten central-tendency projections of real growth during 2013 were revised down, with only the second one revised up.

Even worse, despite all the Fed's effort, nobody seemed to care much about the more distant and thus more unreliable economic forecasts for the third year at the time of their first release in October 2007. Later, the Committee's hidden rationale for doing so disappeared in January 2009 when the FOMC finally became reconciled to giving central tendencies for specifications of the "longer run" that obviously amounted to explicit quantitative goals.[60]

Now it's on to part of Bernanke's second term, which started in early February 2010. We'll encounter lots of Fed activity, as it adopted another round of quantitative easing, began to hold press briefings, offered explicit forward guidance about the start of policy tightening, restored operation twist, postponed the explicit date of policy firming, and presented specific individual projections of the funds rate. The press briefings and funds-rate projections, in contrast to the other initiatives, seem destined to persist as long-lasting procedural reforms. The chapter progresses through early August 2012, when speculation among financial market participants about a third round of quantitative easing was mounting.