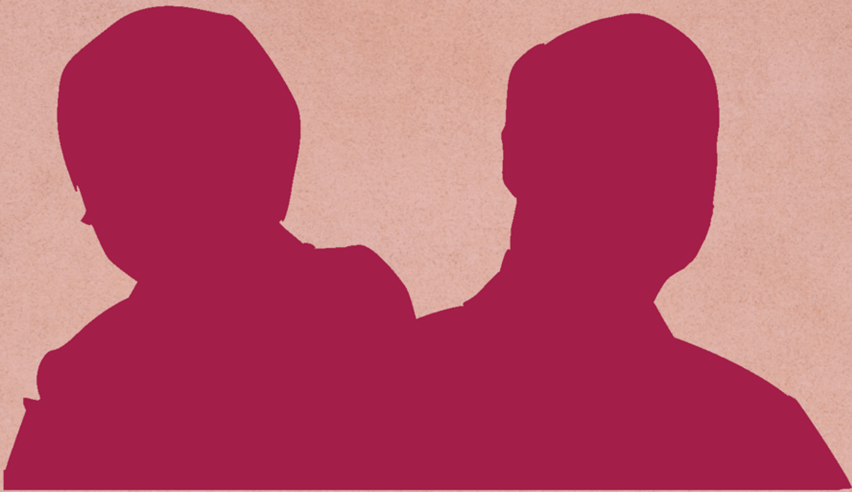

A CENTURY OF MONETARY POLICY AT THE FED

Ben Bernanke, Janet Yellen, and the Financial Crisis of 2008

DAVID E. LINDSEY

Advance Praise for *A Century of Monetary Policy at the Fed*

"Lindsey is an experienced and thoughtful monetary economist who has spent much of his career participating, at a high level, in the preparation and analysis of monetary policy and its administration at the Federal Reserve. This experience, together with his natural thoughtfulness and extensive reading in monetary history, has produced a book that is off the beaten track and relevant to fuller understanding of current issues."

—Stephen H. Axilrod, former Staff Director for Monetary and Financial Policy and former Federal Open Market Committee Secretary, Board of Governors, Federal Reserve System, USA

"Lindsey had a ringside seat as a senior official in the Federal Reserve Board, and has since remained a keen observer of monetary policy-making. From this vantage point, he has developed numerous acute and trenchant commentaries on this process, e.g., the effectiveness of later rounds of quantitative easing and the role of academic monetary theorists. Far from a whitewash of Fed activities in recent years, the book is often quite combative. Overall it is perceptive, well written, and entertaining. Well worth reading."

—Charles A. E. Goodhart, Professor, Financial Markets Group, London School of Economics, UK; former Member, Monetary Policy Committee, Bank of England

"Lindsey was intimately involved in shaping Federal Reserve policy for three decades. In this book he brings that perspective to an evaluation of the controversial policies that have ensued since the Great Recession. His penetrating critique is likely to be especially influential given his status as a Fed insider."

—Anil K. Kashyap, Edward Eagle Brown Professor of Economics and Finance, University of Chicago Booth School of Business, USA

"Lindsey's insightful insider's account of the Federal Reserve is a must-read for any practitioner who wants to know how policy decisions are really shaped at the 'Marble Tower' on Constitution Avenue, and for any academic who wants to understand what's missing from textbook treatments. By revisiting key moments in the history of the Federal Reserve, reflecting both success and failure, Lindsey highlights the interaction of the uncertain economic landscape, political dynamics, communication challenges, and financial markets in the policy process."

—Athanasios Orphanides, Professor of the Practice of Global Economics and Management, Massachusetts Institute of Technology, USA; former Governor, Central Bank of Cyprus; former Member, Governing Council of the European Central Bank; former Senior Advisor, Board of Governors, Federal Reserve System, USA

"Lindsey spent the last half of his three-decade career at the Federal Reserve Board as Deputy Director of the Division of Monetary Affairs. In that capacity, he was intimately involved in deliberations on monetary affairs and policy with members of the Federal Reserve Board and the Federal Open Market Committee. Now out of the trenches and in retirement, Lindsey has written a significant and valuable addition to the literature on the Federal Reserve."

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"Few are as well-equipped as Lindsey to probe the inner sanctum of the Federal Reserve. This is not the standard party-line pablum produced by most Fed insiders. It offers a fair, balanced, and at times a tough and honest critique of the policies, personalities, and challenges shaping America's most important financial institution."

—Stephen S. Roach, Senior Fellow, Jackson Institute, Yale University, USA; former Chairman, Morgan Stanley Asia

"A very intriguing and thought-provoking book about the Fed's centennial history and today's monetary policy. Lindsey not only strongly expresses his concern that 'quantitative easing' endangers the Fed's political independence of many years' standing but also contends that a practical intellectual orientation is the crucial attribute which central bankers should possess."

—Kenzo Yamamoto, Chairman, NTT Data Institute of Management Consulting, Inc., Japan; former Executive Director, Bank of Japan

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To my Grandchildren: Isaiah David Abraham and
Leylani Cho Abraham

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Perhaps it is an unfortunate implication of my failure to appreciate coherent potential intellectual influences, but I've never run across anyone who agreed with me about every aspect of monetary economics and central banking. Thus, despite my profound thanks to everyone mentioned above, I must insist that no one else bears any responsibility for the views expressed in this book. I alone am to blame, especially for any outright errors that remain.

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CHAPTER 1

Introducing the Book

President Johnson Uttering "Those Marble Tower Boys!"

In December 1965, the US central bank, the Federal Reserve or "Fed," unexpectedly raised the interest rate it charged on loans to banks by a half percentage point. President Lyndon Johnson was not pleased. "Those Marble Tower Boys!" was his derisive comment.[1]

Just who were the Marble Tower Boys that Johnson had in mind? The decision to hike the so-called discount rate had been taken by the Fed's executive body, the Board of Governors of the Federal Reserve System. It's headquartered in Washington, DC, with members nominated by the President and confirmed by the Senate for 14-year terms. Its leader, then William McChesney Martin, occupies a four-year term as chairman. But the Board chairman also presides over the Fed's monetary policymaking body—the Federal Open Market Committee (FOMC). For more than seventy-five years, it has had the responsibility for setting the shortest-maturity interest rate. (During the second half of the Fed's history, the shortest-term rate has been the one on overnight loans between banks of balances on deposit at the Fed, which is called the "federal funds rate." Such interbank lending has prevailed ever since the funds market matured around the time of the incident with President Johnson. Those bank balances are held "in reserve" at the Fed, which accounts for the word "Reserve" in its official name.) Voting members of the FOMC consist of the seven members of the Board of Governors plus five of the presidents of the 12 regional Federal Reserve banks. Four of them serve on a rotating basis, but the president of the Federal Reserve Bank of New York is a permanent member, acting as the Federal Open Market Committee's vice chairman. We'll hear a lot about the FOMC as well as the Board in this book.

Johnson deftly skewered the Board with his spontaneous phrase. It alluded to the imposing structure where the Board is housed and the FOMC meets: the white marble Eccles Building on Constitution Avenue, named for a former chairman, Marriner S. Eccles. By conjuring up "ivory tower," it expressed the President's contempt for what he saw as a bunch of academic types as blissfully unaware of political realities as any committee of professors. Three of them indeed were professional economists, appointees of Presidents Kennedy and Johnson. And over Chairman Martin's objections—not because of political naïveté, which was President Johnson's concern, but owing to the lack of a practical mindset—Johnson was to appoint a fourth economist to the Board. Also, to a modern ear, partly because of the building's location in Foggy Bottom, the phrase is reminiscent of the "Soggy Bottom Boys," the disdainful, tongue-in-cheek name of the bluegrass singing group in the movie released in 2000, *O Brother, Where Art Thou?*

Finally, the word "Boys" is nothing if not politically incorrect, suggesting a decided lack of diversity. In fact, many Board members since that time have been blacks and women, starting with the aforementioned economist who was appointed by Present Johnson, Andrew F. Brimmer. Just in the years since 1995, that eminent roster of governors has consisted of Susan M. Phillips, Janet L. Yellen (once governor, then vice chair, and now chair), Alice M. Rivlin, (vice chair), Roger W. Ferguson (vice chairman), Susan S. Bies, Elizabeth A. Duke, Sara B. Raskin, and Lael Brainard. In the three research divisions at the Board, the new hires with a PhD or equivalent for several decades have been split nearly evenly between men and women, who've been directors of several divisions, while the retired Board secretary, Jennifer Johnson, is black.

Still, this is a book about economic history, and it is a cliché among historians that applying contemporary standards to behavior in the past is impermissible. Even so, when the available members of the FOMC assembled in 1993 to testify before the House banking committee, my wife, Son, an ethnic Korean, commented at the time on their picture in the *Washington Post* by remarking, "They look like a bunch of white guys with glasses. Just like you." Even worse in terms of the disparity of their makeup, former Vice Chairman David W. Mullins Jr. noted at the time that "three of the sixteen are named Robert!" But in somewhat longer than a decade the succession of one male chairman after another was destined to terminate.

Rounding Out a Century of Federal Reserve History with a Significant Transition

When Bernanke's second four-year term as chairman expired January 31, 2014, President Obama made history by choosing Janet Yellen as his successor. She took over the helm just three days later. Until then she had served as the Board's vice chair after October 2010, while just before that she had been the president of the San Francisco Fed.

The transition took place only a little more than a month after the Federal Reserve celebrated the centenary of its founding on December 23, 1913, during President Woodrow Wilson's time in office. About one-fourth of this book summarizes the Fed's maturation during its earlier years, while the rest covers monetary policy as well as related developments during Bernanke's eight-year tenure as chairman.

Presenting the Book's Three Main Theses

Walter Bagehot penned in his influential *Lombard Street* in 1873.[2] He recommended that in a bank panic, the central bank should lend freely to solvent institutions at a high rate on the basis of collateral that would be good in normal circumstances.[3] Some 63 years later Vera C. Smith wrote in her impressive 1936 book defending "free banking," *The Rationale of Central Banking*, "A central bank is not a natural product of banking development. It is imposed from outside or comes into being as a result of Government favours."[4] But while central banks may have arrived unnaturally from the outside, their advent nonetheless obeyed the internal logic deciphered by Bagehot that in democracies inevitably has played out over time.

After a half-century delay, in 1985 Charles Goodhart titled the first edition of his insightful book defending central banking *The Evolution of Central Banks: A Natural Development?*[5] But insofar as he was drawing an analogy to the driving principle of biological evolution, his title is a misnomer. The process of biological evolution combines the forces identified by Gregor Mendel and Charles Darwin of random genetic mutations interacting with the winnowing of natural and sexual selection. By contrast, an underlying premise of the present volume is that the history of central banks in general and of the Federal Reserve in particular is distinctly different, because these related histories embody specific "laws of motion," to use Karl Marx's (in his case inaccurate) term. Analogously, in Noam Chomsky's theory of language development, despite superficial differences in specific words arising by chance, a deep grammatical structure always emerges, given the wiring of the human brain.[6] The fundamental direction traced out by the establishment and development of central banks in the chief commercial countries at the time Bagehot wrote, and later in the United States, certainly has not been just a succession of random events.

To be sure, the particulars of policy design, implementation, and communication have continued to adapt as the economic and political environment has altered over historical time, while feedback from Fed decisions to the surrounding environment also has occurred. In this regard, the concluding paragraph from a history of FOMC communication that I left behind for that Committee in June 2003 shortly before I retired may bear repeating:

> The fundamental approach to monetary policy of targeting the federal funds rate seems well ensconced, which would preclude the type of alteration to operating procedures that would give rise to changes in transparency practices. This viewpoint, however, may be too oriented to the present time and circumstances. The history of the Federal Reserve is replete with changes to policy design and operating procedures from one decade to the next. One can envision the Committee moving toward new approaches to its policy, which may well involve revisions to its communication procedures. For example, adopting some variant of an "inflation targeting" regime would surely alter the nature of the FOMC's communication with the public and the Congress. Even a gradual evolution of design and operating procedures could at some point significantly affect the FOMC's transparency practices, although in ways that are now unknowable.[7]

And to be sure as well, the alterations in the environment have been predominantly random, though they have left the impression of paradoxical twists and turns. Although pure chance has played an important role, this book still posits that democracies necessarily have established in actuality—though it may well take an extended amount of time—the basic principles laid out by Bagehot, Smith, and Goodhart.

Bagehot, without using the term "lender of last resort," discussed at length the relevance of the concept. Smith showed how the duties of a central bank arose from its monopoly in note issue. Goodhart asserted that competitive pressures on commercial banks in a milieu of limited information inexorably led to pro-cyclical fluctuations and bank runs. However, during a financial panic, just at the time when more liquidity was needed, private banks instead withdrew from interbank lending. This inherent problem required the creation of a non-profit-maximizing central bank to serve as a lender-of-last-resort. But the knowledge that the central bank would intervene to forestall bank runs created excessive risk taking, which in turn implied the need for supervision and regulation of private banking activities.[8]

Goodhart further argued that the central bank's monetary responsibilities were grafted onto these prudential duties. Of course, so long as the central bank maintained convertibility of the currency into gold at a fixed price in terms of the domestic unit of account, the operation of the gold standard confined the central bank's activities in all but the short run. But because that standard often imparted more overall restrictiveness than was politically acceptable, by the time Goodhart wrote all nations had adopted full-fledged fiat money, with more complete central-bank discretion over monetary policy.

The historical process of course has moved on in the more than quarter century since Goodhart considered the principles that had been at work.[9] The present study incorporates this later experience and the associated literature to analyze the flowering of central bank independence, accountability, and transparency, which by now have been institutionalized around the world. The first thesis of this book is that a democratic political system ultimately will establish a central bank unfettered by political pressure. It will be able to choose independently instrument settings allowing it to pursue a statutory goal of price stability, and perhaps explicitly low unemployment as well. At that point a transition to transparent communications becomes necessary in order to ensure adequate central-bank accountability. One aspect of the experience of recent decades of the Fed's history represents this thesis being realized in practice.

A democratic political system, while not ideal, still is better than all the alternatives, but having elected representatives design monetary policy is universally viewed as undesirable. Support for replacing central banks with a system of competition among private currency issuers can be found in work of Vera Smith, her mentor F. A. Hayek, and Laurence H. White.[10] Other libertarian opponents of an independent central bank certainly have not advocated leaving monetary decisions to politicians: Ludwig von Mises and Murray Rothbard, as well as their modern-day intellectual descendant, Ron Paul, argued for replacing the Fed with the automatic self-regulating workings of the long-defunct gold standard.[11] Monetarists like Milton Friedman advocated that a non-independent central bank implement a nonresponsive rule with fixed k-percent money growth.[12] Allan Meltzer and Bennett McCallum later proposed a responsive rule for the growth of some monetary measure, but one still engraved in stone.[13] But today most conservative economists have joined liberal economists too numerous to cite who have defended over time the independence of central banks.

One well-known problem with freely elected politicians setting monetary conditions is that their incentives encourage an excessively short timeframe. After all, in the United States elections for the House of Representatives reoccur every second year and for the president every fourth year. By contrast, the full effects of monetary policy actions, especially on inflation, take much longer to occur. To lengthen the time horizons of members of the Board of Governors, the Federal Reserve Act in 1935 established

14-year terms. The discussion surrounding the original passage of the act emphasized the formation of an institution embodying a scientific spirit and independence from political pressure, like the Supreme Court. The role of the private Reserve banks was seen as diluting the political power of the Board in Washington. The natural proclivity of compassionate politicians is to resist fighting inflation on the backs of the unemployed. But this attitude also ended up making politicians overly tolerant of rapidly rising prices. Repeated inflationary disasters in the United States proved necessary to convince finally its political leaders that the electorate actually is none too sanguine about virulent inflation. Politicians themselves decided that monetary policy decisions should be taken out of their own hands once and for all and instead handed over to independent experts.

True, the statutes can reserve the right to establish the long-run objectives for monetary policy—either by granting pride of place to low inflation or, as in the United States, by establishing a "dual mandate" that elevates sustainable employment to an equal station. But allowing a central bank the independent scope to set the instruments of monetary policy according to its best judgment, by protecting it from day-to-day political pressures, turns out to be by far the most efficacious arrangement. A central bank's "instrument independence" actually is essential to producing prosperity, because the prerequisite of price stability can be ensured only by a central bank that is autonomous in this regard. Granting a central bank some freedom of action is an arrangement that will be realized over the long run in the history of a democracy.

During the initial, albeit in the United States prolonged, period before the unenlightened polity has afforded a central bank its full instrument independence, it may be subject to the direct dictates of the Treasury because it is wholly under its thumb. Wartime often induces a state of serfdom, if not outright servitude. Or the central bank may have attained some nominal independence before the political class has really foresworn its inflationary ways. In that case, the initiation of serious anti-inflationary monetary policy can engender so much political opposition that the effort has to be abandoned before it really has begun to bite. Such circumstances force a central bank, especially one determined to fight entrenched inflation, to use obscurity to protect itself against the inflationist tenor of the times. The central bank has to hide just how restrictive it has become in order to keep withering criticism at bay. But over time, politicians learned enough to turn specifically away from a know-nothing opposition to the high interest rates sometimes needed to restrain inflationary pressures; they pivoted as well toward permitting instrument independence. Instead, politicians began an assault on the predictable consequence of their own earlier opposition to controlling inflation: central bank secrecy itself.[14]

A part of the first thesis of this book is that the continuing historical trend toward more central bank transparency in the last couple of decades inevitably followed on the heels of full-fledged instrument independence.[15] Although economic theory provides some justification for transparency, that factor should not be overstated. Still, monetary policy is a little more effective in terms of economic outcomes when market participants are more completely informed. Then they can better comprehend the rationale for monetary-policy actions and better predict the conditional future course of the central bank's policy stance. But the main impetus toward greater Fed openness in the United States surely has been political pressure. "More transparency" has been a mantra in the US political realm since the cover-up in the Watergate episode in the mid-1970s. And, starting in 1992, Representative Henry B. Gonzalez, chairman of the House Banking Committee, heighted the attack on Fed secrecy.

A justification in political theory for central bank transparency is easy to find. It centers on fostering accountability for an independent central bank. A problem in a democracy is that if unelected central bankers are afforded instrument independence, then how in the world is their power to do mischief as opposed to good to be circumscribed? The answer to this question that has arisen in democratic nations around the world is to have the behavior of central banks subject to continual trial in the court of public opinion. But how can that be accomplished effectively if the central bank keeps its decisions about policy design and implementation hidden from the penetrating gaze of the media, the public, and the politicians? Even if the central bank is dragged kicking and screaming into the glare of the sunlight, society is going to be better off on average if it is open about most matters.

Yet neither mandated nor voluntary transparency should go too far. I personally think, for example, that the integrity of the FOMC's deliberative process requires that TV cameras or radio microphones not be allowed into the board room in real time during FOMC meetings. I'm afraid doing so would just encourage grandstanding rather the open and rational debate essential to sound decisions. As another example, financial markets become unnecessarily but understandably skittish whenever a central bank announces immediately that it is tempted to tighten in the near future depending on the incoming data. So a central bank should not travel too far down this route. Finally, in a bank panic, the central bank obviously shouldn't reveal the identity of individual borrowing institutions, else they would stay away to escape any stigma.

Not that an optimal amount of transparency always will yield infallible decisions. If put on the spot and forced to hazard a crude estimate based on a century of Fed history, I'd guess that the FOMC under the very best of circumstances will mess up a little some 20 percent of the time but screw up royally another 10 percent of the time. Two days after writing this passage, I read a similar assessment made in an interview with Alan Greenspan:

> Asked if he had regrets about any of his old decisions, Mr. Greenspan said that policy makers are lucky if they get it right 80% of the time. "Central bankers don't fret about the ones that came out less well than they would like. They just press forward and do the best they can," he said.[16]

While such a fraction admittedly is not great, like democracy itself, it's still far better than any alternative arrangement that I can imagine. But this undoubted fact does raise an uncomfortable issue having to do with washing one's dirty laundry in public. Fortunately, we live in a political climate where every policy error is pounced upon by merciless critics (like me). Still, I do sometimes wonder whether it really is advisable for a fallible central bank—being all too subject to error but for the social good needing to retain its independence from political pressure—to go all the way to a socially optimal degree of democratic transparency? It's just a thought. I'll leave the question on the table for you, the reader, to answer.

This book's second thesis relates initially to the absence or presence of large-scale asset purchases during the Great Depression, but with a modern application as well.

It places the blame for the start of a business cycle downturn in August 1929, the stock market crash in October, and the early development of the Great Depression itself squarely on the lagged effects of the restrictiveness in monetary policy in 1928 and much of 1929 that the Fed established to resist the stock market boom. Specifically, the near doubling of Treasury bill rates for the two years ending in the summer of 1929 was the beginning of the primary cause of the Great Depression. Of course, the Fed never should have tightened its policy screws so much in the late 1920s. But taking that action as a given, the Fed then was much too halting, simply as a policy judgment, in pushing short-term interest rates to zero by buying securities. This untoward reticence was the case even after the Fed's holdings of "free gold" were depleted after England's departure from the gold standard in September 1931. The Fed should have reacted to weakening money much earlier in the 1930s through large-scale purchases of Treasury securities. This unfortunately hypothetical approach would have reimbursed the private sellers of those securities, thereby injecting liquidity, lowering Treasury bill rates, and bolstering overall spending before the depression got really severe. But the Fed failed before February 1932 to make such purchases of securities in the open market.

It turned out that this book is in very good company. Decades after this argument was independently formulated the following quote from John Maynard Keynes appeared in a speech by then Governor of the Central Bank of Cyprus and Member of the Governing Council of the European Central Bank Athanasios Orphanides:

> "I repeat that the greatest evil of the moment and the greatest danger to economic progress in the near future are to be found in the unwillingness of the Central Banks of the world to allow the market rate of interest to fall fast enough" (Keynes, 1930, p. 207). He expressed concern that the "mentality and ideas" of the policymakers could stand in the way of the necessary policies (Keynes, 1930, p. 384) . . . "The Bank of England and the Federal Reserve Board . . . should pursue bank-rate policy and open market operations . . . [t]hat . . . combine to maintain a very low level of the short-term rate of interest, and buy long-dated securities . . . until the short-term market is saturated" (Keynes, 1930, p. 386).[17]

Thus, Keynes, Friedman and Schwartz, and Meltzer correctly concluded, though through different lines of argument from each other, that the Fed could and should have softened the magnitude of the Great Depression, but it did not do so. To account for the severe weakness in aggregate demand once the Great Depression got going, Keynes emphasized autonomous drops in spending, whereas Friedman and Schwartz pointed to bank panics and the resultant destruction of deposits, while Meltzer identified the Fed's focus on member bank borrowing of funds from the Fed as what forestalled massive purchases of securities.[18] This book disagrees with all three schools of thought. Once the Fed had driven the shortest-term interest rate to zero, the restraining forces already set in motion persisted unimpeded, as large-scale purchases of securities became akin to "pushing on a string," the apt term coined by a congressman in the 1930s. From February to June 1932 the Fed finally instituted "quantitative easing" (QE).[19] This is the modern phrase describing large-scale financial-asset purchases by the central bank. It's derived from the policy adopted by the Bank of Japan early in the last decade. It's used to identify this supplemental monetary policy action, which balloons the central bank's balance sheet and supposedly stimulates the economy. Yet the large-scale security purchases that boosted bank balances at the Fed proved to have little effectiveness. By the time the Fed had driven short-term interest rates to a de minimis level by mid-1932, further massive central bank purchases of securities in the open market to elevate banks' Fed balances further would have imparted little, if any, stimulus to depressed private spending. That is, once Treasury bill rates hit the zero lower bound, the Fed was correct to assert that monetary policy actions had become impotent.

Modern exponents of such a strategy like Chairman Ben Bernanke and Vice Chair Janet Yellen asserted that this approach is simulative not because the banks' Fed balances become elevated but because according to the "preferred habitat hypothesis" the Fed's bond purchases reduce the stock held by the public and thus lower long-term rates compared with their levels otherwise. But economic research on an obvious analogy has suggested that foreign exchange intervention that alters the outstanding stocks of the public's holdings of different currencies has no permanent impact on exchange rates.[20] (Such intervention is commonly "sterilized" by offsetting any monetary impact through selling other financial assets.) And the evidence from "operation twist" in 1961, as well as from the Bank of Japan's quantitative easing for half a decade after March 2001 as well as more recently, is not encouraging in this respect. Finally, the results of the Fed's recent episodic turns to quantitative easing during and after the financial meltdown, despite some dubious supportive research, arguably bolster this view given the tepid recovery at least through Bernanke's chairmanship.

We should take this last observation to heart. The Fed's quantitative easing has not been as effective a monetary stimulus as Chairman Bernanke initially claimed in his monetary policy testimonies in early March and mid-July 2011 before the Senate and House Banking Committees and at Jackson Hole in August 2012. The simulations of the Board staff's econometric model that Bernanke cited to support a sense of the program's potency had assumed the permanence, other things equal, of initial announcement effects about such techniques in financial markets. But the large backups in bond rates in the months after the formal announcements of the first, second, and third rounds of quantitative easing (QE1, QE2, and QE3), which represent the unwinding of the artificially low long-term interest rates induced by the emotional overreactions of investors on top of the profit-taking of speculators selling securities ultimately to satisfy the Fed's demand, raise questions about that assumption. These experiences demonstrate pretty clearly an automatic reversal in long rates of the original impacts.

This behavior of long rates is only partly a result of initial emotional or speculative over-reactions that can induce a temporary decline in the term premium. As the economic and financial outlook varies over time, the main lasting element behind the behavior of the yield on Treasury bonds relates to the other component capturing the expected path of short rates, which is a "jump variable," to use the jargon of economists. Accordingly, the changing quote as time passes really depends mostly on shifting expectations of the short rate down the road and is little affected by whatever historical values the bond rate had happened to record. In particular, the initial announcement effect of introducing QE doesn't much matter to today's quote, because the long-rate always will come to reflect predominately the varying economic and financial outlook. Thus, the assumption of the Fed (and several other central banks) of a permanent other-things-equal impact of QE is just invalid.

The behavior of another jump variable also is instructive. The stock price surge after the hint of QE2 in August 2010 and then implementation that November partly reflected the Fed's assertions that large-scale security purchases would be effective in lastingly raising inflation expectations and stimulating spending. But despite impressive corporate profits, by the time of the Jackson Hole symposium in late August 2011, all the gains in equity prices after QE2's implementation the previous November had been erased. These declines in stock prices reflected not only weak incoming economic data but also the growing recognition that the Fed had exaggerated the effectiveness of the massive open market purchases.

Even so, despite the increasing skepticism of both fresh research findings and contemporaneous media commentary, the Fed seemingly had become locked in by its numerous earlier supportive statements. So much for pre-commitment in the face of new contradictory information. The FOMC went ahead anyway and adopted QE3 in September 2012. It decided to buy for its portfolio each month $40 billion of mortgage-backed securities. That December it elected to add enough longer-term government securities to bring its total purchases each month to around $85 billion. We'll return in spades to a discussion of the various programs involving quantitative easing in Chapters 7, 8, and 9 that describe and evaluate these Fed policies.

The book's third thesis is that beyond QE3's medium-term ineffectiveness in boosting economic growth, the Fed's large-scale purchases of longer-term government securities also have little justification in postponing the inevitable day on the current fiscal course when new investor fears will cause bond yields adjusted for the market's expected inflation to start to mount. As we soon shall see, this unfortunate conclusion resulted from the welcome plank in the Emergency Economic Stabilization Act of 2008 that included the Troubled Asset Relief Program allowing the Fed to pay interest on bank balances. True, excessive structural federal deficits have meant an ongoing rapid ascent of overall governmental debt, which has been steepened by the further swelling of the deficit owing to the historically meager business-cycle recovery. But as yet the behavior of the national debt per se hasn't affected any economic conditions, including bond rates. The reason is that no one as yet has become very concerned about any risk that oppressive tax hikes or even a government default on its obligations for interest and principal might become necessary. Indeed, investors still consider Treasury securities to be the safest financial asset in the world. But that day will come if recent fiscal trends continue. As Erskine Bowles, co-chair of the National Commission on Fiscal Responsibility and Reform, insightfully quipped, "We're the best looking horse in the glue factory."[21]

The added drawback to quantitative easing has arisen because of the aforementioned October 2008 authorization for the Fed to remunerate reserves. The anticipated higher interest return on the extra Treasury bonds purchased by the Fed effectively would be offset fully by the greater expected interest expense associated with higher payments on banks' added Fed balances. That counterbalancing is because the Fed presumably would keep the interest rate on these balances closely aligned over time with its intended federal funds rate, expectations of which in turn are the dominant influence on the current market bond yield. Thus, in terms of a present discounted value, the expectations of the overall future amount of Fed remittances to the Treasury essentially would be unaffected by any form of quantitative easing.

To date, none of that has mattered much for economic conditions because the bond vigilantes have remained quiescent. But the open-ended large-scale Fed purchases of government debt that was a component of QE3 after late 2012 did not postpone the eventual start of a debt-related crisis by even one day. And after that day of reckoning does arrive, the Fed's future decisions of whether to enlarge, retain, cease, or unwind its policy of quantitative easing won't matter either, despite some temporary impact on long rates. The reason is that at that point the relevant measure of net government debt "in the hands of the public" will have come to include not only the holdings by the true public but also those of the Fed. And at that point nothing the Fed can do regarding its quantitative easing would affect that crucial measure of net debt. The ill-fated advent of upward pressure on long-term interest rates would continue unabated even in the face of the Fed's augmentation of sizable purchases of Treasury securities.

Describing the Historical Context for Founding the Federal Reserve System

Why was the United States the only major commercial country after 1875 without a central bank? And at the other end of the pre-Federal Reserve historical process, why in 1913 did the country's leaders finally think it necessary to establish a central bank to manage its money? The answer to the first question is that the people distrusted political and financial power concentrated in Washington, DC, and New York City. But money posed one of the central problems of the nation's founding to which the Constitution tried to provide an answer. Its authors clearly assumed the operation of a metallic standard. The Constitution gave the Congress the right to coin money and to regulate its value only in the sense of specifying the weight of gold or silver making up the dollar unit of account. Whether the Founding Fathers would have sanctioned the federal government issuing paper currency and managing its supply is doubtful in light of the hyper-inflationary experience with the revolutionary "Continental."

In various forms, money remained a major political and economic issue throughout the late eighteenth, nineteenth, and early twentieth centuries. That epoch included the First and Second Banks of the United States, chartered from 1791 to 1811 and 1816 to 1836, respectively, the experiment with "free banking" from 1837 to 1862, the suspension of gold convertibility and creation of Greenbacks in 1862, the Greenback-induced inflation during the Civil War, the National Banking Acts of 1863, 1864, and 1865, the Silver era from 1878 to 1893, the resumption of convertibility under the gold standard in 1879, populist discontent over deflation in the closing decades of the nineteenth century, William Jennings Bryan's support for Free Silver in his first campaign for the presidency in 1896, the era of National Banks from 1863 to 1913 with worsening panics, ending in the Panic of 1907, and the perceived need for an "elastic" currency to meet varying seasonal needs.

The first quasi-central bank in the colonies was the Bank of North America, chartered in late 1781. It handled the fiscal affairs of the nascent government of the Confederation and issued currency. Subsequently, acceding to a proposal by Alexander Hamilton, the new Congress passed legislation signed by President Washington establishing the First Bank of the United States in 1791, with a 20-year charter.[22] The new bank carried out some functions of a central bank, serving as the fiscal agent for the federal government and issuing paper money backed by gold reserves. It also was a private commercial bank, accepting deposits and granting loans. Through those activities, together with its decisions about whether or not to redeem the notes of state banks for specie, it could affect monetary and credit terms and conditions in the country. Because those actions generated controversy, a proposal to renew its charter failed by one vote in both chambers of the Congress. Its doors were locked for good in 1811.

After the War of 1812, the federal government's finances were in a shambles, including a substantial war debt, which provided the Congress with an incentive to create the Second Bank of the United States. President Madison reluctantly signed the bank law in 1816, also with a 20-year charter.[23] Its operations resembled those of its predecessor, including acting as the government's fiscal agent and issuing banknotes. In contrast to the notes issued by state-chartered banks, which the Second Bank policed, only its notes were acceptable in payment of federal taxes. The Bank ended up with 25 branches, compared with the eight branches of the First Bank. Thus, its commercial and fiscal activities even more effectively influenced credit conditions in the economy. Unfortunately, these activities of the Second Bank, like those of its predecessor, too often caused severe economic hardship, helping to form an unfavorable public opinion.

The Bank's monetary policy performance improved for a time after Nickolas Biddle became its head in 1823. However, in 1828 the electorate chose an implacable enemy of the Second Bank as US president—Andrew Jackson. He considered only gold and silver coins to be acceptable as a medium of exchange. Shortly after his reelection in 1932, Jackson decreed that federal deposits be transferred from the Second Bank to the state banks. The loss of Treasury deposits reduced the scope for the Second Bank to influence credit conditions around the country. In 1834, the House of Representatives allowed these deposits to stay in the state banks and refused to recharter the Second Bank. It ceased operations in 1836.

The demise of the Second Bank meant the heyday of state-chartered banks, but their behavior wasn't always responsible. They immediately went on sprees of lending and associated note-issuing, backed by specie or state-government securities, which induced accelerating prices. In response, as one of his last acts in office, President Jackson promulgated the Specie Circular in 1836, to be implemented by incoming President van Buren. It required gold or silver coins in payment for public lands. The bursting of the real estate bubble caused the panic of 1837, which was succeeded by a five-year depression. Another panic occurred 20 years later. The Free Banking Era, during which critics applied the moniker "wildcat banks" to the risky state institutions, lasted until 1863.

In that year and the next two President Lincoln signed three National Bank acts. The prohibitive tax on the notes issued by state banks ended their circulation, thereby creating a uniform national currency. Also, the acts allowed the federal government to grant charters for national banks. Unlike the case in Canada and most of Europe, but like northern state banks, national banks had to be unit banks without branches. The banks were supervised by a new agency, the Comptroller of the Currency. Both types of banks expanded over the next 70 years.

In terms of economic performance, inflation emerged as a serious problem in the Civil War, when the government financed its activities by issuing Greenbacks. In response, the polity resolved to return to convertibility under the gold standard. The unnecessary step of restoring pre-war parity, though, required a major deflation in prices. Nevertheless, despite the implied economic misery, the objective was attained in 1879. Maintaining the gold standard engendered a continued deflation, which took place during a secular boom in production. Still, farmers became disenchanted with the decline in relative as well as absolute agricultural prices, which spurred the Free Silver movement.

The Bland-Allison Act, passed in 1878, required the Treasury to buy a minimum amount of silver each year to be coined into standard silver dollars. The Treasury Note Act of 1890, or the Sherman Silver Purchase Act, was the greatest accomplishment of the silver movement, which culminated in the campaign of Democrat William Jennings Bryan in 1896. But by then the Congress already had repealed the silver purchase clause, ending in 1893 federal assistance to silver production. The falling general price level had stimulated gold exploration both domestically and internationally, and world gold production nearly doubled between 1893 and 1897.[24] The associated upturn in prices ended the political ferment over silver. Yet concerns remained under the gold standard, though not about price stability over very long intervals considering this automatic mechanism inversely relating prices to gold production. Instead, justifiable worries persisted about medium-term variability of overall prices as well as output.

Financial instability persisted in the National Banking era, which saw major banking panics in 1873, 1893, and 1907, and incipient panics in 1884 and 1890, when only sufficient issuance by the New York Clearing House of certificates—script used to clear checks at that institution—forestalled major panics. The bank panics "were accompanied by money market stringency, a stock market collapse, loan and deposit contractions, runs on banks, bank failures, the issue of Clearing House certificates, and in the case of the three major banking panics the partial suspension of cash payment."[25]

The recurrent liquidity crises and banking panics showcased the need for banking reform. After the intense Panic of 1907, the Congress passed the Aldrich-Vreeland Act of 1908, which authorized the emergency issuance of currency. It also created the National Monetary Commission, chaired by Senator Nelson Aldrich (Republican, Rhode Island), to study the needed financial reforms and make recommendations. The commission's massive reports in 1910 and 1911 identified two main financial flaws: the banking system was prone to panics and the currency was not responsive to periodic variations in demand. Heightened seasonal pressures, especially at year-end and in the autumn harvesting season, had imparted stringency to the money market, elevating borrowing rates.[26] This phenomenon regularly had added to the risk of bank failure. The associated more voluminous transactions had raised the demand for currency, which was issued only by national banks. But the requirement that the currency be backed only by Treasury securities constrained its supply.[27] The Commission furthermore pointed out inadequate bank supervision and inefficient check collection.

The final report of the National Monetary Commission, the so-called Aldrich Plan, addressed all of these problems. Released in early 1912, it incorporated the results of secret discussions on Jekyll Island off Georgia in November 1910 as well as a European tour in 1908. It called for a National Reserve Association, with a central body and 15 branches, but under bankers' control. The bankers' bank would rediscount bank loans—acquire the paper created by the loans at a discount from their face value—and issue currency more responsive to business conditions. William Howard Taft's platform in the 1912 campaign reflected Aldrich's proposals.

Populists, already worried about the "money trust" of New York bankers, derided the prospect of stronger banker control of the nation's finances. Woodrow Wilson and the progressive Democratic Party assumed the mantle of governmental oversight of central banking. In the elections of 1912 that party added control of the Senate to a previous majority in the House as well as winning the White House. With that outcome, no monetary reform proposed by the Republican Party had any hope of becoming law. Newly elected President Wilson worked with the new chairmen of the House and Senate banking committees, Congressman Carter Glass (Democrat, Virginia) and Senator Robert Owen Jr. (Democrat, Oklahoma). They crafted compromise legislation based on federal control of central banking through an independent regulatory body. But commercial bankers would have authority over regional Reserve banks. President Woodrow Wilson signed the Federal Reserve Act on December 23, 1913.

Previewing What's to Come

After this introduction, chapters 2, 3, and 4 in Part I take a bird's eye view of the century after the founding of the Fed.[28] They highlight the sometimes surprising and ironic linkages that related economic conditions, economic ideologies, and stabilization policies during that whole time. Chapter 2 first takes up the episode of World War I and the sharp recession that ended in 1921. Afterward the Fed experienced its "high tide" for most of the rest of the decade but then unfortunately helped induce the Great Depression. That tragic episode shaped the theory and practice of stabilization policies, which affected economic activity and price pressures.

Chapter 3 relates how legislation crafted by recently appointed Board Chairman Marriner S. Eccles founded the modern Federal Open Market Committee in August 1935. But in practice the Treasury retained significant control over monetary policy through the years of World War II, when the Fed dutifully pegged interest rates. That subservience ultimately was unwound after the Fed and the Treasury had a meeting of the minds in an accord reached in March 1951 that emancipated the central bank. The main negotiator for the Treasury was William McChesney Martin, who a month later was ensconced in the chairmanship of the Board, where he served until early 1970.

The next chapter presents an overview of the remainder of the Fed's 100-year history. It summarizes the crucial names involved in the Fed's policymaking and dates of critical turning points in its policy design, implementation, and communication. The chapter then offers a brief narrative of developments after Chairman Arthur Burns took office in early 1970. Inflation worsened appreciably during that decade, in part because incipient policy firmness sparked political resistance before it could reach fruition. The pace at which businesses were hiking their prices attained crisis speed late in the decade under Chairman G. William Miller. Such an environment became hospitable to the monetarist vision involving control of the money stock (currency and readily available deposits), partly because of the adverse consequences of its previous dismissal. Chairman Volcker introduced "practical monetarism" in October 1979, which lasted for three years. But even after the FOMC adopted a different approach, inflation still diminished over the next quarter century. During his 18 and a half years as chairman, Alan Greenspan's Fed actually achieved price stability while moderating business fluctuations. But the easy policy stance during his last four-year term as chairman contributed to the concealed buildup of a housing bubble that ended up bursting early in Ben Bernanke's chairmanship.

Chapter 5 contains some generalities from a contemporary perspective regarding Fed's recent thinking about how the economy works and how the US central bank makes, conducts, and discusses its monetary policy. But just because the Fed has rather conventional views in accord with the mainstream doctrines of professional economists doesn't mean that those views are always right. Mostly they are, but we shall offer an alternative to the accepted New Keynesian theory of inflation relying on rational expectations in labor and product markets. Instead, we'll posit that the inflation expectations affecting wages and prices combine lagged inflation and the Fed's quantitative goal. This chapter may afford the reader useful background for the detailed chapters that follow on the Bernanke era, which of course can't avoid these issues.

Part II, consisting of four chapters, covers monetary policy during the chairmanship of Ben Bernanke. The rocky experience as the initial half year of his first chairmanship wound down is the subject of Chapter 6. His communication problems mainly weren't his fault but were a legacy of the last FOMC statement supervised by Chairman Greenspan. It took until mid-year for the new chairman to extricate himself. Even during the apparently warranted policy hiatus from late June 2006 until September of the next year, underlying trouble was brewing. The Fed's newly found policy seemed successful on the surface but was not destined to last. The central bank was about to face its most severe challenge since the Great Depression of the 1930s. Chapter 7 first recounts how the seeds of financial disaster already had been sown beneath the surface. After its overt outbreak, the Fed responded in part with unusual lending and then episodic quantitative easing that caused the size of its balance sheet to mushroom. After the financial shock subsided, the Fed adopted several new policy initiatives.

The next chapter covers part of Bernanke's second four-year term as chairman, which began in early February 2010. The Fed kept busy adopting a second round of quantitative easing (QE2), starting press briefings, offering explicit forward guidance about the expected start of policy tightening, rediscovering operation twist, postponing the explicit date of its anticipated policy firming, and presenting projections of the funds rate. Then, in August 2012 at Jackson Hole, as Chapter 9 also describes, the chairman hinted strongly that QE3 was imminent. The chapter next examines how that day came to pass in September, along with another extension of the expected date of the liftoff of firming, while at year-end the Fed augmented its large-scale purchases and introduced economic guideposts rather than a calendar date to signal its anticipation of tightening. The Fed maintained the pace of its open-ended asset purchases during 2013, even after suggesting that it could start tapering well before year-end. But it decided in December to begin early in 2014. The chapter continues with a US application of the novel theory of inflation in Chapter 5. A rising but fairly constant uptrend of core consumer prices has occurred, though it will remain below the Fed's 2 percent target so long as economic slack persists. An epilogue examines the radical new methods that the Fed has devised for tightening policy in the face of post-crisis massive excess reserves.

Part III, consisting of four chapters and an appendix, recounts related developments in the Bernanke epoch. Chapter 10 takes up a defensible posture toward taxing and spending. It then addresses Bernanke's advocacy of gradual consolidation as opposed to an abrupt dive off the fiscal cliff. The chapter finally draws on a novel analysis in its appendix to explain how a threshold for federal debt to income would become important once investors are forced to contemplate possible tax hikes or default on interest or principal, how monetary and fiscal policies interact, how the start of interest payments on bank balances alters the meaning of different debt concepts, and how QE3 would affect the looming fiscal catastrophe.

Our attention in Chapter 11 shifts to regulatory and supervisory policy, not only at the Fed but in a broader legislative context. We compare the Aldridge report published *before* the establishment of the Federal Reserve System with the report of the Financial Crisis Inquiry Commission released *after* the Dodd-Frank Act had been signed into law. Then the chapter evaluates the Dodd-Frank Act itself. Chapter 12 explains the lack of criminal prosecutions after the crisis. It next examines the account by *Bloomberg* of the Fed's massive emergency lending in the midst of the financial turbulence. It ends by worrying about the potential effects on the Fed's independence in conducting its traditional monetary policy of its unorthodox lending, its later reliance on quantitative easing, and its new responsibilities for macroprudential policies.

Chapter 13 interrupts our domestic focus by applying the new theory of inflation advanced in Chapter 5 to three other geographic areas around the globe. The chapter begins by explaining the prolonged mild but stable deflation in core consumer prices (excluding food and energy) in Japan. Then, the text treats the Bank of England's experience with inflation targeting, quantitative easing, and forward guidance. Finally, the chapter examines the trembling in the Euro-zone after the currency and debt crisis erupted, the later relief delivered by the European Central Bank, as well as its response to the more recent threat of deflation.

Chapter 14 is a summary and conclusion. It first assesses some controversial policy issues in earlier eras, including what really caused the Great Depression, why money growth doesn't actually induce inflation, and whether sizable fiscal deficits and the associated debt explosion are damaging. This final chapter then considers the merits of entrusting ivory-tower economists with monetary policymaking, a subject rendered inevitable by the reference in the book's opening passages to "Those Marble Tower Boys!" It concludes by trying to fathom what the preceding history really means.

PART I

The Broad Sweep of Federal Reserve History: December 1913–December 2013

At 6:00 p.m. on December 23, 1913, President Woodrow Wilson entered his office. He was smiling as he looked around the circle of friends and associates who had assembled there. Spotting Carter Glass, the slightly built but exceedingly influential congressman from Virginia, the president beckoned him to join Senator Robert Owen of Oklahoma at his side. After shaking Glass's hand warmly, the president sat down at his desk and, using four gold pens, signed into law the Federal Reserve Act. As Arthur S. Link, Wilson's principal biographer, has written, "Thus ended the long struggle for the greatest single piece of constructive legislation of the Wilson era and one of the most important domestic Acts in the Nation's history."[1]

And so the Federal Reserve was born. After a world war and a sharp recession in the early 1920s, the Fed achieved its "high ride" the rest of the decade but then helped foster the Great Depression. That tragic episode significantly shaped stabilization policies, which powerfully reverberated in turn on economic and financial activity. The linkage of monetary thought with historical events has evinced ironic turning points all the way up to the present day. A theme running through the next three chapters summarizing the century of Fed history is the paradoxical tie between economic events, political ideologies, and monetary and fiscal policies.

CHAPTER 2

Growing Pains: Being Born after Panic and Experiencing Childhood in the Great Depression—December 1913–August 1935

The Federal Reserve Act created a quasi-public entity that would establish an "elastic currency," serve as the lender of last resort, mute the seasonal movements in interest rates, supervise member banks, manage the payments system, and encourage check clearing at par without charge.[1] The law intended the new agency to foster much greater financial stability. This second chapter traces out the patterns of monetary policy during the first 22 years of the Fed's existence.

Founding the Federal Reserve System

The act specified that all member commercial banks had to subscribe to an amount of stock in their own regional Federal Reserve bank equal to six percent of their capital and surplus. At least eight but no more than 12 regional Reserve banks were to be created, on the argument of Senator John F. Shafroth (Democrat, Colorado) that no bank should be more than a day's train ride from its Reserve bank. That way in the event of a run on a bank, a banker could catch a train in the morning and cable back on the same day that enough currency had been secured from a Reserve bank in exchange for eligible collateral to satisfy the nervous depositors upon the banker's return the next day. To minimize hurt feelings, 12 Reserve banks ultimately were selected. The act established the Federal Advisory Council to ensure that bankers' concerns were heard.

A seven-member Federal Reserve Board in Washington would oversee the system. Table 2.1, taken from the Board website, lists the names of the first seven heads of the Board along with the dates of their terms. The whole Board was composed of the Secretary of the Treasury and the Comptroller of the Currency as ex officio members, and five other members appointed by the president with the advice and consent of the Senate.

Table 2.1 Heads of the Federal Reserve Board, August 10, 1914, through August 22, 1935

Head	*Dates of Term*
Charles S. Hamlin	August 10, 1914–August 9, 1916
W.P.G. Harding	August 10, 1916–August 9, 1922
Daniel R. Crissinger	May 1, 1923–September 15, 1927
Roy A. Young	October 4, 1927–August 31, 1930
Eugene Meyer	September 16, 1930–May 10, 1933
Eugene R. Black	May 19, 1933–August 15, 1934
Marriner S. Eccles	November 15, 1934–August 22, 1935

Note: The head and vice head were designated governor and vice governor before new legislation was enacted on August 23, 1935. *Source:* Board of Governors of the Federal Reserve System, "Membership of the Board of Governors of the Federal Reserve System, 1914–Present." Retrieved from http://www.federalreserve.gov/aboutthefed/bios/board/boardmembership.htm.

The act presupposed the "real bills doctrine," which held that the central bank should accommodate the needs of trade and agriculture by discounting only self-liquidating receipts of commercial bank loans or other paper arising from business transactions. This approach differed from making eligible speculative instruments such as equities or government securities, both of whose prices could vary appreciably with market conditions. The act also greatly constrained the Federal Reserve by presuming the continued automatic operation of the gold standard. An assumed fixed dollar price of gold ensured that flows of that metal between countries would equilibrate international payments and keep domestic prices relatively steady over long intervals of time.

As J. Alfred Broadus, then president of the Richmond Fed, pointed out:

> In one of the great ironies of monetary history, by the time the Federal Reserve banks actually opened for business in 1914, the outbreak of World War I in Europe had brought about widespread suspension of national commitments to maintain the fixed currency price of gold. Because the United States remained neutral until 1917, it was able to remain on the gold standard throughout the war, and, although it embargoed gold exports, it continued to fix the dollar price of gold at $20.67 per ounce.[2]

During the war, authority shifted to the Treasury, which mandated low-cost financing. The Fed had to keep interest rates down, though it refrained from buying Treasury securities.

The Federal Reserve System Attaining Its "High Tide"

After the Treasury relinquished control over interest rates in late 1919, a power struggle ensued between the Board and the Reserve banks, which won some of the early rounds. The New York Reserve Bank was especially influential. Its first head, then also called governor, was Benjamin Strong, who served from November 1914 until his untimely death in October 1928. Although without a college degree, he had the experience that gave him expertise in international banking, and he was a charismatic leader. He took it on faith that the New York Reserve Bank was the natural locus of system authority, since financial markets were concentrated there.

Strong disliked the low Treasury interest rates that created a virulent inflation during and after the war. By November 1919 he thought that the time had passed for raising rates without precipitating a crisis. Thus, he probably would have opposed, and perhaps moderated, the ill-fated hike in the rates charged by the Reserve banks on discount loans of funds to commercial banks. In New York the discount rate went from 4 to 7 percent during the first half of 1920. But for health reasons Strong had to take a 13-month leave of absence starting in mid-December of the previous year. Sure enough, that policy tightening contributed to the sharp 1920–1921 recession. The Fed also made the recession longer and more severe by refusing to lower discount rates for more than a year after the peak in the business cycle in January.

That experience disillusioned Strong with having the discount rate always maintained at a penalty above short-term market rates and with the underlying real bills doctrine. In May 1922, he encouraged the Reserve banks to form a committee of governors under his chairmanship to coordinate the purchases and sales of government securities. Smaller Reserve banks especially favored the move because the pooling of returns on the Fed's portfolio of open market securities helped them acquire the earnings needed to pay the dividends to their member bank shareholders.[3] The Board—particularly member Adolph C. Miller, its only PhD economist—resented and often opposed the influence of the New York Bank, including its heretical departures from the real bills doctrine. Accordingly, the Board, seemingly feeling slighted, in March 1923 disbanded that committee and originated the Federal Open Market Investment Committee, which, although comprised of the same governors, would have to operate under the aegis of the Board. The extent of the Board's authority would remain in dispute throughout the remainder of the decade.

The *Tenth Annual Report* for 1923 reflected the advances in the Board's thinking on monetary policy. It recognized that, along with discount lending, open market purchases and sales of Treasury securities also were a powerful tool that should be consistent with a posture of the central bank designed to promote business activity. And in advancing loans, the quantity of the paper discounted, it was thought, was as crucial as its quality in determining the central bank's appropriate extension of credit. The successful economic performance during most of the rest of the 1920s, based on a monetary policy implementing these principles, represented the "high tide" of the Federal Reserve, in the words of Milton Friedman and Anna Schwartz.[4]

Strong's leadership was instrumental in this outcome, according to Liaquat Ahamed,

> The Fed's primary goal should be, he believed, to try to stabilize domestic prices. But he thought that it should also respond to fluctuations in business activity—in other words, the Fed should try to fine-tune the economy by opening the spigot of credit when commercial conditions were weakening and closing it as the economy strengthened. . .
>
> Led by Strong, the Fed had undertaken a totally new responsibility—that of promoting internal economic stability.[5]

Strong encouraged a program of open market purchases in 1927 to stem a gold drain from Europe. But as Adolph Miller would later emphasize, the policy easing to help Britain to stay on the gold standard also stimulated speculation in the stock market. Robert L. Hetzel wrote:

> The stock market boom in the last half of the 1920s prompted the next instance of purposeful deflation after 1919–1920. In the 1920s, gold inflows rather than advances from the discount window became the primary source of Federal Reserve credit. Policymakers saw the rise in stock prices after 1925 as evidence that gold inflows circumvented the real bills policy.[6]

Strong's worsening illness followed by his death in October 1928 contributed to the leadership vacuum, and policy continued to drift. To make matters even worse, a conflict over how to deal with ever-rising equity prices flared up in 1928–1929 between the Reserve banks, especially New York, and the Board. The banks wanted not only to continue open market sales of Treasury securities but also to raise their discount rates to constrain security lending by commercial banks. The Board, though, denied numerous such requests, on the grounds that business activity in general would be impaired. Instead, it favored public disapproval of stock-market speculation through moral suasion and more direct action in the form of administrative pressure on member banks.

Barry Eichengreen recently well summed up the situation:

> The question then was whether the Fed should raise interest rates in response to the rise in the stock market, in order to prevent development of even more serious financial imbalances and risks. Alternatively, it could continue to direct monetary policy to the needs of the real economy and address financial imbalances through other means. It could rely on what today we would call "macroprudential policy," and what contemporaries called "direct pressure," that is, attempting to limit bank lending to financial markets directly. . .
>
> Ultimately, the Fed chose the first alternative, raising rates. The consequences would be far-reaching.[7]

The Federal Reserve System Failing in the Great Depression

Stock prices crashed in October 1929. The economy already had reached a peak that August, whereupon economic activity began a protracted slide. Then, in June 1930 President Herbert Hoover signed into law the ill-conceived Smoot-Hawley tariff, which appreciably raised duties on imported goods. Foreign countries soon retaliated, damping demand for US exports. From 1929 to 1933, income in current dollars dropped by more than one-half. Average prices of goods and services in the national income accounts fell in excess of one-quarter, so real income adjusted for the declining prices lost more than one-third. Unemployed workers skyrocketed to a quarter of the labor force. The associated toll in human misery was incalculable.[8]

The Great Depression initially spawned the development and intellectual ascendancy of the Keynesian doctrine, which was named after the thought of British economist John Maynard Keynes (1883–1946). He published *The General Theory of Employment, Interest and Money* in 1936, and it took the economics profession by storm. Keynes's vision—to use Joseph Schumpeter's term—can be briefly summarized:

1. A private capitalist economy is basically unstable, and subject to shifting spending propensities that frequently displace it from levels of production consistent with full employment. Self-correcting mechanisms are quite sluggish and weak, if not at times nonexistent.
2. Fiscal policy—variations in government spending and taxation—has a rapid and predictable effect on aggregate spending. Frequent changes in fiscal policies can provide the necessary balance wheel to counter variations in private spending and production.
3. The public's demand for money can exhibit considerable instability relative to aggregate spending, potentially rendering even those monetary policy actions that raise the stock of money but do not lower interest rates impotent in spurring overall spending. Indeed, a "liquidity trap" can occur when interest rates are so low that everyone expects them to rise in association with capital losses on security prices. In that situation, everyone prefers holding money rather than securities, putting a floor under interest rates regardless of the central bank's attempts at more expansive policy.
4. Finally, an outgrowth of the modern liberal tradition as it developed in Western countries is the view that in a democratic nation, political power will end up in the hands of people who will use it to carry out the public interest, assuming politicians are provided the best available economic advice.

After the Second World War, economic scholarship, public opinion, and political sentiment all put considerable weight on governmental efforts to keep unemployment low. That attitude stressed high employment even at the expense of stable prices. Simply put, no political consensus existed for fighting inflation on the backs of the unemployed. The conquest of the political sphere by the Keynesian vision in the United States was marked by the passage of the Employment Act of 1946. It charged the president, and thus the government, with maintaining "maximum employment, production, and purchasing power." It also created the president's Council of Economic Advisers.

Since he published his major work, many observers have commented on the prophetic irony of the following passage from the *General Theory*:

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back.[9]

The Fed assumed a pivotal, not a peripheral, role in the next notable intellectual repercussion of the Great Depression, albeit one delayed almost 30 years. It came in 1963 with the revisionist interpretation put forth by Milton Friedman and Anna Schwartz in *A Monetary History of the United States: 1867–1960.* The authors attributed the Great Depression mainly to the massive contraction between 1929 and 1933 in the broad M2 measure of money composed of currency and all bank deposits.

Their monetarist vision turned the Keynesian one on its head:

1. A stable monetary environment, characterized by slow, steady growth in money, will ensure that a private capitalist economy will be reasonably steady. Automatic corrective forces reliably will return production over time to levels consistent with full employment.
2. Fiscal policy actions have rather minor and unpredictable effects on overall spending. Besides, lags in recognition of the problem, in implementation, and in the effect on the economy generally would render them harmful in any event.
3. The demand for money relative to current dollar spending is predictable in the long run. Hence, changes in money growth have major effects on the expansion of aggregate spending, which show up predictably over time as variations in the rate of inflation. But the effects of changes in money growth on spending are long and variable, so that the short-run impact of ups and downs in money growth on spending is unpredictable.
4. Given the uncertain short-run effects of changes in money growth as well as the structure of incentives facing politicians, the government can't be trusted to use its monetary policy stabilization tool in the public interest. Monetary policymakers should be subjected to a legislated rule specifying a low, constant rate of money growth.

To be sure, the publication of a book of economic history may seem like a small event. But Friedman's insistent and persuasive personality helped to spread the word. That doctrine also appeared in his *Newsweek* columns, which reiterated the message of his earlier book of advocacy.[10] The incisive monetarist vision, though initially unpopular, ultimately changed the theory and practice of policymaking. The book by Friedman and Schwartz blamed the Fed's disastrous monetary policy on the illness and subsequent death in October 1928 of Benjamin Strong, the president of the Federal Reserve Bank of New York. The last two paragraphs of their chapter on the Great Contraction defending that view contain a prophetic irony because the words also apply to the future acceptance of the monetarist doctrine itself:

> The foregoing explanation of the financial collapse as resulting so largely from the shift of power from New York to the other Federal Reserve Banks and from personal backgrounds and characteristics of the men nominally in power may seem farfetched. It is a sound general principle that great events have great origins, and hence that something more than the characteristics of the specific persons or official agencies that happened to be in power is required to explain such a major event as the financial catastrophe in the United States from 1929 to 1933.
>
> Yet it is also true that small events at times have large consequences, that there are such things as chain reactions and cumulative forces . . . Because no great strength would be required to hold back the rock that starts a landslide, it does not follow that the landslide will not be of major proportions.[11]

To see how the monetarist vision derived from the *Monetary History*, let's focus more closely on the authors' interpretation of the Great Depression. In summary, they argued that the decline of current dollar, or nominal, income from 1929 to 1933 of more than one-half was accompanied by a drop in M2, the broad quantity of money, of about one-third. They asserted that the direction of causation dominantly went from money to income, not vice versa, since other forces acted to depress the money stock. Indeed, because the Federal Reserve was ultimately responsible for the monetary contraction, it bears primary responsibility for the severity and length of the Great Depression.

Friedman and Schwartz emphasized that the decline in the money stock over the period was associated with three waves of bank failures. To be sure, the failures did not affect the sum of bank accounts at the Reserve banks, which are called reserves, plus the outstanding amount of currency. That sum measures the monetary liabilities of the Fed that provide the base for money creation. Thus, the sum of reserves and currency can justly be called high-powered money. It continued to rise on balance over the years in question. But the amount of money that it could support was sharply reduced by the reaction of the public and the banks to the waves of bank failure.

The crises of confidence in the safety of the public's deposits at commercial banks induced people to try to exchange their bank deposits for currency, which lowered the ratio of deposits to currency. Such runs on banks depleted bank reserves as depositors acquired cash, forcing banks to further liquidate deposits, and also induced banks to sell assets in order to raise the funds people were demanding in currency. In the process, the bank deposits of the buyers of the securities were run down, reducing still more the ratio of deposits to currency. The fire-sales of bank securities additionally lowered the market value of remaining bank assets, converting a situation of bank illiquidity into one of bank insolvency. Many banks ended up going out of business. Moreover, in response to the failures, the remaining banks were induced to hold more reserves as fractions of their deposits than the regulations required. They held these excess reserves as a precaution for their own protection. This decrease in banks' desired ratio of deposits to reserves together with the decline in the public's desired ratio of deposits to currency combined to reduce dramatically the amount of broad money that the still growing volume of high-powered money could support.

Notice that this explanation of events falls in the class of what the late Harvard philosopher Robert Nozick called "invisible-hand explanations"—in which the outcome of human interactions bears no resemblance to the intentions of the actors.[12] Adam Smith's account in his renowned 1776 book *The Wealth of Nations* of why the operation of a system of market incentives furthers the general welfare is the prototype of this type of explanation: "Every individual intends only his own gain, and he is in this, as in so many cases, led by an invisible hand to promote an end that was no part of his intention." But in contrast to this general rule applying to market activity, the self-interested actions of people in bank panics gave rise to disastrous, rather than beneficial, overall results, pointing to a structural flaw in the monetary arrangements at the time—in particular the lack of deposit insurance. (The Banking Act of 1933 corrected this defect by establishing a deposit insurance fund, which the Banking Act of 1935 reshaped and named the Federal Deposit Insurance Corporation, or FDIC.)

What may at first glance seem curious is Friedman and Schwartz's transformation of this invisible hand explanation of the bank panics into a visible hand explanation in which the blame is placed on the Federal Reserve. Isn't blaming the Fed for the bank panics like blaming a passerby—who refuses to jump in the water—for the drowning of the passengers of a capsized boat as they claw at each other in a futile effort to save their own skins? I think not, since in this instance the Fed had been appointed as the lifeguard. Lifeguards certainly can be held accountable for sins of omission as well as sins of commission. The Federal Reserve failed to act as the lender-of-last-resort to the commercial banks to provide the borrowed reserves that would have raised high-powered money. More importantly, those actions would have helped to provide the funds to satisfy the public's elevated demands for currency, at least mitigating the severity of bank panics.

But holding a lifeguard morally responsible for a drowning is different from saying that the lifeguard caused the drowning in a scientific sense. More satisfying as a scientific explanation is that stormy seas, say, caused the boat to capsize and hence the drowning. The economic historian Peter Temin, a professor at MIT, advanced a counter-argument from a Keynesian perspective in his 1976 book.[13] He asserted that the bank panics and associated decline in the quantity of money—the drowning in my analogy—was largely the result of the collapse of spending—the stormy economic seas. Even in Friedman and Schwartz's framework, the sharp decline in spending and the drop in business activity, accompanied by record business bankruptcies, clearly weakened both the soundness of bank loans and banks' resiliency in the face of enhanced public concerns.

What, then, explains the stormy economic climate, that is, the decline in output and prices in that interval from the autumn of 1929 to September 1931? To be sure, in October 1931 "the Federal Reserve in the United States raised interest rates to defend its gold reserves and stay on the gold standard, setting off further declines in output and exacerbating the banking crisis."[14] But before then, Temin pointed to the sizable dip in consumption and investment demands, only part of which he attributed to the declines in income and wealth associated with the crash in stock prices. The rest largely owed to unexplained shifts in spending propensities relative to income of the kind Keynes emphasized. Surely, too, the declines in income and market transactions in dollar or nominal terms early in the Great Depression reduced the public's need for money to facilitate the diminished transactions. The fall in the nominal stock of money no doubt in part reflected this reduced money demand that followed the collapse in nominal income and spending. Indeed, if the Fed had permitted the nominal supply schedule for money to have shifted back by more than the nominal demand schedule, then a rise in the "price" of money—short-term interest rates—would have taken place. Instead, the observed fall in short-term interest rates on Treasury bills from the autumn of 1929 to the summer of 1931 suggests that during this period the induced declines in the public's demand for money overshadowed the reductions in supply caused by the Fed.

Yet Friedman and Schwartz downplayed the role of the collapse of the economy in inducing the decline in the stock of money from 1929 to 1933. By establishing that the primary line of causation instead always goes from movements in money to movements in nominal income, they could counter criticisms that money doesn't really matter and that the historical correlation only reflects the passive adaptation of movements in money to movements in income that, in turn, are caused by other forces. However, in my view, the evidence from the Great Depression does not provide strong support for this general monetarist proposition.

My own judgment about the truth or falsehood of the monetarist vision stemming from Friedman and Schwartz's interpretation of the Great Depression obviously had precious little to do with the acceptance of monetarist ideas. Of much more significance was the attractiveness of the overall monetarist vision. Economists, like historians, have always engaged in debates regarding technical minutia without having a discernible impact on the course of economic, or historical, developments. But the visionary can have a substantial impact if the conditions are ripe. The worldwide inflationary climate of the second half of the 1960s and the 1970s proved singularly amenable to the acceptance of the monetarist vision. And a prominent proponent of monetarist ideas was Allan H. Meltzer.

Writing more than 25 years after Peter Temin, Allan Meltzer of Carnegie Mellon University and the American Enterprise Institute published in 2003 an 800-page first volume of a history of the Federal Reserve through its accord with the Treasury Department in March 1951. In 2009 he issued a 1,300-page second volume of Fed history going through 1986. Well before those studies, Meltzer had already attained distinction in a long academic career as well as achieved broad influence as a polemist. Meltzer and Karl Brunner were the founding members of the Shadow Open Market Committee, which first met in September 1973. In succeeding years it maintained a monetarist perspective that was highly critical of the Federal Reserve's design, implementation, and communication of monetary policy.[15]

His first volume contained still another take on the Fed's role in the Great Depression. Meltzer thought that both monetary and nonmonetary factors combined in a uniquely powerful way—much as a perfect storm—to cause the sustained economic collapse but that the Fed handled the situation very poorly:

> The extreme positions—that monetary policy was the only cause or that monetary policy played no role—are difficult to sustain. A more plausible explanation is that the depth and severity of the Great Depression were the consequence of a series of shocks that the Federal Reserve neglected or failed to offset completely. The shocks include French gold policy, banking panics, increased demand for currency, departure of Britain from the gold standard, the stock market decline, failure of banks in Austria and Germany, collapse of United States export markets in Latin America, the effects of tariffs and retaliation on prices and thus on gold movements, and other events. Some of these events are both the effect of prior changes and the proximate cause of subsequent changes. We are unlikely to develop a complete list of "true" causes that operated independently of other events.[16]

Meltzer explained the Federal Reserve's ineffectiveness in limiting the severity of the Great Depression by its acceptance of the Burgess-Riefler doctrine. It was named after W. Randolph Burgess and Winfield Riefler—staff members at the New York Reserve Bank and the Board. After the theory had been sketched out in the Federal Reserve's *Tenth Annual Report* for 1923, those two economists wrote books developing their ideas in more detail.[17]

The operation of that doctrine in practice supplemented and partly supplanted the workings of the gold standard and the real bills doctrine. The Burgess-Riefler doctrine described commercial banks as reluctant to tap the discount window for borrowed reserves. The theory posited that the amount of bank borrowing of reserve balances from the Fed thus was positively associated with short-term market interest rates. Indeed, it held that the degree of tightness or ease of monetary policy itself could be indexed by whether borrowed reserves were high or low. A neutral level of borrowing was around the $500 million level. Higher levels of borrowing would induce individual banks to become more restrained in their lending and investing so as to avoid a posture of continuous indebtedness to the Federal Reserve. Rather than borrow reserves from the Fed out of a profit motive, banks instead would only come to the Fed hat in hand when they were in need of funds.

Thus, the Fed's open market sales of securities that extinguished reserves were a much more important reason for bank borrowings than the financial incentives that may have been created by rates on bank assets relative to the Fed's discount rate on its advances of reserve funds. Similarly, open market purchases of securities that inject reserves would induce banks to repay their Fed borrowings. Open market operations gained ascendancy as a policy instrument compared with the discount rate, which no longer was seen as having to be set at a penalty.

Meltzer correctly emphasized that interest rates when adjusted for expected inflation, or real interest rates, are much more influential in effecting the borrowing and spending of the public than the nominal rates observed in financial markets. But he asserted that the Fed ignored this crucial distinction by using the level of borrowed reserves to gauge the stance, and the associated thrust, of monetary policy.

Over nearly the first year of the downturn after the August 1929 peak in economic activity, the Fed followed the Burgess-Riefler doctrine in pursuing the lower borrowing all right that contributed to the decline in market interest rates, but it did not do so aggressively enough to keep high-powered money—which Meltzer calls the monetary base—from declining. But once borrowed reserves had gotten low enough and excess reserves had risen appreciably in mid-1932, the Fed gave up on systematically buying more securities in volume to inject the additional reserves that would have offset their decline stemming from the incipient currency drain. The Fed didn't do so on the grounds that banks would just allow the funds to sit idle in even larger excess reserves. Banks could not possibly use those funds to make productive loans that weren't demanded in any event or to purchase securities whose yields, at least on the low-risk short end, already were too low to be profitable.[18]

Meltzer, however, argued that any such notion of pushing on a string simply reflected an intellectual error. In Meltzer's opinion, had the Fed bought substantially more securities for its portfolio, the heftier increase in the monetary base would only initially have gone into excess reserves. Over time, private spending would have been stimulated and deposits and required reserves augmented, even with the very low nominal market interest rates that accompanied monetary "ease" but nonetheless with the cripplingly high real interest rates brought about by the severe price declines, that is, deflation. Meltzer, by contrast, considered the deflation to have been helpful. The price declines would have meant an even larger increase in the real monetary base after an adjustment to incorporate the effects of those changes in prices, implying a further spur to the monetary stimulus. Thus, the Great Depression, even well after it had gotten severe, could have been significantly cushioned and shortened.

I have my doubts. I just don't understand how the simulative mechanism is supposed to work. Ben S. Bernanke, Vincent R. Reinhart, and Brian P. Sack wrote an encyclopedic treatment of the possibility of monetary stimulus under conditions of extremely low short-term interest rates, a saturation of excess reserves, and deflation.[19] I interpret their research as suggesting that once the conditions of the Great Depression had been established, and short-term interest rates driven to zero, massive central bank purchases of securities in the open market, which would have elevated excess reserves further, would have imparted only very minor, if any, stimulation to the depressed private spending.

The experience in Japan—with the two-decade-long deflation of prices resulting stagnation in economic activity despite a half-decade of large-scale asset purchases early in the new millennium and its reestablishment of late—surely is not encouraging in this regard. After the approach of short-term interest rates to zero in 1999, the Bank of Japan made the admitted miscue of temporarily tightening in late 2000. But it soon repented and in March 2001 announced a zero interest rate policy along with a policy of massive purchases of securities. Thus, it did engage in a program of what came to be called quantitative easing that enlarged banks' excess reserves, thereby significantly augmenting the monetary base, but, as Chapter 13 will argue, to no avail. Both policies officially ended just five years later in March 2006. In the case of "operation twist" in the United States in 1961, discussed in the next chapter, the Fed had sold Treasury bills to raise short rates to attempt to support the dollar's exchange rate but had bought longer-term Treasures to try to reduce long rates and spur economic activity. It had little impact, though the Treasury's enhanced issuance of long-maturity securities at the same time didn't help. And the evidence from the Fed's recent turn to quantitative easing after the financial meltdown, while still being assessed, arguably supports this view given the tepid recovery.

To account for the severe weakness in aggregate demand once the Great Depression got going, we saw that Temin, like Keynes, emphasized drops in autonomous spending, whereas Friedman and Schwartz pointed to bank panics and the resultant destruction of deposits, while Meltzer identified the Fed's focus on member bank discount-window borrowing as forestalling massive open market operations. I am advancing different arguments. I place the blame for the start of the downturn, the stock market crash, and the early development of the Great Depression squarely on the lagged effects of the restrictiveness in monetary policy in 1928 and much of 1929 that the Fed established to resist the stock market boom. I think, though, that the degree of monetary restraint in the late 1920s is understated by the flattening of M2 during 1929 noted by Friedman and Schwartz or even by the $625 million rise in discount borrowings over the four years prior to October 1929 mentioned by Meltzer.[20] The degree of policy restraint is, I believe, far better captured by the near doubling of the interest rate on Treasury bills in the two years after the summer of 1927.[21] Then, simply as a policy judgment, albeit constrained by the rules of the gold standard, the Fed was much too halting in forcing short-term interest rates to zero by buying securities in volume.

The conclusion that comes to my mind is drawn from modern macroeconomic theory. Assume that the initial collapse in economic activity largely *was* the delayed result of the earlier increases in Treasury bill rates on spending rather than because of other monetary factors and that the drop in the nominal money stock *was* mostly induced by the fall in nominal income. Despite these presumed facts—in fact, *precisely because of them*—the Federal Reserve still should be faulted for not reacting to the decline in the money stock. To be sure, the Fed should not have withdrawn reserves in order to raise Treasury bill rates so much in the two-year run-up to October 1929. Yet even taking that mistake as a given, had the Fed engaged in massive purchases of securities in the open market soon thereafter, even from October 1931 to February 1932 after England left the gold standard, it would have significantly expanded the amount of reserves and high-powered money.[22] If it had done so, the sellers would have received the payments in bank deposits backed by new reserves much sooner. The Fed then would have injected much more nonborrowed reserves into the banking system earlier in the 1930s, thereby easing liquidity conditions and lowering short rates more and faster from their peaks in 1929. Such actions would have stimulated private spending and lessened the severity of the later bank panics. But before February 1932 the Fed instead failed to make large-scale purchases of securities in the open market. And after short-rates finally had been driven to zero in mid-1932 when the Fed ceased sizable open market purchases, the ongoing contractionary forces could not have been restrained by a continuation of sizable open market purchases, as argued above.

Before he instituted the Fed's radical initiatives as chairman, Ben Bernanke as an academic economist at Princeton University made influential intellectual contributions to the study of the Great Depression. His research afforded a rationale for the central bank's counter-attack on the financial tumult in 2007 and 2008. His various previously published journal articles were collected in a book appearing early in the new century.[23] Bernanke's work encompassed evidence drawn from foreign as well as US experience. It apparently confirmed the emphasis placed by Friedman and Schwartz on declines in money, importantly induced by flaws in the workings of the international gold standard and mistakes on the part of central banks. The two factors were interrelated. Leaving the gold standard in the early years enabled foreign central banks to reflate and lessen the contractionary impacts of monetary policy. Recovery from the depths of the Great Depression later began in the United States only after the Federal Reserve was emancipated from its "golden fetters" by a departure from the gold standard in April 1933.[24]

But Bernanke's research supplemented this causal factor by pointing to breakdowns in the functioning of the credit intermediation mechanism. On the demand side, the widespread deflation in asset prices decimated the financial position of debtors by undercutting their net worth. Their resulting bankruptcy eliminated their capacity to borrow to acquire working capital or to finance consumer durables. On the supply side, loan losses seriously impaired bank capital, disrupted their ability to lend, and gave rise to financial crises, including banking panics. Bernanke also demonstrated that slow downward adjustment of nominal wages in the face of the significant declines in prices or deflation meant that real wages kept rising, further depressing firms' desire to hire workers.

Let's now depart from the conclusions of academic research by economists and return to historical developments. President Hoover was notably unsuccessful in his repeated attempts in real time to encourage the Federal Reserve to take more effective action to stem the contraction. So the economic downturn worsened. A little after mid-year, Congress, in an attempt to counter the associated deflation, passed the Federal Reserve Act of 1932, also called the Glass-Steagall Act of 1932. It liberalized the collateral for discount window lending, allowing loans to member banks on any security the Federal Reserve banks considered satisfactory, and even permitted them to make loans to nonbank borrowers in "unusual and exigent circumstances." Hoover was soundly defeated by Franklin D. Roosevelt in the election in the fall of 1932. Early in the morning on the day Roosevelt was to be inaugurated, the Board awoke Hoover to request a banking holiday to counter pervasive runs on banks, an appeal Hoover denied in an angry letter.[25] On his first full day in office, March 5, 1933, Roosevelt did declare the bank holiday.

In subsequent years, in part at President Roosevelt's behest, the Congress passed legislation addressing the perceived causes of the Great Depression. The Banking Act of 1933, also known as the Glass-Steagall Act of 1933, not only created deposit insurance but also segregated commercial banking (taking retail deposits and extending credit to firms and households) from investment banking (underwriting and trading stocks and bonds). The Securities Act, also passed that year, improved disclosure by mandating that securities sold across state lines be registered with the federal government. In 1934 the Securities Exchange Act became law, establishing the Securities and Exchange Commission, which regulated trading and required companies to disclose information regularly. The Public Utility Holding Company Act in 1935 established regulation of the interstate operations of utilities, while the Trust Indenture Act passed in 1939 enacted regulation over the issuance of debt securities. Moreover, the Investment Company Act and the Investment Advisers Act, both passed in 1940, gave the SEC regulatory authority over investment companies and investment advisers, respectively.[26]

The next chapter recounts how legislation composed by recently appointed Board Chairman Marriner S. Eccles founded the modern Federal Open Market Committee in August 1935. But Fed had little practical independence during the war years owing to the Treasury's control over monetary policy. The Fed was relegated to pegging interest rates. The Fed and the Treasury reached an accord in March 1951 allowing for the central bank's independence. The main negotiator for the Treasury was William McChesney Martin, who became Board chairman a month later, serving until early 1970.

CHAPTER 3

Breaking Up Is Hard to Do: Splitting from the Treasury in Adolescence and Maturing More—September 1935–January 1970

Governor Laurence Meyer gave a talk in 1998 describing a Treasury lunch at the Board at which the question arose as to what the four letters FOMC meant. To quote him, "My concern about the public awareness of the FOMC was heightened recently during one of the weekly luncheons Governors host for a small group comprised of the staffs at the Board and the Treasury. A very senior member of the Treasury staff, during our luncheon conversion, asked me if I knew what 'FOMC' stood for. A strange question, I thought, coming from so knowledgeable a person. I replied that I thought I did, but, just to be sure, what did he believe it stood for? He replied 'Fruit of the Month Club.'"[1] I'll add just two comments regarding that story. First, FOMC is an acronym that in truth always stands for the Federal Open Market Committee. Second, I actually attended that lunch, and I remember vividly what Meyer described and who cracked the joke. It was none other than Timothy F. Geithner, later himself president of the Federal Reserve Bank of New York and vice chairman of the aforementioned FOMC before becoming Secretary of the Treasury.

Now we can return to the Great Depression. In November 1934, President Roosevelt appointed Marriner S. Eccles, a believer in the efficacy of fiscal policy before being a Keynesian was cool, to head the Fed's Board. Eccles persuaded the president to allow him to draft major legislation reforming the Federal Reserve. His draft bill, after some judicious compromises with by-then Senator Carter Glass, in August became the Banking Act of 1935. It reconstituted the FOMC, originally created by the Banking Act of 1933, into the modern structure of today. Eccles's bill would have lasting effects, including the book in your hands.

Founding the Modern Federal Open Market Committee and Pegging Interest Rates

The new legislation gave the Board of Governors in Washington a majority on the FOMC with seven votes, while the 12 Reserve banks were allotted only five votes at a time to be determined on a rotating basis. The head of each Reserve bank was to be called president rather than governor, a term to be reserved for the Board members, the head of which was renamed chairman (see Table 3.1). The Secretary of the Treasury and the Comptroller of the Currency were removed from the Board, with the remaining seven members serving staggered 14-year terms. Terms would expire on January 31 of each even-numbered year. The wording of the legislation also softened the emphasis on the real bills doctrine.

The new law required the FOMC to maintain records of its policymaking actions, and of the reasons they were taken, and to publish the records in its annual report to the Congress. Section 10, paragraph 10 of the Federal Reserve Act stated:

> The Board of Governors of the Federal Reserve System shall keep a complete record of the action taken by the Board and by the Federal Open Market Committee upon all questions of policy relating to open-market operations and shall record therein the votes taken in connection with the determination of open-market policies and the reasons underlying the action of the Board and the Committee in each instance. The Board shall . . . include in its annual report to the Congress . . . a copy of the records required to be kept under the provisions of this paragraph.

To comply with the act, the Board published in its *Annual Report* the Record of Policy Actions (or "Policy Record"). The Policy Record summarized each FOMC meeting. It was quite brief at first, comprising only a paragraph or two of the background or reasoning behind each Committee action, though it would grow over time. Figure 3.1 presents the timeline of past and present nomenclature regarding these records.[2]

Eccles had begun to issue a press release after each meeting. It announced the FOMC's decision, if any, and the main issues discussed.[3] Starting with its first meeting, the new FOMC additionally produced the "Minutes" that included initially in very summary form the comments of individual members. The FOMC, however, kept those records entirely internal. Apparently, the issue of retaining files of stenographic transcriptions of FOMC meetings was raised in the autumn of 1935.[4]

The wording of the legislation also softened the emphasis on the real bills doctrine. In his review of the first volume, Michael Bordo noted that "Meltzer (p. 575) points out the irony that once the Banking Act of 1935 made the Federal Reserve a full-fledged central bank with power centralized in Washington, conferring independence within the government, the Fed lost effective control to the Treasury for the next 16 years."[5] And this was the act that had removed the two Treasury officials, including its Secretary, from the Board! As Meltzer put it,

Table 3.1 Chairmen of the Board of Governors, August 23, 1935, through January 31, 1970

Chairman	*Date of Term*
Marriner S. Eccles	August 23, 1935–January 31, 1948
Thomas B. McCabe	April 15, 1948–March 31, 1951
William McChesney Martin	April 2, 1951–January 31, 1970

Source: Board of Governors of the Federal Reserve System, "Membership of the Board of Governors of the Federal Reserve System, 1913–Present." Retrieved from http://www.federalreserve.gov/aboutthefed/bios/board/boardmembership.htm.

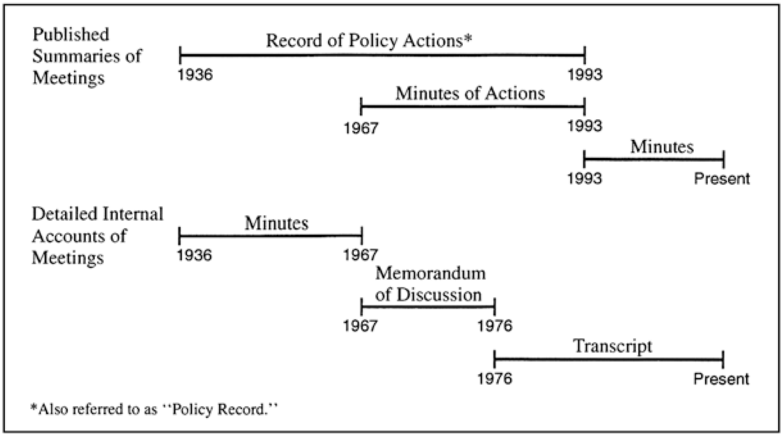

Figure 3.1 Reports from FOMC Meetings: Past and Present Nomenclature

Source: Deborah J. Danker and Matthew M. Luecke, "Background on FOMC Meeting Minutes," *The Federal Reserve Bulletin* 91, no. 2, Spring 2005, p. 176.

> The New Deal had a lasting effect on the organization of the Federal Reserve. The Banking Act of 1935 changed the locus of power in the Federal Reserve System by strengthening the role and powers of the (renamed) Board of Governors in Washington. Without ever reaching an explicit, collective judgment, Congress and the Roosevelt administration appear to have concluded that the policies pursued by the reserve banks, particularly New York, had encouraged speculation, leading to the stock market collapse, bank failures, and depression. Centralization of responsibility and authority in the Board, and measures to prevent security market speculation, were the chosen solutions.
>
> Subservience to the Treasury during the recovery, and in the war that followed, limited the effect of the legislation for a time. The Treasury took control of international economic policy. Both New York and the Board had a limited role. The Board gained nominal control of open market operations and the power to approve appointment of reserve bank presidents. The new powers changed the system's internal organization and operations in the 1930s. Major effects on policy had to wait for the post-war years.[6]

The Board did exert enough independence from the Treasury during the economic recovery later in the 1930s to take actions that the Roosevelt administration and Friedman and Schwartz both considered a serious policy blunder that helped spawn a renewed economic downturn.[7] In 1936–37 the Board exercised another power granted in the Banking Act of 1935 to double all the required reserve ratios on deposits in three steps. It had become concerned that the quite elevated levels of excess reserves were "superfluous" and potentially inflationary.

The first increase became effective in mid-August 1936. Secretary of the Treasury Henry Morgenthau was furious that he hadn't been informed of the action in advance. The second step, which occurred in early March 1937 and coincided with the start of a prolonged backup in the bond market, again infuriated Morgenthau.

The third step took effect in early May of that year. Despite the legislation passed by the Congress prior to that time to guard against recessionary forces, a very steep recession began in June 1937 on top of the already weak economy and lasted for a year.[8] Amity Shlaes offered this description:

> August had seen the worst drop in industrial production ever recorded. The Dow Jones Industrial Average dropped from its 190 level in August down to 114 on November 24 . . . In the period from September 15 to December 15, the jobs started to disappear, with unemployment moving back to 1931 levels. The Wall Street shock was spreading to Main Street.[9]

She recounted certain opinions within the Roosevelt administration on subsequent pages, "Eccles was in the doghouse, blamed for the new downturn, [Lauchlin] Curry later remembered."[10]

But Treasury bill rates already had started to ebb by the time of the third hike. Recent research has vindicated the Board by focusing on the much higher voluntary amounts of total reserves that banks wanted to hold as a precaution brought about by the uncertainties of the depression.[11] The hikes in required reserve ratios mainly just sopped up truly surplus excess reserves without binding banks at all by the higher requirements. The research has attributed renewed recession instead to the Treasury's sterilization of gold inflows from late 1936 to early 1938, enlarged federal taxes, starting with the undistributed profits tax in 1935, and reduced federal outlays.

During and after a tepid economic recovery in the late 1930s and early 1940s, the Fed kept interest rates low to aid the government's debt financing. The economic recovery strengthened after the Japanese raid on Pearl Harbor on December 7, 1941, that brought the United States into World War II as a combatant. Even so, Shlaes could pose the issue this way: "The big question about the American depression is not whether the war with Germany and Japan ended it. It is why the Depression lasted until that war." She goes on to provide a decidedly unconventional answer: "From 1929 to 1940, from Hoover to Roosevelt, government intervention helped to make the Depression Great."[12]

After the war began, as noted previously, the Fed fell completely under the thumb of the Treasury. The following April, the Fed established the "peg" of market yields on government securities in which the 90-day bill rate was set at 0.375 percent and that on the 25-year bond at 2.5 percent, with yields on intermediate maturity instruments in between. After the war ended in mid-August 1945, the Fed had considerable difficulty freeing itself from Treasury control. President Truman refused to reappoint Marriner Eccles as chairman when his third chairmanship expired in early February 1948, preferring the more compliant Thomas B. McCabe. Eccles remained on the Board, and later played an important role in resisting underhanded administration efforts to retain the Treasury's domination. After a meeting in the White House between President Truman and the FOMC on January 31, 1951, the administration falsely asserted in a press release and subsequent letter that the Committee had committed to support the current low bond rate. Eccles alone was exasperated enough to release a statement along with the Minutes of the meeting that clearly refuted the administration's claim.[13]

The Fed and the Treasury Reaching an Accord and the Unfolding of the Martin Era

Allan Sproul, president of the New York Reserve Bank, earlier had pushed internally for Fed independence. An external voice, Senator Paul H. Douglas (Democrat, Illinois) also had been supportive of the Fed's autonomy. Furthermore, the outbreak of the Korean War had raised the specter of inflation, which a central bank having independent power would be better able to address. In March 1951 the Federal Reserve and the Treasury finally signed an accord giving the Fed its formal independence, though it took a couple of years to establish it fully in practice.

After the accord, the Fed served as a counterweight for more than a decade to the expansionist Keynesian vision by maintaining a lonely vigil in interpreting the ambiguous phrase "maximum . . . purchasing power" in the Employment Act of 1946 to mean stable prices. William McChesney Martin Jr. (1906–1998), who replaced McCabe and served as Board chairman from April 1951 to January 1970, had an instinctive distaste for inflation. He always believed that, if anything, high inflation over time *caused* higher unemployment. He had been the president of the New York Stock Exchange and chairman of the Export-Import Bank before his tour of duty with the Treasury Department, where he was its main negotiator in the talks leading up to the accord.

He was a prototype of the genus that Keynes referred to above of "practical men." "When he was in a particularly self-deprecatory mood, he would describe himself as 'just a bond man,' referring to his thirteen years on Wall Street."[14] He abjured economic analysis, instead soliciting anecdotal evidence and coining colorful metaphors. For example, he said that the purpose of Fed policy "is to lean against the winds of deflation or inflation, whichever way they are blowing"[15] and to "take away the punchbowl just as the party got going."[16]

Under his chairmanship, FOMC meetings were marked by a short-term focus and the absence of a specific analytic framework. He claimed "central banking remains an art rather than a science."[17] In 1966 he thus decried the appointment of a fourth economist to the Federal Reserve Board, opposing the choice of Andrew Brimmer as governor for this reason.[18] Indeed, Martin's attitude was reminiscent of Edmund Burke's when contemplating the invasion by the mob of Marie Antoinette's bedchamber during the French Revolution: "[T]he age of chivalry is gone. That of sophisters, economists, and calculators has succeeded; and the glory of Europe is extinguished forever."[19] Martin was deeply suspicious of economists' inclination to rely on the measurement of economic forces that he thought only sound judgment after detailed observation could assess, and he doubted the validity of their sweeping policy recommendations grounded on dubious theoretical or statistical reasoning. "Martin often began a conversation by saying: 'I am not an economist.'"[20] Given the disastrous influence that adopting the flawed advice of economists would prove to have on monetary policy to come, this comment might seem to represent the height of hubris. But actually he was a modest man, so that clearly was not his motivation.

> His observation about Fed independence was justifiably memorable: The Fed, then under chairman William McChesney Martin Jr., told Congress in 1957, "should be independent—not independent of government, but independent within the structure

> of government." That meant, he said, having the freedom necessary to decide how best to meet the goals of national economic policy.[21]

He typically did not try to impose his own views on the Committee. Stephen Axilrod, a 34-year employee of the Board who ended up the staff director for monetary and financial policy, described his approach:

> From my observations at FOMC and Board meetings, he never appeared to alienate his colleagues. It was something of a joke that at FOMC meetings, after everyone had expressed their views in the preliminary discussion of policy, he would always say, "Well, we are not far apart," no matter how far apart the participants in fact were. But the "joke" of course had a point. It conveyed that each counted as much as anyone else; and even if you were in fact far apart from the rest, the distance could not be too far because you really were a thoughtful and well meaning-member of the group.
>
> Perhaps I am reading too much into Martin's use of the phrase, but I have come to believe that he deliberately, not just habitually, employed it to help the group feel close together and thus as responsive to each other as possible. It looked as if he strove for something like the cohesiveness required in the crew of a large sailboat if the helmsman's efforts were to have the best chance of succeeding.[22]

Under Chairman Martin, the central bank continued to pursue an anti-inflationary policy during the first half of the 1960s before accommodating President Johnson's guns and butter policy in the second half of the decade. Chairman Martin's approach kept the average rate of inflation down, although both inflation and economic activity exhibited some variability.[23] In the presidential campaign of 1960, Senator John F. Kennedy argued that the restrictive monetary as well as fiscal policy had prompted three recessions in eight years and thus had kept average unemployment too high and the economy too often below its potential. He specifically criticized Martin's leadership of a "tight money" Fed.[24] He promised "to get the country moving again," which, especially given the prevailing woes of the third recession, proved to be a compelling message to the electorate. In March of that election year Arthur Burns had warned Richard Nixon about the impending economic downturn, but Nixon's efforts to get the Eisenhower administration to encourage more stimulation were in vain. As historian Wyatt Wells put it in his biography of Burns, "The defeated candidate would not forget the recession, which he blamed for his defeat, nor would he forget Burns."[25]

Walter Heller, a liberal economist, became the chairman of President Kennedy's Council of Economic Advisers. In 1961 Heller proposed renaming the committee composed of the president and the Treasury secretary, the chairmen of the Council of Economic Advisers and the Fed, and the director of the Bureau of the Budget as the "Quadriad." It would have confined the Fed's independence if Martin had not resisted. As Bremner reported, "Heller and the CEA were often frustrated that they could not force Martin to actively support the CEA's plan to raise short-term interest rates (to discourage the outflow of short-term funds) and simultaneously lower long-term interest rates (to promote economic growth)."[26] This policy became known as "operation nudge" internally or operation twist externally, after a Chubby Checker song. Although questions have been raised about whether Treasury debt management didn't work at cross-purposes, research has suggested that long rates were affected by at most 15 basis points (that is, 0.15 percentage point).[27]

Heller touted the "New Economics," according to which the business cycle could be conquered through the application of the fundamental principles of macroeconomic science that already were familiar to college freshman. Heller did much to publicize that point of view, as did the other members of the CEA, James Tobin and Arthur Okun. Paul Samuelson and Robert Solow already had written an influential article providing intellectual support. It asserted that governmental policy could exploit a long-run tradeoff between unemployment and inflation in which more of one meant less of the other. They claimed that a "nonperfectionist's goal" for unemployment was 3 percent, which was unprecedented in peacetime.[28] Although they noted some caveats, their views certainly were taken to mean that lower unemployment could be attained permanently at the minor cost of somewhat higher, though not ever-rising, inflation. Under the macroeconomic policies implied by the Keynesian approach, unemployment was driven lower all right. Indeed, a business expansion began in 1961 that lasted for the rest of the decade, though those developments were increasingly marred in the second half by what proved to be the doctrine's Achilles heel—ever mounting inflation.

Lyndon Johnson assumed control of the executive branch after President Kennedy's assassination in November 1963. He was an old-fashioned populist with a congenital hatred of high interest rates. His Democratic colleagues in the Congress shared that sentiment, including Wright Patman. John William Wright Patman (1893–1976) was the son of a poor sharecropper in rural Northeast Texas. After graduating from high school as valedictorian in 1912, he earned a law degree at Cumberland University in Lebanon, Tennessee in one year without any other college credits, again graduating first in his class. He was elected to the House of Representatives as a Democrat from Texas in 1928, where his work was all consuming. He went to the office seven days a week for ten hours a day. In his biography, historian Nancy Beck Young wrote:

> Patman combined two different political traditions—populism and liberalism . . . Patman's liberalism was a liberalism of the past and often centered on criticism of the Federal Reserve, which Patman blamed for the credit problems of the South and the West. Specifically he believed that the Fed operated in collusion with Wall Street bankers to charge artificially high interest rates to the rest of American consumers. Sam Rayburn told a new member of Congress that Patman was "a smart man, but if he got shipwrecked on a lonely island with Liz Taylor, Liz in the nude, he'd say, 'Ms. Taylor, do you know the workings of the Federal Reserve Board?'"[29]

Although the House Committee on Banking and Currency remained dormant in the 1950s and early 1960s, things changed after Patman became its chairman in 1963. In the next year he held hearings on his broad-based anti-Fed draft legislation. As the initial hearings wore on into their fifth month, Martin finally had to get President Johnson to intervene to help stop them.[30] Patman next introduced a series of bills in the mid-1960s "to direct interest rate policy, but these efforts did not galvanize attention as economic policy was largely perceived to be in the domain of fiscal actions."[31]

Patman's battles with Martin became the stuff of legend. Their tiffs occasionally were animated; Representative Henry Reuss once heard, "'You're unconstitutional,' Patman was shouting, a familiar charge based on his belief that Congress, not the

Fed, had the constitutional power to 'coin money, regulate the value thereof.'"[32] But their dialogue never became personal, since both Patman and Martin always remained cordial. Patman did deeply resent the activities of Reserve bank directors in lobbying to defeat his proposed legislation. For example, he blamed such pressure for subverting his efforts to have the government own the Fed, or impose Congressional appropriations to deprive the Fed of its independent source of funding, or have the Fed audited by the General Accounting Office (now Government Accountability Office) (GAO).

But his own actions bore some responsibility for alienating Democrats as well as Republicans on the Banking Committee, as he ran that committee like a personal fiefdom. Also, some of Patman's colleagues were turned off by his demagogic rhetoric. In particular, he never relented in his verbal attacks on the Fed. For example, in April 1968 Patman derided "Old Doc Martin's handy dandy elixir for all complaints known to man or beast: A raise in the discount rate." He then contemplated impeachment proceedings against Martin.[33]

The ambiguity of the FOMC's operating intentions, which were never very explicit, irritated Patman, judging by his responses. A part of the Policy Record all along had transmitted the Committee's instructions; in the 1950s the recipient came to be the Federal Reserve Bank of New York. In March 1953, the Policy Record used the phrase "directive," as opposed to "direction," to describe the primary monetary policy decision voted on by the Committee. The phrase stuck, and has been used ever since. The last paragraph of the directive, called the "operational paragraph," gave the FOMC's operating objectives for open market operations to be conducted by the Trading Desk at the New York Fed.

In its operating instructions, the FOMC had made a transition from the "color, tone, and feel of the money market" for short-term financial instruments in the 1950s to "money market conditions" as the 1960s progressed. Those conditions were thought of mainly, but not exclusively, as some combination of the federal funds rate, the 3-month Treasury bill rate, and net borrowed reserves, which are equal to the reserves borrowed by commercial banks from Reserve banks less excess reserves. The FOMC inserted a "proviso" in the operational paragraph of the directive to the Trading Desk in the Policy Record in April 1966 to give some scope for the behavior of a total bank deposits proxy for bank credit to affect money market conditions between its meetings. But the proviso had very little practical effect.

Despite the evolution toward more specificity about the Committee's intentions in the Policy Records in the 1960s, the FOMC continued to refrain from simply aiming at the federal funds rate. Instead, it referred publicly to more or less "firming," "restraint," or "easing" in money market conditions. The Fed's vague operating procedures engendered increasing criticism from populist, liberal, and monetarist economists in the 1960s, which spilled over into the political sphere. The lack of specificity about the operating target generated not only external criticism but also reoccurring internal complaints about the Committee's lack of explicit directions to the Trading Desk. Internally, it still importantly indexed its stance by an operating objective for free reserves, that is, the negative of net borrowed reserves or excess reserves less borrowed reserves. In Karl Brunner and Allan Meltzer's phrase of 1964, the Fed exhibited an "attachment" to the concept of free reserves.[34] Meltzer well put the Fed's dominant motivations: "Tradition or history is one reason for relying mainly on free reserves or borrowing as a policy target instead of an interest rate. No less important was concern that an interest rate target invited pressure from Congressional populists, especially Congressman Wright Patman, to keep interest rates low."[35] To me as well, the ambiguity that Chairman Martin fostered about the Fed's operating procedures must have stemmed in large part from his desire to portray a vague picture to the public about its specific techniques, thereby forestalling criticism and hence political pressure.[36]

In addition to the Fed's ambiguity, Congressman Patman also strenuously opposed its secrecy. The internal Minutes of FOMC meetings, which gave a comprehensive record of the attendance, discussions, and decisions at every FOMC meeting, became increasingly detailed over the years, notably during the 1960s. They were not meant to be released to the public, in contrast to the Policy Record, and thus were kept internal until 1964. This policy occasioned its share of criticism, particularly from Patman. In July 1961 his promise on behalf of the Joint Economic Committee to keep the FOMC's Minutes for 1960 confidential induced the Board to grant him access to them.[37] The Board regretted that decision in August when extracts of a summary of the Minutes that the JEC had prepared appeared in the *New York Times*. That leak surely left a bad taste in its mouth that influenced future Board decisions about disclosure.

Although the FOMC in general had kept the Minutes confidential, maintaining them for internal use alone, in 1964, the FOMC in effect decided to make the historical Minutes available to the public by transferring those for 1936 to 1960 to the National Archives. It announced that it had done so as part of the celebration of the 50-year anniversary of the founding of the Federal Reserve. But the agitation surrounding the publication in the previous year of *A Monetary History of the United States: 1867–1960* by Milton Friedman and Anna Schwartz no doubt contributed. The coauthors, who complained bitterly that the Fed had denied them access to the confidential Minutes, portrayed the institution as extremely secretive and its limited public statements as self-serving and misleading. This characterization only magnified the heavy pressure from Representative Patman, who had just become chairman of the House Banking Committee, for the Fed to disclose all its records promptly. Furthermore, the FOMC's subsequent actions suggest that the members considered the Friedman and Schwartz portrayal of the historical record to have been unduly critical and believed that the release of the actual Minutes would help to set the record straight. After transmitting the 1961 and 1962–1965 Minutes to the National Archives in 1967 and 1970, respectively, the Board decided to release future versions on a regular schedule after about five years.

The Policy Record by then had come to contain a summary of the economic situation as perceived by the Fed at the time of each FOMC meeting and of the highpoints of the discussion of the meeting itself, though without mentioning any names. By the mid-1960s these records had expanded to an average of about five pages per meeting. For decades, though representing the official statement of policymaking, the Policy Record continued to be published only once a year.

The enactment of the Freedom of Information Act in 1966 brought the issue of information release to a head. The FOMC insisted that any change in the release of information must preserve the effectiveness of the policy discussions and the operations implementing monetary policy. Even so, the Committee in June 1967 concluded that it could release the Policy Record in a more timely fashion, specifically, after a lapse of only 90 days. It also began to be published in *The Federal Reserve Bulletin*, issued monthly. At the same time, as was shown earlier in Figure 3.1, the FOMC decided to prepare a separate document, called the "Minutes of Actions." It could be released to the public in response to FOIA requests—and also was made available in the Board's Freedom of Information Office—on the same schedule as the Policy Record was released to the public. The Minutes of Actions included summaries of all actions (both policy actions and non-policy actions, such as procedural or organizational votes) together with the list of attendees. The document did not state the reasoning behind the actions or give any indication of the discussion at the meeting, which instead was the province of the Policy Record as well as of another newly named document, the Memorandum of Discussion.

The content of the previous, now discontinued, Minutes was divided between the Minutes of Actions and the Memorandum of Discussion. Much like the previous Minutes, the detailed Memorandum of Discussion represented a narrative account of every point made by each speaker, who was identified by name. It was a thorough synopsis, despite being heavily edited and written in the third person. The FOMC's intent in creating the Memorandum of Discussion evidently was to avoid making the expansive version in the Minutes publicly available before five years had elapsed (even then with appropriate deletions, called redactions, of extremely sensitive material dealing with identifiable individuals, corporations, and foreign governments or central banks). The accuracy of the Memorandum of Discussion was ensured by careful note taking. When all the earlier Minutes had been the distributed to the public after five years, the Memoranda of Discussion also came to be released to the public after five years.

Returning to the conduct of monetary policy, from the start President Johnson aggressively pursued economic stimulus. In late February 1964 he signed into law the tax cut that Kennedy had advocated. A year later the administration started to propose expanding domestic spending with the Great Society legislation. The president also escalated US involvement in Vietnam but kept its true cost hidden even from his advisers. The unemployment rate dropped to 4 percent by late 1965 and was fated to stay at or below that rate for another four years. The change in December-to-December CPI prices rose to nearly 2 percent. Little did anyone know at the time, but that figure was headed higher and would not be improved on for another 20 years.

When the Board was contemplating a discount rate increase to counter the emerging inflationary pressures in late 1965, Gardner Ackley, then the Chairman of the Council of Economic Advisers, suggested to President Johnson in a memo dated November 29 that a not particularly sympathetic Board member named Dewey Daane could be lobbied to vote no, which would defeat the initiative.[38] That unusual effort was tried but failed, and the Board raised the discount rate by 1/2 percentage point on December 3. Through Ackley and Henry "Joe" Fowler, his Treasury secretary, "Johnson had advised Martin to delay the increase," as Martin biographer Robert P. Bremner wrote,

> and his instructions had been rejected. Few people ignored Lyndon Johnson instructions, and he was furious when he heard of the Fed's move. He had growled at Fowler over the telephone: "Those marble tower boys. Joe, you find a tough guy to head the Reserve. If Martin resigns, it won't wreck the country."[39]

President Johnson summoned Chairman Martin to his Texas ranch to complain in no uncertain terms. In "the Fed's finest hour," Martin resisted that pressure and refused to rescind the increase in the discount rate. But the pressure had its effect; in the words of Board member Sherman Maisel, the episode surrounding the discount rate action, although "one of the more dramatic incidents in Federal Reserve history," more importantly "marked a true watershed: It was the end of the age of innocence; the Fed would not be the same again."[40]

The Fed exercised more restraint in 1966 to resist rising inflation, leading to a "credit crunch," partly brought on by ceilings on the deposit interest rates that commercial banks and thrift institutions could offer. The diversion of funds from deposits into the open market meant that those depository institutions could not grant mortgages, so housing was especially impaired by the monetary stringency, which became politically rancorous. Economic growth softened considerably in the "mini-recession" of 1967. In response, Fed policy turned more expansionary again. The experience of deposit rate ceilings in concentrating the impact of monetary restraint on housing and thus lessening the possibility that monetary policy could be restrictive enough to retard inflation would resound in the years to come.

The FOMC's overly simulative policy stance over the rest of the decade was to become more obvious as time passed. The Fed unfortunately continued its "coordination" with the administration, which in practice meant considerable pressure on the Fed to keep the funds rate down. The Fed also retained its practice—known as "even keel"—of keeping market interest rates stable for more than a week before and after the Treasury's issuance of longer-term securities. But the increasing federal deficits meant Fed-tightening opportunities were reduced still further and made interest rates even more inertial. So did Chairman Martin's management style, with its emphasis on finding consensus among FOMC members before policy could be altered.[41] President Johnson's appointments to the Board in any event did not always see eye to eye with the chairman, who lost further influence over time. For all these reasons Fed policy would not be restrictive enough in the next few years and inflation would continue to build as unemployment fell further.

President Johnson belatedly called for a tax surcharge in his State of the Union address in early 1967. But the political stars were not yet aligned favorably; during much of the second half of the year Martin adopted the risky strategy of refusing to push to tighten monetary policy in order to strengthen the case for fiscal restraint instead, thereby allowing inflation to gain a firmer foothold.[42] Even so, the tax surcharge was not enacted until June 1968, when it was combined with slightly larger spending cuts than the administration had advocated.

Out of concern about "fiscal overkill," the Committee staff projected an economic slowdown absent Fed ease. Consistent with its virtual commitment to the administration but apparently to its subsequent chagrin given a policy reversal, the Board eased in late August through a cut of 1/4 percentage point in the discount rate. Nonetheless, as monetarists had predicted, the impact of temporary fiscal restraint was miniscule and the economy lurched forward. Unemployment dropped below a 3-1/2 percent rate, and annual average consumer inflation reached 4-1/4 percent that year. Martin admitted the policy mistake when he testified, "In retrospect, I believe that the Federal Reserve was overly hasty last summer in expecting an immediate impact from fiscal restraint."[43]

In December the Board reversed the earlier discount rate reduction, after Richard Nixon already had won the election of 1968 amid the unrest that was an outgrowth of the Vietnam War and the flowering of the counter culture. The president-elect met with Chairman Martin that month in New York City to offer him the position as Secretary of the Treasury, so Nixon could make Arthur Burns the Board's chairman upon assuming the presidency in January 1969. Martin respectfully declined, expressing his intention to serve out his term as governor, which did not expire until the end of January 1970. Former Governor Brimmer characterized his decision as a move to "defend the integrity of the System against encroachment from the White House."[44]

In reaction to the upsurge of inflation, the Fed tightened its policy a lot more in the first half of 1969. The Board further hiked the discount rate in April from 5.5 to 6 percent. The nominal funds rate increased by about 3 percentage points to the area around 9 percent by mid-year, where funds traded for the rest of Martin's tenure. The rise in inflation, though, muted the increase in the real, inflation-adjusted, federal funds rate, which still more than doubled over that interval to around 4 percent from a start below 2 percent. (The real federal funds rate is measured by subtracting the percent change in the GNP deflator from four quarters earlier from the nominal funds rate.) Although some dissenting Keynesian members of the FOMC as well as the Committee's staff counseled a relenting of monetary restriction during the second half of the year, Martin held a majority together favoring continued restraint. Private spending responded to the stringency, as a peak in the business cycle occurred in December 1969. Although the economy entered a recession just at the conclusion of Martin's chairmanship in January 1970, by then consumer inflation had escalated to more than 6 percent over the last 12 months of his term.

Powerful inflationary forces thus had emerged as Martin's years as chairman drew to a close, despite his instinctive distaste for inflation. This juxtaposition surely must rank among the paradoxes of history. Although Martin evidently had regrets, the "New Economics" certainly finished the decade in tatters, done in by an inflation that in its wake brought the policy resistance that caused recession. The inflationary pressures stemmed in part from political forces, which made restraining aggregate demand through firmer interest rates and higher taxes and/or lower spending hard. But bad economics also contributed, as public policy had been encouraged by Keynesian ideas to keep monetary and fiscal policies overly simulative in order to push the unemployment rate much too low, which had created the acceleration of prices in the first place. In the 1930s depression had proven very fertile for the Keynesian vision to spread and for a time to prosper. But in another irony of history, it was the very fears of even temporary economic weakness impressed upon policymakers' minds by the experience of the Great Depression that became *too* influential. Also indelibly impressed was the very success of expansionary fiscal and monetary policies in stimulating economic activity in the 1960s that led to the inflation that spelled the end of Keynesianism, at least for a while.

The next chapter will regale the reader with a synopsis of the developments after Chairman Arthur Burns took control of the policy reins in early 1970. The atmosphere of ascendant inflation worsened appreciably in the 1970s, in part because incipient policy firmness again aroused political resistance before it could reach fruition. Inflation attained crisis proportions late in the decade under Chairman G.

William Miller. Such an environment became hospitable to the monetarist vision, partly because of the consequences of its previous dismissal. As we shall see, "practical monetarism" finally triumphed as the intellectual foundation for a forceful policy for three years starting late in the decade under Chairman Paul Volcker. But as the next chapter also will recount, history didn't stop there; rather, it inexorably moved on. After the FOMC adopted a new approach to designing and implementing its policy in 1982, a quarter century of conquered inflation ensued, mostly overseen by Chairman Greenspan. The Fed attained price stability and moderated business fluctuations. But then a housing bubble set in under the radar. Its bursting caused the worst financial disaster since the Great Depression and the steepest economic downturn in post-war American history. Keynesian thinking was revived by President Obama before a concern about fiscal rectitude reemerged. Chairman Ben Bernanke's FOMCs adopted unusual policies toward lending and open market operations. The Fed completed its first century by playing major new roles in all these dramas.

CHAPTER 4

Suffering Mid-Life Crises: Confronting Severe Inflation and Financial Meltdown in Adulthood—February 1970–January 2014

The central bank is always caught up in, and reacting to, the swirl of powerful historical currents. But Fed actions in turn also have importantly influenced the direction of those forces, both for good and ill. It is a crucial actor in the saga of American history, but it plays a part that, owing to its complexity and technicality, is underappreciated not only by the media in the noisy onrush of daily events but also even by historians, who have the luxury of quiet reflection on broad developments. This chapter's glimpse of the main cast of characters and patterns of policy design, implementation, and communication since the era of Chairman Martin, which ended in January 1970, makes an effort to identify the crucial elements. The names of the chairmen of the Board of Governors and of the House and Senate Banking Committees since early 1970 appear in Table 4.1. The dates of the major turning points in the FOMC's design, implementation, and communication of policy are presented in Tables 4.2, 4.3, and 4.4. Back in junior high school I remember another student asserting what was to become a cliché later in my education: History is just a collection of names and dates. Fortunately, that student's observation was in error, because if it actually were the case, then all the subsequent chapters that put analytical meat on these bones in the Bernanke era would be superfluous. Still, the tables do allow the chapter to close with a narrative covering the Fed's influence since early 1970 that can be brief.

Identifying Crucial Names in Policymaking

The reader now can scan the cast of characters in the drama to come in later discussions by referring to Table 4.1, where the top guns at the Fed and at the two relevant congressional committees appear. We'll see later that while some of the names represent only bit players in our unfolding saga, others will assume leading roles. The

Table 4.1 Chairmen of the FOMC and of the House and Senate Banking Committees, 1970–2013

Year (Congress)	*FOMC*	*House Banking Committee*[1]	*Senate Committee on Banking, Housing and Urban Affairs*
1970 (91st)	Arthur Burns	Wright Patman (D-Tex.)	John Sparkman (D-Ala.)
1975 (94th)	”	Henry Reuss (D-Wis.)	William Proxmire (D-Wis.)
1978 (95th)	G. William Miller	”	”
1979 (96th)	Paul Volcker	”	”
1981 (97th)	”	Fernand St Germain (D-R.I.)	Jake Garn (R-Utah)
1987 (100th)	Alan Greenspan	”	William Proxmire (D-Wis.)
1989 (101st)	”	Henry Gonzalez (D-Tex.)	Donald Riegle (D-Mich.)
1995 (104th)	”	James Leach (R-Iowa)	Alfonse D’Amato (R-N.Y.)
1999 (106th)	”	”	Phil Gramm (R-Tex.)
2001 (107th)	”	Michael Oxley (R-Ohio)	Paul Sarbanes (D-Md.)[2] Phil Gramm (R-Tex.) Paul Sarbanes (D-Md.)
2003 (108th)	”	”	Richard Shelby (R-Ala.)
2007 (110th)	Ben Bernanke	Barney Frank (D-Mass)	Chris Dodd (D-Conn)
2011 (112th)	”	Spencer Bachus (R-Ala.)	Tim Johnson (D-SD)
2013 (113th)	”	Jeb Hensarling (R-Tex.)	”

Note: Entries appear for each year in which the chairmanship of any of the three panels changed.

1. In the 107th Congress, the House Banking Committee became the Committee on Financial Services; the earlier names of the committee, beginning with the 91st Congress, are as follows:
91st–93rd: Banking and Currency
94th: Banking, Currency and Housing
95th–103rd: Banking, Finance and Urban Affairs
104th–106th: Banking and Financial Services.

2. At the convening of the 107th Congress, on January 3, 2001, the membership of the Senate was evenly divided by party, but the Democrats controlled the Senate because the Democratic president and vice president were still in office (and the latter, as president of the Senate, was able to break tie votes in that chamber); at that time the Democrats named Paul Sarbanes to head the banking committee. On January 20, 2001, when the Republican President and Vice President were sworn in, control of the Senate shifted to the Republicans, who named Phil Gramm to head the committee. On June 6, 2001, Senator James Jeffords, of Vermont, changed his affiliation from Republican to Independent and voted with the Democratic Caucus; the Democrats thus regained the majority in the Senate and again named Senator Sarbanes to head the committee.

Source: David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, Table 1, p. 5.

congressional personalities will be seen as neither all bad nor all good. Similarly, no Fed official will be portrayed as an unvarnished hero or villain, though in my review of their performances, Paul Volcker will approach the former category, with Alan Greenspan running a close second until late in his stewardship. Ben Bernanke warrants a mixed review: Yes, his leadership unquestionably and importantly did help to save the world during the financial crisis, and some of his actions before and after were laudable as well, but some actions will be questioned. San Francisco Fed President and then-Board Vice Chair Janet Yellen certainly will share in many of these successes but will bear some responsibility for a few of the dubious initiatives as well.

Identifying Crucial Dates in Policy Design

The first entry of Table 4.2 describes Fed's proclivity in the 1970s to "look at everything" eclectically in designing monetary policy. But the Fed acted as if it mainly relied on forecasts of an output or unemployment gap based an implicit objective for the "potential" or "natural" level and of the gap of inflation relative to a low implicit goal. That approach came a cropper as the Fed grossly exaggerated the economy's ability to employ workers without creating runaway inflation. Also, in gradually adjusting its policy stance, the Fed had a tendency to swing the funds rate back and forth in "stop/

Table 4.2 Major Turning Points in Monetary Policy Design, 1970–2013

Turning Points
1. Designing Policy Eclectically Looking Forward but Pushing Average Unemployment Too Low with a Gradual Stop/Go Policy Stance and Inducing Rising Inflation February 1970–September 1979
2. Controlling Current M1 Growth with Little Gradualism and Fostering Disinflation October 1979–September 1982
3. Designing Eclectically Looking Backward with No Gradualism and Holding the Line on Inflation October 1982–August 1987
4. Designing Eclectically, Preemptively, Gradually, and Steadying the Economy while Disinflating More August 1987–July 1996
5. Designing Eclectically, Less Preemptively, Gradually, and Steadying the Economy at Price Stability August 1996–February 2008
6. Handling the Financial Meltdown with Unconventional Lending Policies March 2008–October 2008
7. Confronting Economic Weakness and Disinflation by Making Large-Scale Purchases of Securities and Extending Their Average Maturity November 2008–December 2013

go" fashion as economic, financial, and monetary conditions changed. On average policy stimulation was excessive and the unemployment rate was pushed too low. Combined in mid-decade with the end of wage and price controls as well as late in the decade with hikes in food and energy prices, inflation climbed to dizzying heights.

The Fed's abrupt conversion to a focus on monetary control is represented in the second line. That era was initiated at a dramatic meeting of the FOMC on Saturday, October 6, 1979. This event turned into a three-year episode of fighting the high inflation via controlling current medium-term money growth. (Money is the outstanding stock held by the public of currency and readily accessible deposits at banks.) The Fed tried to restrain the expansion of the narrow measure of transactions balances, as captured by the M1 measure of the money stock made up only of the public's holdings of currency plus checking accounts, that is, the balances that can facilitate purchases directly. Fed policy had little gradualism. In fact, the trend in M1 growth did slow, and inflation started to fall, an outcome in Table 4.2 called "disinflation."

But unstable demands for money and finally a regulatory fillip to the amount demanded, along with severe economic weakness that ultimately brought the civilian unemployment rate to 10.8 percent, caused the FOMC in early October 1982 to move to the third line. After having boosted the target for M1 growth three months earlier, which already had lowered the funds rate a lot, it finally dropped M1 targeting altogether and again became more eclectic in designing policy. In looking backward, it now acted as if it focused both on realized output growth and inflation relative to implicit objectives while eschewing any policy gradualism. Although economic activity regained traction, the Fed hung tough enough for inflation to recede further.

In the late 1980s the Fed continued to design its policy eclectically (see Table 4.2, line four). But it also reintroduced more gradual adjustments to the policy setting and a reliance on the outlook for both inflation and resource use compared with implicit objectives. A mild recession marked the early 1990s, but core inflation excluding food and energy prices kept ebbing through mid-1996.

Thereafter, the Fed faced a rapid-fire succession of unexpected crises (see Table 4.2, line five), so it had to design its policy less preemptively, though still focusing on gaps in both resource use and inflation with a continued gradual adjustment of its policy setting. The Fed successfully stabilized the rate of core inflation at reasonable price stability. Over the entire score of years described by this line, stable prices seemed to help steady the economy.

The smooth economic sailing was not destined to last. Some shots across the economy's bow that signaled underlying financial stress sounded in 2007, particularly the start of the collapse of the subprime mortgage market. But the date in line six on Table 4.2 for the inception of the financial meltdown is March 16, 2008, which marked the forced sale of Bear Stearns, an intermediate-sized investment bank, to JPMorgan Chase, a large commercial and clearing bank. That arranged merger involved a guarantee by the Fed of $29 billion of Bear Stearns's shaky real-estate-related securities. In September 2008 all hell broke loose when no private buyer emerged for Lehman Brothers, a larger investment bank, which consequently went belly up. The central bank initially responded to the ensuing financial crisis by making a variety of unusual emergency loans. Many of these loans required invoking the part of the Federal Reserve Act that had lain dormant since the 1930s, allowing such lending to nonfinancial entities in "unusual and exigent" circumstances. The Fed also issued nearly $585 billion swaps of dollars for foreign currencies with central banks abroad. The emergency lending fell to zero as the financial crisis abated.

But confronted by continuing economic weakness, the Fed already had initiated other unorthodox measures starting in November 2008 (see Table 4.2, line seven). Through mid-2011, it bought $2.3 trillion of agency-guaranteed mortgage-backed securities, agency debt, and longer-term Treasury securities. Those operations, popularly called "quantitative easing," ballooned the Fed's balance sheet in an unprecedented manner. Then from September 2011 to December 2012 it lengthened the average maturity of its portfolio with a procedure called "operation twist" outside the Fed. Three months before that program expired, the Fed adopted open-ended purchases of MBS, and in late-2012 it elected to continue buying long-term Treasuries, for a monthly total of $85 billion. A year later it decided to "taper" its buying despite disinflation that had lowered 12-month core consumer price inflation to almost half its newly explicit 2 percent goal.

Identifying Crucial Dates in Policy Implementation

In the 1970s, as indicated in line one on Table 4.3, the Fed generally geared its daily operations to affect the interest rate charged overnight by one bank to another on the loans of reserves. (As a reminder, reserves are the funds a bank holds at the Federal Reserve, either in the form of cash or in its deposit account.) Interbank loans of reserves are called federal funds. That interest rate is naturally called the federal funds rate, which within the first year of the episode became the Fed's internal operating objective. By adding or draining the overall amount of reserves through its operations in the open market, the Fed can closely control the day-to-day federal funds rate.

In line two on Table 4.3, the FOMC switched in October 1979 to operating on the reserve balances that were supplied by the Trading Desk at the New York Reserve Bank—called nonborrowed reserves since they weren't borrowed by banks from the Federal Reserve. The public's desire to hold money as bank deposits along with the regulations requiring minimum ratios of reserves would establish the reserves that banks had to hold. Those required reserves plus banks' desire for a little excess in turn would interact with the operating path for nonborrowed reserves to determine the amount of borrowed reserves, which were lent to banks only temporarily at the

Table 4.3 Major Turning Points in Monetary Policy Implementation, 1970–2013

Turning Points
1. Operating in Effect on the Federal Funds Rate February 1970–September 1979
2. Operating on Nonborrowed Reserves October 1979–September 1982
3. Operating on Borrowed Reserves October 1982–Thanksgiving 1989
4. Operating on the Federal Funds Rate Thanksgiving 1989–December 2013

Reserve bank's so-called discount window. The charge to the borrowing bank was called the discount rate. The interbank market then automatically set the funds rate.

The Fed next switched its operating target from nonborrowed reserves to borrowed reserves in October 1982 (see Table 4.3, line three). When the FOMC forced up the level of borrowing, banks had to bid more aggressively for funds from other banks, so the gap of the federal funds rate over the discount rate tended to widen as well. Although the Reserve banks' directors proposed any change in the discount rate, it was the Board in Washington that disposed. The Fed had a good idea of what funds rate would result given the discount rate and the amount of borrowing.

Another shift in implementation occurred in 1989, this time from borrowed reserves as the Fed's operational objective all the way back to the federal funds rate. Line four on Table 4.3 refers to the episode just before Thanksgiving in which market participants misinterpreted a technical operation of the Trading Desk to add reserves as instead signaling a policy easing. From then on, all the Trading Desk's operations were chosen to signal accurately the FOMC's desired level of the federal funds rate. In short, the FOMC has relied on targeting the federal funds rate in its operations during the last quarter century. In December 2008 the FOMC lowered the funds rate to its minimal lower bound. As noted in the previous table, earlier that year the Fed had begun to supplement the funds-rate approach with unconventional operations.

Identifying Crucial Dates in Policy Communication

The Fed continued its practice of disclosing a detailed paraphrase of the content of its meetings, called the Memorandum of Discussion, after five years, as described in line one on Table 4.4. Also referenced in that line, it continued to release 90 days after the FOMC's monthly meetings a brief summary document with a vague depiction of its decision to impart more or less "firming," "restraint," or "easing" to "money market conditions"—in effect a trading area for the federal funds rate. The Fed made a small step in the direction of greater transparency in January 1974 when the body of that document began to indicate the specifications of the permissible range for the funds rate and the two-month growth rate tolerance ranges for two measures of money. Thus, after a three-month delay, outsiders could learn the specific ranges of the two operating variables through virtually the rest of the decade. The Board soon reacted to a Freedom of Information request by David Merrill in March 1975 by halving the delay to around 45 days.

But the FOMC in May 1976 made the controversial decision to discontinue the Memoranda of Discussion as of mid-March in light of Merrill's subsequent lawsuit and other perceived threats to the confidentiality of its meetings (see Table 4.4, line two). As some compensation, the FOMC chose at that time to shorten the lag of the public release of its lengthened summary document to shortly after the next meeting, that is, to 30 days. Thereafter, the Fed used obscurity for its own protection from political pressure designed to induce the Fed to undertake excessive ease. With economic activity in the doldrums early in the decade of the 1980s, politicians also threatened to pass laws jeopardizing good monetary management. In response, the FOMCs in that decade avoided political dangers by becoming even vaguer about its policy settings.

Congressional and public interest in the detailed records of FOMC meetings exploded in 1993, when political pressure moved away from the old canards in the direction of demands for more openness about the Fed's detailed deliberations. The Fed revealed that it had retained a vast storehouse of unedited transcripts of FOMC

Table 4.4 Major Turning Points in Monetary Policy Communication, 1970–2013

Turning Points
1. Continuing to Release a Detailed Meeting Paraphrase after Five Years and the Policy Setting with a Delay February 1970–mid-March 1976
2. Heightening Secrecy by Dropping the Detailed Paraphrase and then Staying Obscure Mid-March 1976–October 1993
3. Publishing Past Transcripts after Five Years November 1993
4. Announcing the Policy Setting Immediately and then Gradually Starting to Open Up February 1994
5. Publishing Future Transcripts after Five Years February 1995
6. Announcing Immediately Inclinations about the Future Policy Setting May 1999–December 1999
7. Announcing Immediately the Balance of Risks of Rising Inflation versus Economic Weakness January 2000–January 2003
8. Announcing Immediately Vague Forward Guidance about the Policy Setting August 2003–November 2005 and December 2008–July 2011
9. Beginning to Provide Longer-Term Objectives Quarterly January 2009
10. Starting to Give a Press Conference Quarterly March 2011
11. Announcing Immediately an Explicit Expected Forward Date to End the "Exceptionally Low" Rate August 2011, January 2012, and September 2012
12. Beginning to Provide Year-End and Longer-Term Funds-Rate Projections Quarterly January 2012
13. Announcing Explicit Quantitative Guideposts for Initiating Policy Firming and Dropping the Date December 2012
14. Announcing the Tapering of Large-Scale Asset Purchases December 2013

meetings dating back to mid-March 1976. The FOMC decided in November 1993 to have the staff transform them into "lightly edited" transcripts (see Table 4.4, line three), which, upon completion, would be released to the public once five years had passed going back in time to mid-March 1976. (In February 1995, as shown in line five on Table 4.4, the FOMC determined after extensive deliberations that transcripts of future meetings, once the participants had conducted a review of the draft for accuracy, would be distributed to the public after five years as well.)

At its first meeting in 1994, the FOMC voted not only to start tightening for the first time in five years but also to make an immediate announcement the same afternoon that it had done so (see Table 4.4, line four).Though no precedent was necessarily intended, one was established anyway. After more statements following some meetings in 1994, the FOMC finally decided in February 1995 that it always would announce right away any changes that it had made to monetary policy. Thereafter, the Fed began a gradual process of enhancing its transparency.

In May 1999, the FOMC committed the mistake of taking transparency one step too far (see Table 4.4, line six). It concluded that it should release immediately any change in its inclination to either ease or tighten in the near future. But in the latter case such a posture made participants in financial markets understandably jittery about just how new data might make central bank action more or less likely. The FOMC accordingly confronted unusual volatility in financial quotes.

Early in 2000 the FOMC stated that henceforth instead of revealing its own policy predilections it would announce its assessment of the economy's "balance of risks" weighing the severity of heightened inflation versus economic weakness (see Table 4.4, line seven). This language, with the selection of only one of the alternative phrases, would be voted on and released in the statement:

> Against the background of its long-run goals of price stability and sustainable economic growth and of the information currently available, the Committee believes that the risks are [balanced with respect to prospects for both] [weighted mainly toward conditions that may generate heightened inflation pressures] [weighted mainly toward conditions that may generate economic weakness] in the foreseeable future.[1]

In its public posture the FOMC's finger would be moved a little further from the trigger, thereby making financial markets less sensitive to new data, market letters, and FOMC members' pronouncements. The Committee also indicated that a statement would follow each regularly scheduled meeting, regardless of whether or not it had altered that balance or the stance of policy. After three years of applying this approach to the immediate announcement, the Fed permanently moved away from this construction, first by separately assessing the direction of each of the two risks and then by no longer balancing their relative weight.

As denoted in line eight on Table 4.4, the Fed started to give vague forward guidance about its future policy setting from August 2003 through November 2005. It resumed this practice in December 2008 after taking the funds rate to an "exceptionally low" level in face of the financial meltdown but without stating explicitly a likely ending date.

Already in October 2007, when it had settled upon quarterly updates of macroeconomic projections for several crucial variables, it had begun to hint at longer-term values by announcing forecasts covering three years rather than the two-year horizon used previously. In January 2009 (see Table 4.4, line nine) the FOMC began to release its explicit longer-term estimates of the economy's potential real GDP growth rate and the natural unemployment rate consistent with steady inflation. At the same time, it provided its longer-term range of estimates for inflation in consumer prices.

Three years later the FOMC explained that its inflation goal had become a single-valued 2 percent, equal to the upper bound of the earlier range. By then the FOMC already had decided on March 2011 (see Table 4.4, line ten) that on the second day of the two-day meetings when the FOMC updated the economic projections, the chairman would hold a news conference.

As noted in line 11 on Table 4.4, the Committee began in August 2011 to communicate its explicit expectation that a weak economy would be likely to justify an exceptionally low funds rate at least through mid-2013. In January 2012 it revised that terminal date to late 2014, while also releasing for the first time a graph of the year-end funds rate projections of individual meeting participants through 2014 (line 12). It presented a graph as well of the longer-run (5- or 6-year) expectations of meeting participants for the federal funds rate. Late in the summer of 2012, it pushed back the date of expected firming to mid-2015.

In December 2012, the FOMC began to state guideposts for eventual firming (see Table 4.4, line 13). It would stay its hand so long as the unemployment rate remained above 6-1/2 percent unless core consumer inflation threatened to surpass 2-1/2 percent. Because the Committee had explicitly conditioned the first tightening action on the general state of the economy, it was able to drop the expected forward date of the initial uptick in the intended funds rate. In 2013 the Fed's suggestions about an impending "tapering" of large-scale asset purchases induced a significant backup in long rates. After some mixed signals, the FOMC finally announced in December that tapering would start in early 2014 (see Table 4.4, line 14).

Relating Eras of Burns, Miller, Volcker, Greenspan, and Bernanke in a Pithy Narrative

The Fed under Chairman Burns moved up the rate in the market for overnight loans of reserves between banks, the federal funds rate, "too little, too late" in response to inflationary pressures. Unemployment fell too much, while inflation surged into the double digits as the decade came to a close. It hardly seemed coincidental that in the second half of the decade measures of money had often overrun their announced ranges.

After Paul Volcker took the helm, the Fed dramatically announced in October 1979 that it was switching operating procedures from the funds rate to reserves in order better to attain the announced annual ranges for money. The new technique also distanced FOMC members from politically sensitive backups in the funds rate. The inflation rate did subsequently halve, though interest rates spiked, economic activity dropped, and unemployment jumped to a post-war peak.

At the same time, though, the originally higher inflation and associated elevated interest rates had spurred innovations in payments practices and financial deregulation. They made the public's desired money holdings more unpredictable, in turn undercutting monetary targeting. The Fed's "practical monetarism" then was victimized further by the successful assault on inflation itself. At last the Fed could sharply lower short-term interest rates, which in turn induced a major one-time boost to the stock of narrow money that the public wanted. However, the recession as well as shaky loans to Latin America had rendered the firming in the funds rate that would have accompanied any effort to hit the lower money growth range an absolute nonstarter. The Fed instead started easing in the middle of 1982 and announced in October that it was abandoning its reliance on transactions money. Despite appreciable monetary easing on balance, the actions of President Reagan's newly appointed governors suggest that they were growing increasingly restive about insufficient accommodation. In February 1986, the reconstituted Board outvoted Chairman Volcker to cut the discount rate. The decision was rescinded later that day, but Volcker never retained his previous influential leadership role.

Under Alan Greenspan, who became chairman in August 1987, the FOMC kept output fluctuations to a minimum, while nudging inflation even lower. After the mid-1990s, Greenspan alone recognized that more Fed tightening was unnecessary, as the unemployment rate could continue drifting lower without inducing ever more inflation. The FOMC's responses to a variety of potential mishaps kept them to mere "bumps in the road." Monetary policy generally was impressive during his 18-and-a-half-year tenure. Still, he bears a noticeable share of the blame for the housing bubble. His FOMCs not only imparted overly easy monetary conditions from the autumn of 2003 through most of 2005 but also publicly telegraphed the Fed's initial unchanged accommodation and then its regular, too-gradual, stair-step removal until just before Ben Bernanke took over.

After that bubble burst during Chairman Bernanke's first term, prices on mortgage-related securities tanked, Lehman Brothers folded, financial firms stopped lending, and credit markets imploded. The Fed made unprecedented types of emergency loans and dropped the funds rate to rock bottom. It then undertook two rounds of buying huge amounts of mortgage-related and then Treasury securities, which blew up its balance sheet. The Fed then started lengthening the average maturity of its portfolio of Treasury securities by replacing short-dated Treasury bills with longer-dated notes and bonds, which continued until its bill holdings were depleted. The Fed adopted open-ended large-scale purchases of mortgage-backed securities in late summer of 2012 and augmented the program near year's end by retaining the previous pace of acquisitions of long-maturity Treasury securities. Although the economic recovery remained lackluster and inflation stayed low, the Fed decided in December 2013 to taper its purchases.

As to communication practices, the FOMC had been forced to use obscurity in its communications to protect itself from political pressure to inflate until well into Greenspan's tenure. The Fed had switched internally in the autumn of 1982 from nonborrowed reserves to borrowed reserves to guide operations, yet made no public admission of its apostasy. After the market misinterpreted a signal from open market operations just before Thanksgiving 1989, the Committee went all the way back to implementing policy through the funds rate to avoid confusing anyone on the outside about the stance of policy—ultimately altering all of its communications accordingly. Just after its first meeting in 1994, the FOMC announced right away that it was lifting its intended funds rate for first time in five years. Later, as noted, the Greenspan Fed publicly previewed its easy stance after mid-2003 before telegraphing each regular but minor tightening after mid-2004. Chairman Bernanke supplemented unconventional policy easing by overseeing a wide variety of initiatives that augmented Fed transparency.

The next chapter embarks on an extended excursion into macroeconomics. It takes the form of a description of some generalities about the Fed's thinking on the workings of the economy and the process of designing, implementing, and communicating its monetary policy.

CHAPTER 5

Understanding the Basics from a Contemporary Perspective

What does the Fed think about how the economy functions and how the institution itself makes, conducts, and discusses its monetary policy? This chapter elucidates the general principles of the Fed's views. Thus, it affords useful background for the detailed chapters that follow on the Bernanke era, which of course can't avoid these issues. Federal Reserve personnel and conventional macroeconomists predominately see eye to eye, though both suffer lacunas.

Analyzing the Economy from the Ground Up

Our first task is to understand basic economic processes. Before updating the Fed's understanding of the economy in Chairman Bernanke's reign, for comparison we'll first summarize the view of key economic processes as of the middle of the first decade of the new millennium. By indirectly adjusting its assets and liabilities, the central bank is able to set the interest rate in the market for overnight loans of reserves between banks, the nominal federal funds rate. The Fed carries out this process in some reaction to inflation and output or unemployment relative to implicit targets. Simultaneously, market participants form expectations of where the Fed will be setting the funds rate over time. To do so, those participants must forecast likely divergences of inflation and output or unemployment from the Fed's implicit targets.

From that expected path for the funds rate, the expectations theory of the interest-rate term structure explains the value of other market interest rates, even with maturities as lengthy as the longest bond rate, which has a maturity of 30 years. (Of course, the value of an additional term premium can vary over time.) The nominal bond rate less expected inflation over the life of the bond equals the real bond rate. That real bond rate then needs to be compared with the "natural" real bond rate (in other words, the real bond rate that would induce an amount spending just equal to potential output—the level of its long-run equilibrium or aggregate supply). That relationship, along with expectations and lags, is what generates actual real spending (aggregate demand) relative to potential output. Aggregate demand is for final goods and services, that is, the output that can be immediately consumed or invested in building new plant and equipment. In the short run, aggregate demand can be satisfied either by newly produced output or by inventories out of old production. But over time, demand must be the same as new output. Output relative to its potential implies an unemployment rate relative to its natural rate, or its sustainable long-run value. Price inflation is determined by output relative to its potential or, equivalently, unemployment relative to its natural rate, along with expected inflation as well as the relative prices of food, energy, and imported goods.

Now we can fill in some of the details. Financial market participants project the Fed's nominal funds-rate settings over time by forecasting the way the FOMC is likely to react to the participants' projected values of inflation and output or unemployment relative to their own estimates of the Fed's goals. These expectations of the future course of funds rates are the critical factors behind the level of medium- and long-term nominal interest rates, since the expectations theory of the term structure of nominal rates is the accepted view of how the market determines those interest rates. After all, investors will buy or sell financial assets to alter their yields until the return on holding all possible alternatives over the same time span are equalized. For example, the yield a 10-year note will have to become identical to the expected returns on holding two 5-year notes in succession, or on ten 1-year bills in succession, and so on down the maturity spectrum until ten years' worth of expected overnight interest rates is reached. (The term premium will have an effect as well.)

This is not at all to say that these expectations will be proven correct, or even that they are always rational given all the available information. In fact, as a predictor of future short-term rates on the assumption of rational expectations, the forecasting record of long rates is, using Alan Blinder's word, "terrible."[1] It says only that investors place their bets based on their convictions about the future, whether those convictions are right or wrong, and that investors will bid away easy profit opportunities through the process of arbitrage. And through this process, the central bank's setting of today's funds rate can influence, though not control, longer-term rates, including nominal bond rates.

Real interest rates, which adjust nominal or market rates for expectations of inflation, are readily figured out, as in the following example: When market participants' expectation of inflation over ten years, for example, is subtracted from the nominal rate on a 10-year note, the result is the 10-year real note rate. The central bank can influence real bill, note, and bond rates through its setting of the nominal funds rate, because the inertia of inflation and inflation expectations implies that it also has the ability to set the real funds rate. And the real interest rate at any maturity must equal the (weighted) average of all the overnight real rates that market participants anticipate will prevail over that time span.

The next link in this summary chain describes just how monetary policy's influence on real long rates affects spending, measured after accounting for changes in average prices, that is, real spending, as well as output, employment, and unemployment. At each point in time, some value for the real long-term rate will generate just an amount of real spending equal to potential output, that is, the economy's productive capacity. That rate is called the "natural" real interest rate, the name given to it in the early twentieth century by Knut Wicksell, a Swedish economist who lived from 1851 to 1926. But, as Wicksell also noted, if the actual interest rate in financial markets is persistently below or above that rate, then real spending will consistently exceed or fall short of potential output. He further pointed out that as a result the level of prices (though we would say its rate of change or inflation) will tend to rise or fall in a "cumulative process." The natural real long rate will of course vary appreciably over time for numerous reasons, and it is much easier to conceptualize in theory than to estimate in practice.

Real spending can be divided into its components: consumption, investment, government, and exports minus imports. A brief summary of their determinants can be enumerated. Consumption is a function of households' perceptions of their long-run average (or permanent) after-tax income. Investment, including inventory accumulation, while depending unpredictably on people's "animal spirits," to use Keynes's apt term, also does tend to move inversely with borrowing costs as captured by the real rates of interest. Government spending falls with a rise in real income, while the amount of taxes that affects consumption increases with real income; both obviously also are importantly affected by political decisions. Exports vary directly with real incomes abroad as well as inversely on the exchange value of the dollar adjusted for domestic and international prices, that is, the real exchange rate, which in turn tends to rise with real long-term interest rates domestically relative to those abroad. Imports respond positively both to the real exchange rate and domestic real income.

Working mostly through channels involving investment and exports minus imports, the main determinant of the gap between overall real spending and potential output at any point in time can be boiled down to an inverse relationship with the difference between the actual real long-term interest rate and its natural rate, other things equal. Obviously, the numerous "other things," including real short- and intermediate-term interest rates, are factors whose variation will alter the value of the natural real long-term interest rate, which is very hard to estimate.[2]

The production of output along its expanding potential implies the maintenance of sustainable employment, given the economy's labor force, and of normal labor productivity—that is, output per employed worker. The value for productivity depends on the amount of capital and the technology (or knowledge) embodied in the plant and equipment with which laborers can work.

Economists, starting with Milton Friedman's presidential address to the American Economic Association in 1968 and Edmund Phelps's simultaneous research, also have pointed to the concept of the "natural rate of unemployment."[3] It's sometimes called the NAIRU, since inflation will be stable if unemployment holds at the "*n*on-*a*ccelerating *i*nflation *r*ate of *u*nemployment." However, the grammar in that phrase is so horrible, for several reasons, that I'll never use the phrase again. In principle, the natural rate is the equilibrium unemployment rate that results when all peoples' expectations about available jobs, wages, and prices prove correct on average. It's not zero because some structural, or long-lasting, unemployment exists and some equilibrium frictional unemployment results from an optimal amount of searching for the best job opportunity in an imperfectly knowable world. Nor is the natural rate of unemployment a constant bequeathed by God, since it changes with alterations in demographics and public policies relating to unemployment insurance or the minimum wage.

Potential output can be viewed as the real GDP that would be produced at the natural unemployment rate. And, as Greenspan recognized in the last half of the

1990s before anyone else on earth did, a pickup in the growth in labor productivity that boosts the expansion of potential output may well lower the effective natural rate of unemployment for a while. Despite their definitional clarity, the real-world counterparts of both the natural rate of unemployment and potential output, much like the natural rate of interest, are extremely hard to estimate in real time. Even after examining a variety of relevant data, estimates of these important concepts still can suffer from big mistakes. Also, the undoubted political pressure to exaggerate the economy's capacity doesn't contribute to objective estimates. Even in retrospect, assessing what their true values have been is no mean feat. The Council of Economic Advisers, the Congressional Budget Office, and the International Monetary Fund as well as the Federal Open Market Committee (but only implicitly for the *level* of potential output) still attempt to come up with their own estimates.

At the risk of getting bogged down in numerology, let's review the bidding over time, ending with where it stands today. For the decade of the 1960s, the natural rate of unemployment apparently trended up from 5-3/4 to 6 percent. For the first quarter century after 1970, the natural rate in retrospect appeared to have varied within an elevated 6 to 6-1/2 percent range. Then it seems to have gradually retreated to the 4-3/4 to 5-1/4 percent area in the later years of the old millennium and into the new one.[4] The FOMC must have believed that it moved up noticeably after the financial turbulence and associated recession left higher actual unemployment rates in their wake; in late 2013 its central tendency for the longer-run equilibrium unemployment rate remained on the higher plateau of a 5.2 percent to 5.8 percent rate.[5] Estimates outside the Fed of the natural rate in the immediate aftermath of the Great Recession also were close to 5.5 percent, in part owing to the more limited mobility of homeowners whose house values turned out to be "underwater."[6]

The growth of potential output slowed along with the expansion of productivity (output per worker-hour) in the late 1960s and later still more in 1973, but accelerated again after the mid-1990s, while the labor force continued to trend up at a pretty stable 1 percent rate. From 1973 to 1995, potential output is estimated to have grown at around a 2-1/2 percent per year pace, associated with an advance in labor productivity in the nonfarm business sector at an average annual rate of 1-1/2 percent. Then potential output accelerated to a 3-1/2 percent annual rate for the next five years, as labor productivity grew more rapidly, reaching 2-1/2 percent. From 2000 to 2005, potential output probably just about kept to that 3-1/2 percent upward pace, as annual trend growth in the labor force arguably ebbed by 1/4 percentage point to 3/4 percent but that of labor productivity likely rose by another 1/4 percentage point to 2-3/4 percent.

Looking beyond that experience, worker productivity surged by 5-1/2 percent in 2009 when the Great Recession pushed hiring off a cliff, as discussed at the end of Chapter 7. But productivity growth averaged only around 1-1/4 percent over the next four years. At the same time, the economic weakness induced an unusual cyclical departure of discouraged workers from the labor force, which Chapter 9 will examine. Assuming that a variety of headwinds, not least of which are unwise governmental policies in general, keep economic vitality from returning, an appreciable long-lasting slowdown seems in store. The optimistic FOMC, whose central tendency for longer-run growth in real GDP was as high as 2.4–2.8 percent as late as April 2011, further revised down its December 2013 central tendency to a 2.2–2.4

percent annual pace.[7] Even that reduced pace remained higher than those of the other official organizations mentioned above.[8]

Such an estimate is sure to change appreciably, as previous revisions have been substantial. For example, the estimated output gap experienced sizable upward revisions in the 1970s and 1980s, which continued through 1994.[9] The inverse relationship between percentage movements in output around the growing trend of its potential and percentage point changes in unemployment around its natural rate is of considerable importance. In recent decades, output has risen twice as far above the level of its potential as unemployment has fallen below its full-employment rate. This relationship is called Okun's Law. It was originally discovered by Arthur M. Okun when the ratio was a little more than half again as large at 3.2. He was a member of President Kennedy's Council of Economic Advisers, and in the late 1960s also was its chairman.

Next we need to understand how the Fed thinks inflation and unemployment relate to each other and how the economy determines the inflation rate. US experience has revealed a temporary tradeoff between them, as a deliberate effort by restrictive policy to lower inflation induced some temporary unemployment above its natural rate during the time that the public's wage and price expectations were adapting. The short-run tradeoff fully disappeared, though, once enough time passed for the public and businesses to no longer be surprised on average by economic developments—that is, when their expectations about wages and prices came to be fully realized.

As long as inflation persistently exceeded the Fed's long-run objective, people were forced to learn about the likely future trend of inflation from recent experience. With inflation expectations adjusting only to people's impression of the movement in previous inflation, the creation of a shortfall of output from its potential, and an associated overage of unemployment compared with its natural rate, was required to lower the inflation rate. In fact, the evidence, as captured by the Board's old quarterly model, suggested that over much of the post-war period about two percentage points of unemployment above the natural rate for a year (or a percentage point of extra unemployment for two years) was needed for each percentage point that the rate of inflation was to be reduced. Okun's law could convert that unemployment gap into a shortfall of output from its potential. If output dropped to around 4 percent below its potential for a year (or a shortfall of 2 percent for two years), then the inflation rate in response would have declined by around a percentage point on the average. These rules of thumb held best for the core inflation rate, which excludes food and energy prices. Over shorter periods, those prices, along with import prices, are subject to variations that can displace the total measure of inflation from its long-run trend. But because those shorter-run variations tend to be reversed over time, the trend of overall inflation was best predicted by the actual behavior of core inflation.

At least these rules held pretty well until the middle of the 1990s. After that time, as the Fed finally managed to keep consumer inflation down on a sustained basis, the average inflation rate for personal consumption expenditures excluding food and energy began to hover just below 2 percent, equaling the Fed's implicit objective at the time. With the gradual emergence of a stable long-run average for the core inflation rate, the public evidently caught up in recognizing the FOMC's unstated goal. Once it became apparent that the central bank actually was willing to do what was necessary to maintain inflation on the average over time at its low goal, the evidence suggests that inflation expectations became better anchored to that objective.[10] The Fed's consumer inflation goal apparently joined lagged inflation in determining the publics' shorter-term expected inflation, so the role of lagged inflation diminished in importance. But lagged inflation continued to be a part of shorter-term expected inflation possibly because some contracts were subject to indexation, or maybe because inflation could return only gradually to the Fed's target, or perhaps because a fraction of the public still had adaptive expectations based on past experience, or even because the public may have put some odds on the Fed's altering its implicit goal in response to an observed divergence.

After the mid-1990s, even when the Fed has maneuvered the output and unemployment gaps into disappearing fully, core inflation, rather than staying at its previous value as in earlier years, in the short run has tended to revert on its own part of the way, and in the long run all the way, toward the Fed's unstated numeric goal.[11] Thus, the new era of anchored inflation expectations has tended to make the Fed better able to keep inflation contained while aiming to hit gradually the economy's potential output and natural rate of unemployment.[12]

However, the influence of the state of the economy—as captured by the prevailing gap of output compared with its potential or unemployment relative to the natural rate—on the rate of inflation and hence the stance of policy also has evolved since the mid-1990s and has worked in the opposite direction. Of course, such a gap still independently influences the actual level of inflation, but the strength of the effect evidently has declined in the two most recent decades; that is, more of a gap has been needed to have the same effect on inflation.

Therefore, following a given deviation of inflation from the Fed's objective, in the last two decades the two offsetting effects have about canceled each other out in affecting how far the Fed has had to move its policy stance to induce the gap in output or unemployment needed to get inflation to return as quickly as before to its unannounced goal. (Not that potential output and the natural rate can be estimated infallibly.) On the one hand, because the public has become more confident that the Fed will attain its inflation goal over time, its policy stance has needed to move by less. On the other hand, the lessened effect of the induced output or unemployment gap on inflation has meant a larger policy adjustment. Just how the two effects balance out in affecting the thrust of policy and the real economy is unclear to date.

Now consider whether nominal longer-term market rates tend to rise comparably with an increase in inflation expectations. I doubt it. What I think is true is that, according to the expectations hypothesis of the term structure of interest rates as outlined previously, nominal long-term interest rates equal expected short rates over the life of the instrument, apart from the term premium. Then subtracting expected inflation for the same term to maturity gives the actual real interest rate for that maturity, which can vary over time. As noted above, the difference, particularly at the long end of the term structure of interest rates, between the actual real rate and the natural real interest rate, along with expectations and lags, gives real spending relative to potential output. Okun's Law then says what the unemployment rate will be compared with the natural rate of unemployment. Those output and unemployment gaps, along with lags and inflation expectations, generate wage and price inflation. Those relationships, when projected forward and combined with the Fed's reaction function—which may well include FOMC forecasts—are what yield the path of future short rates expected in financial markets. Notice that a rise in inflation expectations tends to be associated with an increase in nominal interest rates, but the connection is not necessarily one-for-one. Instead, real long rates may decline some too. The mechanism works through the Fed's reaction function that creates the elevation in the expected path of future short rates, and thus the typical rise in current long rates. The more astute at forecasting are both the Fed and financial market participants, the closer will be the connection to one-for-one.[13]

The account we've just completed briefly describes how nominal and real interest rates, output, and prices are all determined together. Notice that this process all takes place without having to mention the money stock. In fact, when the Fed determines the federal funds rate (or its close relatives borrowed reserves or excess reserves minus borrowed reserves) without much reaction to monetary developments, money only enters the causal picture after all is said and done, as a residual. Despite Milton Friedman's dogmatic monetarism and Paul Volcker's practical monetarism, money growth in that case actually is not a causal factor in the inflationary process. Since mainstream economists now view the money stock as wholly demand determined when the Fed sets the short rate in this way, a single relationship describing money demand can be used iteratively to explain the money stock. The stock of narrow money just represents the public's desired holdings of transactions balances, which depends on how fast those balances turn over to facilitate the purchases of output at current prices. That turnover in turn depends on institutional factors and on the opportunity cost of money. The foregone opportunity of holding money rather than the best alternative financial asset is taken to be a short-term nominal interest rate, say, the funds rate, less the average offering rate, or own rate of return, on money. In order to keep the funds rate at the value of its operating target, the central bank has to ensure that it provides just the amount of reserves to ensure that banks will supply the requisite amount of money. That is the amount that that the money demand relationship indicates will generate the targeted funds rate given money's own return and the levels of output and prices in the economy.

When the central bank sets the level of the funds rate with no reaction to money, the nominal money stock is determined simultaneously with the funds rate only in a temporal sense. Money somewhat surprisingly really doesn't matter in a causal sense for interest rates, output, or prices, as they already have been determined through another mechanism. Only afterward, if anyone is interested, do output and prices, along with the relevant opportunity cost, explain the nominal stock of money through the amount of nominal money demanded. Not that Milton Friedman, who sometimes wrote as if the Fed *did* exercise direct control over the nominal money stock and sometimes wrote as if it *could* do so more precisely after implementing certain regulatory reforms, such as contemporaneous reserve requirements, ever accepted this view.[14]

Neither did the public. And the aphorism of folk wisdom approximates the truth when it says that inflation reflects "too much money chasing too few goods." However, except for the three years when Paul Volcker's FOMCs aimed at controlling transactions money in the medium term via nonborrowed reserves, that statement is true only metaphorically. From a scientific perspective, most economists no longer accept its literal validity. Of course, inflation is responsive to monetary policy, since "inflation is always and everywhere a monetary phenomenon," in another aphorism, this one coined by Milton Friedman. But the transmission mechanism always and everywhere operates through conditions and expectations in labor and product markets. And measures of the money stock always and everywhere are subject to innovation in payments practices in the marketplace. Judging by outward appearances, monetarists could never bring themselves to accept such an indirect linkage or grant the empirical importance of the latter observation in industrial countries. Accordingly, despite the strong influence of monetarists in the 1970s and 1980s, in recent decades their role has atrophied, partly because money is hard to measure but also because growth of the money stock has not been a causal factor in the inflationary process. Sometimes the truth can be counter-intuitive and violate "conventional wisdom."

Still, since the central bank is a crucial actor in affecting interest rates and thus aggregate demand, inflation clearly is a monetary policy—though not a monetarist—phenomenon. The central bank in reality makes policy decisions against the background of judgments about all the above relationships. The rising inflation of the 1960s and 1970s was indeed the fault of the Fed, a policy blunder of huge proportions, and eminently preventable.[15]

These are the economic mechanisms that circa the middle of the first decade of the new millennium would have well described the Fed's thinking about how the economy functioned. The Fed's influence could be captured by the overnight interest rate on federal funds, whose expected path influenced long-term interest rates, equity prices, the exchange value of the dollar, and asset and commodity prices in general. These channels were seen as being supplemented by the Fed's numerical inflation objective, which, along with the recent actual rate of inflation, affected the shorter-term inflation expectations in labor and product markets.

However, the Fed's perception of its own influence has evolved significantly further under Chairman Bernanke. The Fed's internal thought has come to see an unconventional policy of heavy asset purchases as having meaningful and lasting direct nontraditional impacts via a preferred-habitat channel on the term premium of nominal (and real) bond rates and other asset prices and thus strong indirect effects over time on the public's spending. The unconventional purchases of long-term securities issued by the Treasury and government-sponsored agencies or guaranteed by the latter entities blew up the size of the Fed's balance sheet. Moreover, because inflation expectations as perceived in financial markets clearly were augmented for a while by these policies, real bond rates would be damped further, stimulating spending by more.

In addition, informed by the rational expectations theory of academic economists, the idea took hold within the Fed that such actions themselves, including the unconventional policy of asset purchases, might even directly alter the inflation expectations that allegedly affect wages and prices.[16] In the traditional view, by contrast, to affect those inflation expectations, monetary policy had to work indirectly through the funds rate and then in turn on other financial and economic magnitudes, including observed inflation itself, or through the Fed's longer-run commitment to attain a desired inflation rate. The latter effect of course would be effectuated sooner if it were credibly announced by the central bank as opposed to remaining implicit and being subject to gradual learning by market participants in response to a series of realized outcomes.

Christina Romer, a professor at the University of California at Berkeley and former chairwoman of President Obama's Council of Economic Advisers, made an astute observation about the evolution of intellectual perceptions that can yield such revisionist judgments about the impact of large-scale asset purchases themselves. She asserted that the analysis of the economic "theorists" has increasingly supplanted in recent years the traditional influence on Fed thinking of the "empiricist" economists.[17] Unfortunately, this mode of thought, by replacing factual, if loose, historical relationships with academic conceits currently "in vogue," runs the risk of "wishful thinking," in John Taylor's apt phrase.[18] (Taylor is a Stanford economics professor and former top Treasury official under President George W. Bush.)[19] The concluding chapter traces the history of these and related developments.

Designing Policy from the Ground Up

Financial stability is an ever-present objective of the Fed's policy design. Indeed, as we have seen, the Fed was founded to prevent the reoccurrence of the financial panics of the past by maintaining an elastic currency and acting as a lender-of-last resort. This aspect of the Fed's role, of course, expanded enormously in the financial crisis of recent years. Moreover, we also have seen that the Congress established the government's responsibility for maintaining "maximum employment, production, and purchasing power" in the Employment Act of 1946. It further refined the Fed's objectives through the Federal Reserve Reform Act of 1977 that amended the Federal Reserve Act to mandate its current responsibility to "maintain long run growth in the monetary and credit aggregates commensurate with the economy's long run potential to increase production so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates."

Given that the Fed's ultimate objectives are enunciated in the statute, the design phase must determine whether or not intermediate targets are interposed between the operating target and the objectives. Monetarists, who as noted were influential in the 1970s and 1980s, proposed money growth as an intermediate target. Money growth can be set in stone once and for all, as in Milton Friedman's k-percent rule.[20] Or it can be adjusted each quarter based on forecasts of spending and money holdings, as in William Poole's original analytical framework.[21]

Monetarism became increasingly influential in affecting policy design in the 1970s both through legislation and persuasion within the Fed. The capstone of the school's impact came with the reform in October 1979. However, we have seen the difficulties with unstable money demand that resulted from the incentives produced by the high interest rates that accompanied rapid inflation as well as the boost to the amount of money demanded that came from the subsequent decline in interest rates as inflation retreated. The Fed learned the hard way that it is more efficient for the monetary authority to use the intermediate variables at most for "information" about the currently unobservable behavior of the ultimate economic variables—inflation, real growth, and the unemployment rate.[22] With that approach, the Fed's operating target would be linked to ultimate, not intermediate, targets.

The famous "Taylor rule" does just this, as it makes the operational target for the federal funds rate depend on key economic variables relative to their own targets as set by the Fed. The aforementioned John Taylor originated this guideline for policymaking in 1993, and it since has become ubiquitous in monetary policy research.[23] He boiled down his advice into a simple formula relating the setting of the federal funds rate to a couple of broad economic measures that represent the primary objectives of monetary policy. He started out to uncover a relationship that would produce good results in simulations of large econometric models. But the rule that he came up with closely matched the funds rate settings in actual policymaking during recent decades when monetary policy was pretty successful in attaining its goals.[24]

As noted at the start of this subsection, since 1977 the Fed's long-run objectives have been "maximum employment, stable prices, and moderate long-term interest rates." The last goal follows immediately from price stability, which will squeeze the inflation premium out of market interest rates. As for the other two goals, both before and after the statutory change, the FOMC took seriously, though didn't always successfully pursue, *both* parts of this perceived *dual* mandate of stable prices *and* sustainable economic growth. My 2003 book discerns a pretty accurate statistical estimate of a Taylor-type function in the data for each era until then.[25] That estimate explains the funds rate that the Fed sets in reacting to key economic magnitudes. Though evolving over time in the particulars, such "reaction functions" have included as explanatory variables some version of outcomes in the economy's recent past, estimates of current conditions, or forecasts for the future of two values relative to their ultimate targets. The two values encompass inflation and either the level of or the growth rate of real economic activity or the level of or the change in the unemployment rate. In that sense, unlike inflation-targeting central banks (at least in theory if not in actuality), at the Fed one goal has not taken precedence over the other.

The ninth edition of The Federal Reserve System *Purposes and Functions* has added the Fed's imprimatur to the Taylor rule in the form of a description and critique. As noted, the formula shows how the Fed should respond systematically to

> the extent to which inflation may be departing from something approximating price stability and the extent to which output and employment may be departing from their maximal sustainable levels. For example, one version of the rule calls for the federal funds rate to be set to the rate thought to be consistent in the long run with the achievement of full employment and price stability plus a component based on the gap between current inflation and the inflation objective less a component based on the shortfall of actual output from the full-employment level. If inflation is picking up, the Taylor rule prescribes the amount by which the federal funds rate would need to be raised or, if output and employment are weakening, the amount by which it would need to be lowered.[26]

Although this guide has appeal, it too has shortcomings. The equilibrium level of the real short-term interest rate can vary over time in unpredictable ways. Taylor has adjusted its assumed value over time. The FOMC's thinking can be read only for a few years; by late 2013 its longer-run median funds rate projection of 4 percent combined with its 2 percent goal for consumer inflation implied a natural real funds rate of 2 percent. Moreover, the current rate of inflation and position of the economy in relation to full-employment output are not known exactly because of data lags and difficulties in estimating the natural rate of unemployment and potential output, adding another layer of uncertainty about the appropriate setting of policy.[27]

Keynesian advice to the Fed in the 1960s and 1970s was not to tighten until the economy's (erroneously estimated) potential already had been reached. In this regard, I recall Donald Kohn, formally Board vice chairman but then serving in his earlier positions as director of the Division of Monetary Affairs as well as FOMC secretary, correctly pointing out that a very useful insight of the Taylor rule during economic recoveries is that the real funds rate already should be rising as the output gap is closing.

In specifying just how much the central bank should move its operating target for the funds rate in response to various misses, Taylor made his original recommendations in 1993. He suggested that the central bank raise the funds rate by one and a half percentage points in response to each percentage point divergence of inflation from a 2 percent objective. Importantly, since this reaction makes the nominal, or market, federal funds rate move up by more than the increase in inflation, the real, or inflation-adjusted, funds rate also will rise in response to an increase in the rate of inflation. For example, if inflation rises by a percentage point, the *real* funds rate will increase by one-half a percentage point.

Such a policy reaction is crucial for keeping inflation from getting out of hand. Indeed, a coefficient value for the Fed's reaction to the inflation gap very close to 1.5 is estimated statistically in my 2003 book in *all* the intervals after 1968 to that date.[28] That value is multiplied by four-quarter inflation projected out three quarters in the Burns-Miller era, realized as an outcome for the previous quarter in the Volcker era, and both estimated in the contemporaneous quarter and projected out three quarters during most of the Greenspan era.

Chairman Bernanke recently reiterated the common opposing view in the economics profession that the Fed under Burns and Miller responded far less forcefully to inflation.[29] But, as Athanasios Orphanides originally pointed out, that was the case only for realized inflation, which typically came in well above projected inflation rates in the 1970s owing to a vast underestimate of the natural rate of unemployment.[30]

Taylor also recommended that the Fed raise the nominal funds rate by half a percentage point for each percent by which output exceeds its potential. It's easy to figure out the implied reaction to unemployment compared with its natural rate from Okun's law by doubling the negative of that amount, since in percentage terms the unemployment rate in recent decades has drifted half as far from its natural rate as output has strayed in the opposite direction from its potential. To be consistent with Taylor's original suggestion, other things equal, the central bank would move the funds rate up by the same percentage point amount that the unemployment rate falls below its full-employment rate. More recently, Taylor mentioned an alternative that doubles the funds-rate reaction to movements in output, making the percent point increase in the funds rate just equal to the percent by which output exceeds its potential.[31] This doubling implies a rise in the funds rate that is about twice the size of the decline in the unemployment rate below its full-employment rate. Indeed, a value close to −2.0 was estimated by Athanasios Orphanides for the Burns and Miller era as well as in my 2003 book for most of the Greenspan era.[32]

The concepts of full employment or the economy's potential output are impossible to estimate accurately as well as being controversial, to say the least. Understandably, the Fed until recently has not been very explicit about the ambiguous and shifting real-side goals that it has implicitly adopted. Perhaps to avoid appearing to put undue weight on its other goal, it also had refrained from quantifying its inflation objective. Instead, both Chairmen Volcker and Greenspan interpreted price stability as a subjective concept. According to Chairman Volcker,

> A workable definition of reasonable "price stability" would seem to me to be a situation in which expectations of generally rising (or falling) prices over a considerable period are not a pervasive influence on economic and financial behavior.[33]

Similarly, Chairman Greenspan's famous characterization follows:

> By price stability, I mean a situation in which households and businesses in making their saving and investment decisions can safely ignore the possibility of sustained, generalized price increases or decreases.[34]

He continued to use that formulation over the years:

> We will be at price stability when households and businesses need not factor expectations of changes in the average level of prices in their decisions.[35]

By contrast, Bernanke thought that, to help nail down the public's expectations, the range of the central bank's long-run objectives for the inflation rate usefully could be quantified and announced. Of course, he was aware that the range may not encompass literal price stability if the central bank wants its target to incorporate a cushion above precisely stable prices. In doing so the central bank may wish to help shield the economy from the threat of deflation, in light of the constraint that the zero lower bound on the nominal funds rate puts on the amount of stimulus that it can impart. Although the FOMC hadn't then formally adopted any explicit inflation target, it intimated in early 2009 that its objective for consumer price inflation was represented by its longer-run central tendency projection of 1.7 to 2 percent. In January 2012 the Fed finally publicly set an explicit goal for consumer inflation of 2 percent.

The financial meltdown, as we have already seen, induced the Fed to move well beyond the Taylor rule once it had pushed the funds rate virtually to zero, reaching its lower bound. The Fed greatly augmented its balance sheet via large-scale asset purchases, hoping to raise inflation expectations and to lower long-term real rates. But, as we shall see, it's not clear that quantitative easing had much lasting direct or indirect effect on financial conditions, output, or inflation expectations. Yet possible ineffectiveness didn't deter the Fed from introducing repeated rounds of that or related policies. The Fed also provided forward guidance to market participants by virtually pre-committing to keeping the funds rate low for a protracted period. Suggesting that the Fed would sustain an easier policy stance than consistent with past conditional practice and therefore expected in financial markets indeed right away would reduce the expected path for the nominal funds rate, which, other things equal, would lower current levels of real as well as nominal long rates. Spending would respond, and by strengthening the economic outlook, forward guidance thus directly could increase inflation expectations and further lower current real long rates given the new levels of current nominal long rates.

Implementing Policy from the Ground Up

An important aspect of implementing policy is the choice of operating target, that is, the measure that the FOMC relies on in policy implementation by instructing the Trading Desk to aim at from day-to-day or from one reserve maintenance period to another. A good way to think about alternative operating targets concerns where they fall on a spectrum of "automaticity" of movements in the short-term interest rate, which indicates the degree to which financial market forces versus policy judgments are allowed to be reflected in movements of short rates in the money market. Going from most to least automaticity suggests, in decreasing order, how much market forces are allowed to show through, and, in increasing order, how much discretion over short rates the FOMC exercises in trying to stabilize the economy. With discretion, of course, comes direct responsibility, and thus—to the degree policy implementation is transparent so that the public is fully aware of this responsibility—praise or blame for the level of short rates. The relevant candidates to select from in the choice of an operating target were:

1. Total reserves or the monetary base—that is, total reserves plus currency.
2. Nonborrowed reserves or the nonborrowed base—that is, the total figure minus borrowed reserves.
3. Borrowed reserves or free reserves—that is, excess reserves minus borrowed reserves.
4. The federal funds rate—that is, the interest rate on overnight loans of reserves between banks.

The size of the Fed's balance sheet may be augmented to supplement the funds rate when that rate objective has been moved close to zero.

Monetarists preferred the monetary base, which as we have seen is sometimes called high-powered money. (The narrower concept of total reserves is a logical alternative, given that the demand for currency is uncertain and that reservable deposits are a multiple of required reserves, but monetarists never backed it.) In the 1970s, the base target would have been calibrated to have been consistent with the given short-run intermediate target for money, and it even could have been continuously adjusted for updated information on variations in the "multiplier," the ratio of money to the base.[36]

Strict control of the base would have given short-term interest rates the freedom to have moved enough to bring money back to its preset target pretty quickly following misses. The FOMC, whose discretion was not to be trusted according to monetarists, thus would have been circumvented. As time passed, the amount of money demanded would have become more and more inversely responsive to the short-term rate, so a given shift in the position of its demand curve relative to target would have allowed hitting the target over time with a smaller change in short rates. Yet, especially over brief periods, interest rates would have been extremely volatile in the real world as the rather interest-insensitive money demand varied, transmitting this variability of an interest-insensitive demand to the base as well, even with contemporaneous reserve requirements based on current deposits. But monetarists at the time denied this fact.[37]

A point having to do with its short-run controllability as well as interest rate volatility also rendered it impractical. To have used the base as an operating target, the Trading Desk would have had to counter any non-targeted jump in, say, required reserves, total reserves, and the base with an offsetting reduction to nonborrowed reserves. But in the very short run that would just have induced banks to react by borrowing more reserves as an offset. The Trading Desk—in classic chasing-its-tail behavior—would have countered in turn with another decline in nonborrowed reserves, and so on. Even with some immediate reaction of the amount of money demanded to the resulting response of higher interest rates and with strictly contemporaneous accounting for reserve requirements, I doubt that short-run base control would even have been feasible, although monetarists never admitted this fact either. Accordingly, attempting close control of the base would have implied so much volatility in the funds rate that it would never have been adopted.

Nonborrowed reserves, by contrast, are closely controllable day-to-day by the Trading Desk without inducing inordinate interest rate volatility. Suppose the FOMC had instructed the Trading Desk to use nonborrowed reserves or the nonborrowed base as its operating target. Defensive open-market operations can pretty well offset movements in non-controlled factors that threaten to displace the supply of either nonborrowed measure from target. They would have had target paths consistent with the short-run money path—derived from the paths for total reserves or the base by subtracting initial borrowed reserves or initial borrowing plus projected currency. The amount of borrowed reserves in the 1970s and 1980s mainly depended on the funds rate less the known discount rate. Thus, the initial amount of borrowing assumed in constructing either of the nonborrowed paths would have needed to be consistent with the funds rate that was projected to have yielded the public's demand for the money target, given the nominal income forecast.

What is most important to understand, though, is what would have happened automatically to borrowing and the funds rate in the event of a surprise miss of money from its target during the inter-meeting period. Holding nonborrowed reserves to its target path would have caused an induced movement in the funds rate that would have been in the right direction but would have been considerably muted relative to maintaining total reserves or the base on target. Eventually, despite some edging back of short rates, money would have come an appreciable part—though by no means all—of the way back to its target after a permanent demand curve shift due, say, to an unexpected variation in nominal income. But the movement in rates, especially at first, would have been cushioned a lot by the automatic change in borrowed reserves that would have caused total reserves and the base to miss their targets by the same amount in the same direction as the Trading Desk hewed to its nonborrowed reserves target. Over time, of course, borrowing also would have partly reversed its original induced movement, in line with the funds rate.

Alternatively, the FOMC could have instructed the Trading Desk to aim at a free reserves or borrowed reserves operating target. After all, during a maintenance period, excess reserves were highly predictable and, in the late 1960s through the mid-1980s and after mid-1998, required reserves were certain given that reserve requirements were based on deposits measured with a substantial time lag, that is, lagged reserve requirements. The Fed thus could get to borrowed reserves through its control over nonborrowed reserves. And the Trading Desk's potential control over aggregate borrowing would have given it considerable influence over the funds rate because the wording of the borrowing regulation (Regulation A) in the 1970s and 1980s produced for each commercial bank a higher implicit incremental cost for each additional dollar of borrowing from the Fed. (The Board staff referred to this implicit marginal cost as the "frowns premium.")

As the Trading Desk forced *more* borrowing on the banking system, for example, by lowering nonborrowed reserves, the implicit incremental cost of borrowing from the System *would have risen*. Banks naturally would have turned to the funds market for funding. Their stronger bidding would have forced up the funds rate—all the way to the point where the marginal cost of all sources of funding again were equal. Since to reduce overall costs each commercial bank naturally would bring the added cost of all sources of funding into equality, including the interest cost of borrowing from other banks in the funds market, the Trading Desk would have been provided with an indirect handle over the rate at which funds would have traded. Simply by altering the overall amount of borrowing, the Trading Desk therefore could have fairly accurately predicted the associated change in the funds rate. Econometric evidence suggested that each time the amount of borrowed reserves rose by $100 million, the spread of the funds rate over the discount rate would have gone up by 25 basis points (plus or minus an error term). A close operational variant to aiming at borrowed reserves is using free reserves, again, excess reserves minus borrowed reserves, as FOMCs loosely did under Chairman Martin. Before excess reserves exploded in the financial crisis, banks' desired holdings of excess reserves also were predictable in advance.

Finally, the Trading Desk could have gained even closer control over the federal funds rate if the FOMC had instructed it to use that rate itself as an operating target. The Trading Desk simply could have relied on its day-to-day influence over nonborrowed reserves through open market transactions in government securities. It could have bought securities and injected reserves by paying for them when the funds rate edged above the targeted rate or drained reserves by selling securities when the rate slipped below it. Announcing the FOMC's intention for the funds rate additionally would have aided in establishing the desired trading in the funds market. The market's tendency to arbitrage by buying when the prevailing rate is below its near-term expectations—thereby bidding up the market rate—and selling when the prevailing rate is above those expectations—thereby lowering the observed rate—would help to bring the rate into conformity with its target.

The FOMC, though, occasionally felt constrained by the visibility of the overnight interest rate and resultant potential political pressure from simply relying on a federal funds rate operating target. Adopting free reserves or borrowed reserves as the primary operating target rather than the funds rate—as FOMCs has been forced to do when the Fed had to obscure its influence over short-term market rates—has deflected potential political pressure away from the FOMC. Thankfully, in our enlightened era the problem of political pressure will never arise again! (Please ignore the criticism from Democrats, Republicans, and Independents alike about exceptional Fed policies from 2008 through 2013.) Even so, the FOMC did use the funds rate in implementation for virtually all of the decade of the 1970s under Chairman Burns and once again under Chairman Greenspan as the 1980s ended and thereafter through part of Chairman Bernanke's first term. Insufficient—and certainly no—judgmental adjustment over time of any of the alternative operating targets for free reserves, borrowed reserves, the funds rate certainly can result in undesirable movements in total reserves, the monetary base, money, and spending. But as the post-1982 eras of Volcker and nearly all of Greenspan demonstrated, enough counter-cyclical adjustment of any of these operating targets no doubt can prevent any necessary logical inconsistency between a focus on any of them and the conduct of sensible policy.

The move in January 2003 to a penalty rate for primary discount credit of a percentage point above the FOMC operating objective for the federal funds rate along with the immediate announcement of the operating target for the funds rate starting in February 2004 appeared to have locked the FOMC into a funds rate target once and for all. However, after the financial crisis caused a freezing up of credit extension in the late summer of 2008, as noted, the Fed not only lowered the funds rate as far as possible by year-end but also established novel and radical supplements to a funds rate target. The new implementation initiatives took the form of a greatly enlarged balance sheet. During the crisis the Fed first interposed itself as a financial intermediary to keep credit available in essential credit markets while undertaking huge volumes of foreign exchange swaps with other central banks. Thereafter, it adopted several episodes of quantitative easing, which became open-ended in September 2012.

Communicating Policy from the Ground Up

In modern times, making the Federal Reserve's procedures as understandable as possible has proven to be advantageous, as increasingly became the case under Chairmen Greenspan and Bernanke. Transparency has rendered the Fed's current policy posture obvious and its future policy stance more predictable. Given the important role of expectations in financial markets, such predictability potentially makes its policy implementation more effective. If the Fed communicates its procedures as well as its goals clearly, its future actions, even if conditioned on particular economic developments, in principle would be more accurately reflected in financial-asset prices and yields. That way the Fed in theory would find it easier to attain its objectives. Indeed, if the Fed in fact usually could predict its future tactics with some precision, then it would find publicly communicating hints about the future settings of the funds rate to be in its interest in helping market participants establish appropriate prices and yields of financial assets.

There are times, for example, when such an "open-mouth" policy may be viewed as essential. If falling prices are a genuine threat, as seemed to the FOMC to be the case in mid-2003, the Fed may need to indicate that it intends to keep the funds rate low for quite a while to further lower bond rates. Or at the beginning of a severe financial meltdown when extreme policy ease would help to avoid any possibility of depression, a signal of a low funds rate objective may be a crucial policy initiative. Making public such a predilection to stay quite accommodative for a considerable period of time will contribute to pushing down nominal and real bond rates relative to where they would be otherwise. This pattern would foster higher stock and housing prices, added spending and output, and lower unemployment.

Still, markets could interpret any such communication about the Fed's future policy stance as a commitment, whether that inference is intended or not. And such a posture could prove to be undesirable in certain situations, as when the economic outlook is crucially uncertain and circumstances can change unexpectedly. On those occasions, a surprising swing in policy may become necessary, which can bring into question the Fed's analysis and policy decision underlying a quasi-commitment. Especially when financial asset prices fall appreciably, investors always look around for scapegoats. And the Fed is a readily available candidate. A change in economic conditions that affects the outlook enough to alter the Fed's tune in the face of its "promised" policy stance, naturally gives rise to calls of "inconsistency" and "incompetence." The lesson of being vague in public communication about future contingencies so as to avoid such charges is one that successful politicians have to learn quickly, because it is impossible to cover all the possible hypothetical circumstances that may well have to be taken into account while at the same time maintaining the simplicity of message that can be comprehended.

A related lesson can be drawn from the FOMC's mistakes in several months following both May 1999 and January 2006 in Chairman Bernanke's first chairmanship: When immanent policy firming is not a foregone conclusion, but depends on uncertain economic developments, hinting in the immediate announcement after its meetings at its own inclination to tighten policy can cause trouble in the form of a demonstrable edginess in financial markets. Bernanke addressed this issue at a Joint Economic Committee hearing on March 28, 2007, in response to a question from Jim Saxton (Republican, New Jersey). He said that the FOMC, except in unusual circumstances, should limit itself to specifying its sense of the risks to upcoming outcomes for inflation and economic expansion relative to its objectives of price stability and maximum sustainable economic growth, and leave it to financial markets to set asset prices that incorporate their expectations about the future stance of policy. Thus, he suggested, the FOMC henceforth normally would refrain from issuing an immediate statement containing any semblance of a "tightening bias" regarding the setting of the funds rate in the near future.

The Fed later seemed to realize that, although market skittishness would persist in the case when it still wants to make its quasi-commitment to tightening explicitly contingent on arriving data, the problem could be ameliorated through forward guidance combined with economic thresholds as distinguished from triggers. This approach can add policy flexibility even given the perception of an absolute conditional commitment. But in adjusting their estimate of the likely date of action, markets still may overact somewhat to new data.

Even too much clarity about a central bank's ultimate objectives can circumscribe the tactical flexibility that is so necessary to success. For example, if the range of acceptable core consumer inflation has a hard edge, then any sustained reading above it, for example, even if it is soon destined to disappear on its own, can induce unwarranted market expectations of a course of policy tightening. If the Fed then fails to live up to those expectations, it will be called "soft on inflation." A dovish reputation can be very hard to live down. Before Bernanke the Fed was somewhat ambiguous about its inflation objective. Also, even if the Fed's words are crystal clear, market misunderstandings of its meaning are inevitable. Yet attempts to correct those initial misperceptions can engender new misunderstandings. And gabbiness by many Fed officials with different perspectives only enhances the grounds for charges of inconsistency. Because investors view the Fed's words through the prism of investment profitability, too much talking by the central bank can be hazardous. Although investors may well have evaluated available profit opportunities objectively, reflecting George Stigler's principle that the *survivors* in competitive markets must have been behaving as if their effective decisions had been made rationally, their judgment about the Fed's words often has been distorted.

Simple repetitive language has the best hope of being understood by busy investors. Robert Rubin and Laurence Summers, successive Secretaries of the Treasury under President Clinton, took this lesson to heart: "A strong dollar is very much in the best interest of the United States" could just as well have been emblazoned on a card for them to have passed out instead of having to reiterate the same mantra over and over again.[38] David Wessel wrote,

> It isn't clear (to me, anyhow) why the Treasury secretary's words matter so much to currency markets but they do . . . Robert Rubin showed how to use rhetoric to steer the dollar away from the cliff while avoiding adding noise to the market. "I had to be consistent and highly disciplined in not only what I said, but precisely how I said it," Mr. Rubin wrote in his memoirs. "Affecting exchange rates unintentionally would make me look undisciplined and unsophisticated. My credibility . . . could be especially critical if at some subsequent time we had a weak dollar and faced the possibility of a dollar crisis."[39]

William Poole, then president of the St. Louis Fed, summarized this perspective:

> [T]he policy statement needs to be put together from a relatively few standard elements. The way I have put this point is that the English language is incredibly rich, often with multiple meanings for a given word. The various meanings can be looked up in a good dictionary. However, there is no dictionary in which we can look up the meaning of a paragraph. In the past, market participants have sometimes come to somewhat different interpretations of FOMC policy statements. This fact indicates to me that the Committee has not communicated with as much clarity as desirable. I do not pretend that the goal is easy to reach but believe that progress will require greater standardization over time in the structure of the statement and in the options from which the statement is put together.[40]

That completes our background lesson. Now it is on to Part II, which examines in detail monetary policy during the eventful chairmanship of Ben Bernanke.

PART II

Monetary Policy in Chairman Bernanke's Era: Taking a Closer Look at Monetary Policymaking and Communication, February 2006–January 2014

Shortly after he became chairman, Ben S. Bernanke said this from the speaker's podium at a luncheon for retired officers and former Board members on March 31, 2006:

> I owe a lot to my last two predecessors, Paul Volcker and Alan Greenspan. They oversaw much of the work in the economy that had to be done. They left me a good hand to play. And they established a very good position on Fed independence.

At that luncheon, Bernanke was asked a question from another former member of the staff about the Fed's policy on the controversial issue of "too big to fail." In introducing his vague remarks, he told a story about the time his predecessor also was asked a sensitive question. According to Bernanke, Chairman Greenspan immediately inquired, "Is this session off the record?" After being assured that it was, he reiterated his query, "Are you sure it's off the record?" Again he got the same assurance. Greenspan finally said, "In that case, no comment."[1]

In contrast to Greenspan's more guarded attitude, Bernanke brought into office a desire to foster more central bank openness. There is no little irony, then, in noting that at first he was not as good a communicator as his at times incomprehensible predecessor. As another irony, part of the explanation was because Greenspan upon his retirement left behind a troublesome practice.

CHAPTER 6

Saying Oops after Assuming the Chairmanship[1]

When the FOMC assembled at Chairman Greenspan's next-to-last meeting, it backed away from its commitment to a one-quarter-point firming. Although the statement in December 2005 reported another modest increase in the funds rate to 4-1/4 percent, no longer did it assert, as in November, that "policy accommodation can be removed at a pace that is likely to be measured." Rather, the placement of the word "measured" was altered to no longer imply the certainty of a further imminent move. Indeed, "policy accommodation" wasn't mentioned at all. Instead, it referenced the "further measured firming that is likely to be needed to keep the risks to the attainment of both sustainable economic growth and price stability roughly in balance," and mentioned that "the Committee will respond to changes in economic prospects as needed."[2]

After lifting the funds rate by another one-quarter point in late January, the FOMC's statement was softer still despite the deletion of the word "measured," in that "may" replaced "is likely to" in the phrase "some further policy firming may be needed." The statement accordingly provided the incoming chairman more leeway, although it did repeat verbatim the phrase about the FOMC responding to changing economic prospects.[3] Taken together the words in both statements signified that a new reactive, discretionary policy approach depending on the tenor of incoming economic data had supplanted the previous series of rote upward nudges in the funds rate. But the Committee still retained a public bias in the direction of further tightening.

When the meeting Minutes appeared on February 21, they confirmed this impression by concluding, "[A]ll members agreed that the future path for the funds rate would depend increasingly on economic developments and could no longer be prejudged with the previous degree of confidence."[4] Lynn Reaser, chief economist at the Investment Strategies Group, found a considerably less insulting analogy than my own description of "rote" previous firming, and it probably was more descriptive as well. "They are definitely off autopilot," she said.[5]

That's why she makes big bucks and I don't.

The statement at Greenspan's last meeting in January again referencing the FOMC's predisposition to firm was dubious precisely because the policy outcome no longer was all that foreseeable given that the decision depended on how incoming data would affect the outlook. The Committee's subsequent announcements in March and May that retained the practices of January also were questionable for this reason. The wisdom of the tightening bias in a data-dependent context was about to be severely tested. Unfortunately, it can't be said that the Fed passed this test with flying colors. In the event, investors became incredibly sensitive to each new data point and equity markets tanked in the context of heightened volatility. Shades of the FOMC's similar mistake (discussed in Chapter 4) in May 1999.

Encountering a Communications Problem

At his first monetary policy testimony before the Congress on February 15, 2006, Chairman Bernanke emphasized the influence of new information on FOMC decisions:

> Although the outlook contains significant uncertainties, it is clear that substantial progress has been made in removing monetary policy accommodation. As a consequence, in coming quarters the FOMC will have to make ongoing, provisional judgments about the risks to both inflation and growth, and monetary policy actions will be increasingly dependent on incoming data.[6]

At the same time he underscored that the FOMC retained an upward bias:

> [T]he risk exists that, with aggregate demand exhibiting considerable momentum, output could overshoot its sustainable path, leading ultimately—in the absence of countervailing monetary policy action—to further upward pressure on inflation. In those circumstances, the FOMC judged that some further firming of monetary policy may be necessary, an assessment with which I concur. (p. 2)

Still, the dry prose of the accompanying Monetary Policy Report suggested that the FOMC under Chairman Bernanke, after another tightening move or two, could have had the luxury of sitting on its hands for a while. I'll combine some sentences to make the point: "With the economy already operating in the neighborhood of its productive potential," "the effects of the cumulative tightening in monetary policy should keep the growth in aggregate output close to that of its longer-run potential," "and with longer-run inflation expectations continuing to be well anchored, core inflation should remain contained in 2006 and 2007" (p. 2). The situation described in that quote sure sounded like the proverbial optimal "steady state" about which economics professors like to lecture. (If only things had worked out that way.)

Chairman Bernanke placed the central tendencies of the two-year economic forecasts of the Board members and presidents front and center in his testimony. To be sure, in putting their forecasts together the Board members and Reserve bank presidents were asked to assume only the "appropriate" stance of monetary policy going forward. There was no way to tell what particular funds rate path the individuals may have had in mind in making their predictions. But the quoted words in the last paragraph don't sound like the FOMC was imagining any extended firming episode, at least with the information they had in hand at the end of January 2006.

Importantly, Bernanke emphasized that he was "comfortable with these projections" (p. 2)—though perhaps part of his reason for making that point was because he didn't attend the January meeting of the Committee when the projections may have been discussed. In stark contrast, I recall Chairman Volcker internally denigrating the Committee forecasts. In addition, the concluding chapter of my 2003 book on communication contains statistical evidence showing that during Volcker's chairmanship the Committee's projections played no role in setting the funds rate.[7] Chairman Greenspan did not even allow mention of the projections to pass his lips in his monetary policy testimony after July 2002. After all, he didn't necessarily agree with them—and he certainly didn't contribute any input to their construction.[8] With a new chairman, how times can change!

Chairman Bernanke's statement stressed the need for a "painstaking examination" of available data. It went on to emphasize forecasts of the future versus estimates of current conditions when he said that policymaking requires "careful consideration of the implications" of "economic and financial data" for "the likely path of the economy and inflation, and prudent judgment regarding the effects of alternative courses of policy action on prospects for achieving our macroeconomic objectives." (p. 5) In answer to a question from Representative Carolyn Maloney (Democrat, New York), he exclusively focused on the role of current policy in affecting forecasts by extolling the desirability of choosing among alternative policies according to the best projected effects on economic conditions.[9]

At his initial monetary policy testimony, Representative Maxine Waters (Democrat, California) uttered the best quote of the day, if not the year. She amusingly said, "We are going to miss Mr. Greenspan. No one talks quite like him, and we don't want you to." In fact, the media made much of the difference in the clarity of expression between the two men.[10] In answer to a question Bernanke noted that enhanced transparency had made the Fed's future policy stance more predictable, which he treated as an unalloyed virtue. He neglected to mention, though he later often expressed a similar point of view, that at times unexpected economic developments can fully justify Fed policy actions that contradict the predictions of market participants.

In response to Representative Spencer Baucus (Republican, Alabama), he said that he came on board without an agenda for any massive increase in transparency. To be sure, as a governor he previously had contributed to a trend toward more openness, a process that would continue under his chairmanship. One possibility that he reiterated from his confirmation hearing was that he hoped that he could persuade his colleagues to quantify the inflation objective to better anchor the public's anticipations.[11]

During much of his career, Bernanke had been an advocate of inflation targeting, which justifies a detour on the history of the Board's reaction to this evolving doctrine. The idea found expression by a few members of Congress, representing one strand of political pressure concerning policy design. Yet that initiative was rather diffuse and initially non-consequential. It appeared off and on as a series of draft bills promoting inflation targeting in one form or another. Representative Steve Neal (Democrat, North Carolina), Chairman of the House Banking Committee's

Subcommittee on Domestic Monetary Policy, offered draft bills mandating zero inflation in 1989, 1991, and 1993. Chairman Greenspan's testimony on the first version was supportive. "The current resolution is laudable, in part because it directs monetary policy toward a single goal, price stability, that monetary policy is uniquely suited to pursue."[12] The last two bills defined zero inflation in terms of the absence of qualitative inflationary expectations in "individual and business decisionmaking." Even with the softer wording, the bills were dead on arrival.

Then Senator Connie Mack (Republican, Florida) and Representative Jim Saxton (Republican, New Jersey), co-chairmen of the Joint Economic Committee, introduced draft legislation in 1995 and 1997 that, if enacted, also would have accorded sole importance to the inflation goal. The draft legislation, which permitted the central bank to pay attention to the real economy only during the initial approach to price stability, on its face also seemed incompatible with the dual mandate put in the Federal Reserve Act in 1977 that the Fed always wholeheartedly had endorsed. Nonetheless, Chairman Greenspan's testimony on the bill's initial version expressed approval: "I think that having a primary goal of price stability is the most important thing which a central bank can contribute to a market economy."[13] Both Congressmen then introduced separate bills as late as 1999, but the Board avoided subsequent testimony; my impression was that with the passage of time the initial positive position became considerably attenuated. Moreover, the lack of broad political support for the idea became ever more apparent, and the legislation got nowhere.

Chairman Greenspan never was willing to quantify the FOMC's goal for inflation. He thereby maintained symmetry with the objective for the natural rate of unemployment or potential output, which are impossible to quantify in light of estimation uncertainties. Not wanting to compromise the Fed's dual mandate also may have been part of the rationale for his refusal. Limiting the FOMC's tactical flexibility was another possible consideration. And different concepts of measuring price changes and varying statistical methodologies used in practice over time also presented obvious difficulties. But besides all that, another possible justification comes to my mind as well. Monetary policy in the United States is made by a committee of 12 separate individuals, and the group of Board members and all Reserve bank presidents number 19 people in total. Keeping the goal implicit and unstated had fostered comity among them over all these years, but trying to reach explicit agreement on a specific range for inflation would just sow discord and dissension. Any group that big could not easily reach an accord. So why bother trying?[14]

The idea of according priority to the inflation goal never got off the ground among policymakers in the United States. But it took hold in academia, at the International Monetary Fund, and in many central banks around the world. It was first adopted in New Zealand in 1990. That practice soon was followed by Canada, the United Kingdom, Sweden, Finland, and Spain. Relative to a single-minded focus on attaining the inflation goal, those central banks adopted the slightly more complicated approach of "flexible inflation targeting." Although inflation still is accorded priority, the central bank doesn't try to bring it back to target as soon as possible. After a deviation of inflation from target, the central bank intentionally will aim at taking typically a couple of years to get it back on track. That flexible procedure lessened the variation of output growth and unemployment. Thus, variability on the real side indirectly would be reduced by a flexible approach to inflation targeting.

Flexible inflation targeting boiled down to targeting the central bank's inflation forecast, a process that naturally became known as "inflation-forecast targeting." Bernanke and Mishkin's position could be "characterized, as the name suggests, by the announcement of official target ranges for the inflation rate at one or more horizons, and by explicit acknowledgment that low and stable inflation is the overriding goal of monetary policy."[15] After that article with Mishkin, he co-authored a book defending that policy approach.[16] Along with Mishkin and Posen, he propounded inflation targeting in an op-ed piece in the *Wall Street Journal*, "What Happens When Greenspan Is Gone?"[17] In later years, he reconsidered giving priority to the inflation goal. His second thoughts were in evidence by the time of his first term as a Board member, when he gave speeches on the subject.[18] Still, his interest in understanding the approach continued, and as late as the fall of 2004, he co-edited a book with Michael Woodford on inflation targeting.[19]

At his mid-November 2005 confirmation hearing for Fed chairman before the Senate Banking Committee, Bernanke strongly supported the dual mandate put in the Federal Reserve Act in 1977. Still, he continued to call for quantifying the long-run inflation goal, as he had in previous speeches as a Board member. An identifying feature of the original vision of a flexible inflation targeting regime is the fixed time horizon, such as two years, to return forecasted inflation to its announced target. Therefore, a proviso that he said he would put on the announcement of an inflation goal was highly significant:

> [T]he FOMC regards this inflation rate as a long-run objective only and sets no fixed time frame for reaching it. In particular, in deciding how quickly to move toward the long-run inflation objective, the FOMC will always take into account the implications for near-term economic and financial stability.[20]

Despite such assurances of support for the dual mandate by the nominee, the final soliloquy by Senator Sarbanes (Democrat, Maryland) at the confirmation hearing was fascinating. "If you had a numerical figure for inflation but not for unemployment, there would be a shift in focus of policymaking and debate," Sarbanes said. "The constant focus [would] be: Have you hit the numbers target on your inflation goal."[21] Thus, in Sarbanes's view, announcing a quantitative goal for inflation but not the real side, in light of human nature, would inevitably but inappropriately lead the FOMC to place primary emphasis on inflation. This outcome would violate the dual mandate, even if inadvertently. In an interview on CNBC on January 31, 2006, the Senator reiterated his concern that Chairman Bernanke may overemphasize the inflation objective compared with the unemployment goal.

The chairman's mid-February testimony noted that over the past year core consumer prices had increased by 1.9 percent.[22] The Board's accompanying monetary policy report described core inflation performance in a bunch of measures at around 2 percent over the last couple of years as "subdued" and longer-term inflation expectations in that general area (accounting for an uncertain future) as "contained" and "well anchored."[23] That wording sounded pretty darn acceptable to me.

In terms of potential early challenges to the new chairman, another straw had appeared in the wind as he began his term. The policymaking part of the Minutes of the meeting for January 2006 started out with a sentence suggesting that the members of the Committee again had become restive about how the immediate announcement was drafted and finalized: "[T]he Committee indicated that it intended to take up at a future meeting the relationship between its formal vote and the policy statement issued after the meeting."[24] The Committee apparently revisited the issue in its unusual two-day meeting in March, the first one Bernanke chaired. The FOMC postponed a decision on whether or not to include the statement in the vote.

The Minutes went on to report that the Committee "discussed its experience with the two-day meeting. Participants agreed that additional time had facilitated their discussion of the economy, policy, and the wording of the announcement . . . After experience {with the next two meetings} a decision would be taken about the general format of future meetings."[25]

These words suggested to me that FOMC meetings under Chairman Bernanke actually were intended to be working sessions where important decisions would be made and the statement constructed, which would require more time for discussion. They would no longer be "wired" with a pre-determined outcome for the policy stance and with only limited opportunity to edit a prepared statement that already essentially was in final form, as was the case under Chairman Greenspan.[26] In this connection, Bernanke adopted a more inclusive approach to Committee decision making by reinstituting the practice of making his recommendation after the governors and presidents each had discussed the policy alternatives presented by the staff. Of course, if policy decisions actually were going to be made at meetings under Chairman Bernanke, the discussion would become more spontaneous, with significant "give and take" and less scope for prepared "position papers." Also, "off-the record" alerts to selected journalists of the upcoming meeting's outcome, even if infrequent, would no longer even be possible. Accordingly, an occasional side effect of the more democratic process would be more policy surprises and additional volatility in financial markets.

The Minutes of the March 2006 meeting also blandly noted:

> With regard to the Committee's announcement to be released after the meeting, members expressed some difference in views about the appropriate level of detail to include in the statement . . . Changes in the sentence on the balance of risks to the Committee's objectives were discussed. (pp. 7–8)

The immediate statement used extra words to highlight not only the likelihood of a moderation in economic growth but also the possibility that elevated energy prices and tauter labor markets could contribute to inflationary pressures. Still, the formal treatment of the risks and future policy hewed exactly to the precedent established in January:

> The Committee judges that some further policy firming may be needed to keep the risks to the attainment of both sustainable economic growth and price stability roughly in balance.[27]

Investors, however, didn't interpret the word "may" that signified the tightening inclination literally as in the dictionary definition. They instead relied on their previous experience with Committee guidance about future moves to observe that the last time the FOMC used that word in an immediate announcement, it subsequently tightened. In response, the Dow Industrials fell that day by more than 100 points and bond yields backed up appreciably. As Greg Ip noted in mid-April,

> [T]he markets read the March statement as a commitment to raise rates in May and probably in June. But some Fed officials say they were trying to convey an inclination, not a commitment to raise rates in May, and weren't sending any signal about June.[28]

Stock and bond markets, though, reversed course when, along with another favorable reading on wholesale inflation, the Minutes of the meeting were released on April 18. They reported that "most members thought that the end of the tightening process was likely to be near, and some expressed concerns about the dangers of tightening too much, given the lags in the effects of policy." The Minutes also noted that some members recognized the danger that markets could misconstrue the "may" sentence as a promise of several further firming actions.[29]

But the next day financial markets worsened again on unfavorable core CPI data for March, which by rising at 0.3 percentage point was 0.1 percentage point above market expectations. Edward McKelvey, formerly on the Board staff but by then senior economist for Goldman Sachs, said the release "creates a perceptual issue" for the Fed. "Markets have just sort of digested this idea that maybe they're close to done. This appears to send a different message."[30]

The chairman evidently felt the need to disabuse market participants of any idea that the FOMC had preprogrammed its future actions. That is, he wished to dispel the notion that it definitely was either continuing on a path of several automatic tightening moves or that it had only one more firming up its sleeve ("one and done" in market parlance). So Chairman Bernanke said in testimony before the Joint Economic Committee of Congress on Thursday, April 27, that

> even if in the Committee's judgment the risks to its objectives are not entirely balanced, at some point in the future the Committee may decide to take no action at one or more meetings in the interest of allowing more time to receive information relevant to the outlook. Of course, a decision to take no action at a particular meeting does not preclude actions at a subsequent meeting.

"Any investor or trader who heard or read those words and concluded that he was saying the Fed absolutely would be done after next week can't understand plain English." This lecture came from John Berry, a long-time reporter covering the Fed beat.[31] And all the major newspapers certainly reported the story fully and correctly. "Yet," as Greg Ip wrote, "markets read the talk of 'pause' as if it were a 'halt,' and futures markets marked down the odds of an increase at the Fed's June 28–29 meeting and at subsequent meetings."[32] When, at the White House Correspondents Association dinner in Washington two days after the testimony, cable newswoman Maria Bartiromo asked Chairman Bernanke whether the media and financial markets were right to think that he had signaled that the Fed would soon "be done raising interest rates, 'He said, flatly, no,' she reported on her program at 3:15 p.m. the following Monday, triggering a sharp drop in stock prices."[33] "It's worrisome that people would look at me as dovish and not necessarily an aggressive inflation fighter," she quoted him as saying.[34]

Berry noted that "virtually all reporters treat discussions at such events as off the record—that is, not for publication—unless there is an explicit understanding otherwise."[35] Even so, on May 23 Chairman Bernanke charitably called his response "a lapse in judgment on my part." Bernanke also told the Senate Banking Committee that, "In the future, my communications with the public and with the markets will be entirely through regular and formal channels."[36] Although somewhat ambiguous, that statement could be read as suggesting that he doesn't plan on talking to reporters even "off the record." Chairman Greenspan, of course, made doing so a common practice, in part for the purpose of informally sending signals to financial markets.

According to Greg Ip's original story, Bernanke noted to the CNBC anchorwoman that

> the markets had misread his testimony and that he was merely trying to create "flexibility" for the Fed. Markets responded by boosting the probability of a rate increase in June. . . . The recent gyrations suggest that markets continue to expect Fed guidance. "If you ask people why they think the Fed will stop in June, they'll say it's because the Fed said so, not because the data tells [sic] them they think the Fed should stop," said Jim Bianco, president of Bianco Research, a Chicago financial research firm.
>
> The market's action also suggests less confidence in the Fed's inflation fighting credibility, a blow to Mr. Bernanke, who has sought to dispel notions that he is an inflation dove with repeated assertions of the primacy of low inflation. Some investors criticize his testimony last week for ratifying expectations of a pause without the data yet in hand to justify one.[37]

The new chairman took some other flack over his "unfortunate" communication gaffe, as the *Financial Times* put it. On the same day Greg Ip's story appeared, the *Wall Street Journal* snidely entitled an editorial "Educating Ben." And David Ignatius wrote an op-ed article in the *Washington Post* two days later titled "The Apprentice Maestro's Missteps." These pieces argued that too much blunt talk in public can be a bad thing, inducing volatility in financial markets. (Indeed, one might even conclude that the less said about future policy moves, the better.) In this particular case, investors interpreted talk of a pause, even with its clear caveats, as being too dovish and thus disquieting.

The incident "was followed by a month of 'hawks on parade,' with every Fed official taking to the podium to emphasize discomfort with accelerating inflation and determination to fight it at all costs," as long-time Fed-watcher Caroline Baum observed.[38] Also, Chairman Bernanke appointed a subcommittee on communication issues sometime before the May 10 FOMC meeting, according to the Minutes of the meeting. It was to be chaired by Governor Kohn, who became the Board's vice chairman that June 23. (The last three chairman of FOMC subcommittees on communication issues also had been Board vice chairmen.) The subcommittee, which was to include Presidents Stern and Yellen as well, had as its objective helping the Committee "frame and organize discussion of a broad range of such issues over coming meetings," as the minuses of the meeting reported Governor Kohn as saying.

The Committee's May 10 statement announced the sixteenth straight quarter-point increase in the funds rate but made no reference to a pause. It indicated instead that "some further policy firming may yet be needed to address inflation risks . . ."[39]

That was the only mention of risks to the economy. The statement no longer included any explicit judgment about the economy's two main risks. Starting with the second meeting that Bernanke chaired, the Committee's statement instead used a more fully articulated economic forecast than before to justify its policy decision. And the Committee certainly continued to let the markets know what its predilection was about future policy. Its statement went on to reemphasize conditionality in "that the extent and timing of any such firming will depend importantly on the evolution of the economic outlook as implied by incoming information."[40] Thus, the Committee again made it abundantly clear that future policy decisions would depend on subsequent data in the context of the FOMC's expressed bias toward tightening. It was prepared to let the chips fall where they may.

But trouble soon followed, just as in May 1999, when the FOMC first immediately announced its tilt. No big differences distinguished the two cases. In 1999, the possibility no longer realistically existed for the FOMC to make a policy move in the period between meetings, so the Committee no longer was imparting directions to the chairman. Instead, its immediate announcement of the upward tilt was intended to manipulate market expectations into accurately anticipating policy firming, assuming the incoming data evolved as anticipated. But that attempt backfired because announcing immediately an inclination toward tightening inherently seemed to make market participants jittery. Thus, investors became extremely sensitive to unexpected data, market letters, and official utterances.

How such a decision nevertheless emerged in early 2006 from historical developments that culminated under Chairman Greenspan in January's FOMC vote and statement was understandable. Such a decision followed especially from the automatic quarter-point-tightening actions that had occurred since mid-2004 and the influential theoretical presumption that accurate expectations about policy on the part of invertors would improve policymaking. Indeed, providing immediate hints about future action seems to be all but irresistible. In May 1999, when succumbing to this temptation last got the FOMC into trouble, the option of later shifting from the policy tilt to a "balance of risks" construction concerning the attainment of the Fed's two main goals was available to remove the FOMC from its self-imposed quandary.

By 2006 that option seems to have been impeded, however, by a disadvantage of the decision in May 2003 to separate the two risks in the statement. After that decision, the public relations problems of citing the prospect of excessively rapid economic growth had became obvious. So instead of a concentration on the economy's risks, the FOMC's statements in March and especially in May 2006 had upgraded the depiction of the economy's forecast. That move early in Bernanke's career as chairman was all to the good as far as justifying the decision through the Fed's external communication with financial markets was concerned. But in my opinion the external mistake that accompanied it was for the FOMC also to continue to express in the statement its policy inclination toward tightening. Given that the Minutes had been released after only three weeks since the end of 2004, well before the next meeting, even continuing to include a policy inclination applying to that subsequent assembly in the vote itself also could be judged to have been a mistake.

These mistakes had adverse consequences after the May meeting, as financial markets resumed their previous shaky behavior, especially after the release on May 17 of another slightly adverse consumer price report. The core CPI in April again was up a greater-than-expected 0.3 percent, bringing the increase over 12 months to 2.3 percent. As a result,

> one measure of long-term inflation expectations—the difference between inflation-protected and regular 10-year Treasury notes—rose . . . to 2.71 percent[age points], up from 2.34 percent[age points] at the beginning of the year.[41]

Anticipating additional Fed tightening, the yield itself on the 10-year Treasury note advanced to a four-year peak of 5.19 percent, while the Dow dropped more than 214 points, the biggest fall of any day in the year to date. Between May 10 and 23, that index had plunged more than 540 points, or 4.6 percent, from a near-record level.

Media accounts started to appear trying to explain "a tumultuous year," as David Wessel phrased it. He continued,

> Global stock markets are volatile. Bond market interest rates are up . . . And a new Federal Reserve Chairman's inflation-fighting resolve is being tested. Alan Greenspan certainly picked a good time to retire.[42]

It was as if the volatility in financial markets was independent of Fed decisions. Nowhere mentioned was the fact that the Fed itself recently had ended two and a half years of telegraphing its firming moves and instead had reestablished after a seven-year hiatus a regime combining the continuation of an announced Fed tightening bias with actual policy moves that had become data dependent.

The media even began to lampoon the Fed's choice of words. As late as March 28, Nell Henderson had quoted Princeton's Alan Blinder, who predicted that one of the first acts of the Bernanke Fed will be to "adopt English as its official language."[43] But by May 12, she was making fun of the Fed's wording at its expense. For example, she was not entirely fair in translating the rap-song lyrics "It's hard out here for a pimp" into Fedspeak as "The risks remain tilted to the upside."[44] And in the interim, William Safire had written a lighthearted analysis of the Fed's language. Among other things, he asked,

> What word do they use when the policy is to slow down growth to avoid inflation? The word that economists prefer is *restrictive*, but that word is anathema in the Temple of C Street. *Restrictive* . . . conjures an image of putting the robust American economy into a straightjacket. Therefore, to hint at future restriction, the chosen euphemism has been *policy accommodation can be removed*, which Gregory Ip, then senior special writer at the *Wall Street Journal*, says "sounds like they are removing the sofa beds from the Fed's executive lounge."[45]

The volatile state of financial markets persisted. By Monday morning, June 4, the yield on the 10-year Treasury note already had fallen back to the 5 percent area, partly reflecting an ongoing appreciable pullback in stock prices in foreign countries. That afternoon, Chairman Bernanke gave a speech that pointedly left unmentioned a "pause," or any other future policy action for that matter. It expressed concern about "unwelcome developments" on the inflation front that clearly outweighed any worries about the evident "transition" to slower economic growth. Measures of inflation expectations in US bond markets dropped almost 10 basis points through Tuesday on Chairman Bernanke's "tough talk about combating inflation," as Nell Henderson put it in a variant of the previous day's headline in the *New York Times*.[46] But domestic stock prices continued their descent, with the Dow Industrials by Friday's close recording the worst week of the year to date, dropping nearly 356 points. That decline continued into the next week, as by the close on Tuesday, June 13, the index was actually down 0.1 percent for the year and off more than 936 points, or 8 percent, from its six-year high on May 10. Stock values in emerging markets, after gaining 25 percent earlier in the year to reach an apex, lost the entire amount in less than six weeks. Commodities markets, whose prices are influenced by interest rates, followed a similar pattern.

The next day, the core CPI, this time for May, for the third straight report jumped 0.3 percent, compared with an expected 0.2 percent. But this time the core measure had risen to 2.4 percent above a year earlier. "'Rotten to the core,' declared Stuart G. Hoffman, chief economist at PNC Financial in Pittsburgh."[47] Still worse, the 12-month change in the total CPI through May had risen to a troublesome 4.2 percent. Even so, the Dow rose 111 points that day. On Thursday, a nearly 200 point advance in that index, which brought about its biggest two-day gain since April 2003, followed Chairman Bernanke's reassuring words on inflation expectations.

New criticisms of the Fed's communication practices were appearing in the press: "Bernanke came in with this reputation as a great communicator," said John Caldwell, chief investment strategist for the McDonald Financial Group, part of KeyCorp, based in Cleveland. "Most of us would choose to go back to the general confusion Chairman Greenspan created."[48]

Brian S. Westbury noted the following in an op-ed piece in the *Wall Street Journal*:

> The stock, bond, currency and commodity markets are bouncing around wildly. While there are many crosscurrents, monetary policy and economic data are front and center in day-to-day market volatility. As a result, some market observers are trash-talking the new Federal Reserve Board chairman, Ben Bernanke, and blaming him for all sorts of perceived missteps.[49]

Caroline Baum summed up the recent variation in financial prices in her own florid style:

> If the first test of central bank transparency is the elimination of market volatility arising from policy makers' comments, then Federal Reserve Chairman Ben Bernanke is quickly earning an "F."[50]

John Berry reported on another pertinent quote from a market participant, who was also a former member of the Fed's staff in Washington:

> Lewis Alexander, Citigroup's chief economist, said in an interview June 9 that the markets' reactions to the string of Fed statements "reflect the fact that they really don't handle subtlety very well. . . . My bottom line is that the relatively simple way the market thinks about these things may put a limit on how transparent the Fed will want to be," he said. "If the Fed tries to be subtle in its messages, it runs the risk that it will be perceived as being inconsistent."[51]

William Niskanen, chairman of the Cato Institute, later in the month offered some sound advice. "Mr. Bernanke and other members of the FOMC should stop speculating about future changes in the Fed funds rate."[52]

Extricating Himself

Well before the June 28–29 meeting, markets had become convinced that the Fed would tighten by 25 basis points. By Monday of that week, the yield on the 10-year note almost had reached 5-1/4 percent—moving higher for nine consecutive business days, its longest losing streak since 1974. The Committee in fact did extend to 17 the string of consecutive 1/4 percentage point increases in the funds rate, bringing it to 5-1/4 percent. Even so, the statement conceded that "economic growth is moderating" and "inflation expectations remain contained." While the assessment of economic risks was partially resuscitated, though only on the inflation side, the statement softened its signal about future action by curtailing its bias toward tightening:

> Although the moderation in the growth of aggregate demand should help to limit inflation pressures over time, 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. In any case, the Committee will respond to any changes in economic prospects as needed to support the attainment of its objectives.[53]

The transcript of the June meeting revealed that Governor Donald Kohn had recognized the justification for the softer signal:

> *Mr. Kohn* . . . This is a good time to step back a bit from predicting where interest rates are going to go because I think we're less certain about where they are going to go, and so I was glad to see "some further policy firming may yet be needed" was taken out. We still have a prediction in there by saying "the extent and timing of any additional firming that may be needed." It should be clear that in the view of the Committee the next move is more likely to be up than down. But it's a less definitive statement than it was before, and I think it's appropriate to take that slight step back at this time.[54]

Sadly, apart from Kohn's flash of insight, the transcripts for 2006 to that point revealed the Committee to have been unaccountably oblivious to all the communication issues that their own decisions had roused.

Financial markets were heartened by what they perceived to be the surprisingly equivocal tone of the late-June announcement. For instance, the Dow Industrials advanced a whopping 217 points on the day, the largest point gain in more than three years. "The turnaround on Wall Street was the latest example of heightened volatility in financial markets and heightened uncertainty about Fed policy under its rookie chairman, Ben S. Bernanke."[55] Curtailing the Committee's inclination to tighten further was not fully anticipated by market participants at the time of June meeting, which surely contributed to appreciable one-time rallies in the stock and bond markets.

Jeannine Aversa noted that Chairman Bernanke's attempts to solve the problem of "communicating Fed intentions" instead contributed to volatility in financial markets:

> When Bernanke took over on Feb. 1 as successor to longtime chairman Alan Greenspan, Fed watchers hoped that the well respected economist and academic would bring an end to "Greenspeak," the obscure style favored by Greenspan. Bernanke, however, has had his own troubles sometimes communicating Fed intentions to Wall Street.
>
> "The motivation is there. The intention is very good, but sometimes the execution isn't as good as the intentions," former Fed member [Laurence] Meyer said.[56]

But a good execution of something that is impossible is rare indeed, despite the best intentions.

A reference to the underlying cause of the communication problems soon was made in an op-ed piece in the *Wall Street Journal* by Stanford's John B. Taylor:

> The lesson is clear. Attempts to discuss future interest rate movements increased volatility; halting those attempts reduced volatility. Instead of trying to talk about future changes in the interest rate, then, the Fed should simply present its analysis of inflation and the economy through statements, Minutes, biannual policy reports and occasional supportive statements by officials. Experienced people knowing the Fed's principles will be able to figure out what is likely to happen. That Mr. Bernanke indicated that he wants to stick with the policy principles ought to be enough for the markets.[57]

As a general matter, the Committee going forward could have lessened volatility in financial markets by resisting the temptation to give hints about likelihood of its own future firming, which of late had become a major phenomenon. The Committee and its chairman had contributed to volatility by attempting to communicate Fed intentions, but the economy wasn't all that predictable. Financial markets had tensed up in response to statements divulging a tightening predisposition or other comments about future policy together with data dependency.

Finally, statements by the Committee and comments by the chairman were subject to misunderstanding. For example, the Committee's statement after Bernanke's first meeting as chairman in March borrowed in full a paragraph including the phrase "some further policy firming may be needed" identical to one in the announcement after Chairman Greenspan's last meeting in January. Even so, participants in financial markets, based on recent experience, interpreted that tentative statement, contrary to the literal words, as saying that such an action was definitely coming. Next, markets took Bernanke's mention of a "pause" in his late April testimony to mean a permanent halt to tightening after a firming in May. This interpretation wasn't consistent with the word's definition. Then markets exaggerated the chairman's early June talk of those "unwelcome" inflation readings as portending more certainty about firming in August than the Fed thought the evidence on "contained" inflation expectations could justify and that subsequent data on PCE inflation further undermined. Only when the FOMC noticeably softened its tightening bias in its late-June statement could financial market participants relax.

To repeat, three lessons that emerged from the early months of Bernanke's term are: (1) investors frequently will take even carefully crafted language and carry it to unwarranted extremes; (2) emphasizing that policy decisions depend on incoming information combined with indications of a tightening bias or speculation about when the funds rate may be raised make market participants unusually sensitive; and (3) the future is so unknowable that Fed intentions often can't be formed in advance, impairing effective communication. Attempting to do so can be undone by any combination of misinterpretation, skittishness, or unexpected developments.

Even during an apparently justified policy hiatus from late June 2006 until September of the next year, underlying trouble was brewing. As the next chapter will discuss, the Fed was about to face its most severe challenge since at least the Great Inflation of the 1970s, and perhaps even the Great Depression of the 1930s. David Wessel put it this way: "[T]here was a financial volcano building beneath the surface when Mr. Bernanke became chairman in 2006." But Wessel then characterized the early Bernanke chairmanship in a way resembling the generally oblivious transcripts, which differed somewhat from the content of the chapter you have just finished. "Yet his first year was so placid that the only blemish was an indiscreet remark to CNBC's Maria Bartiromo."[58]

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]
>
> *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.
>
> . . .
>
> 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.
>
> . . .
>
> 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.
>
> . . .
>
> Finally, government economic management seemed more skillful . . . Faith in the Fed grew; Greenspan was dubbed the "maestro."
>
> 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.
>
> . . .
>
> 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.
>
> "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.

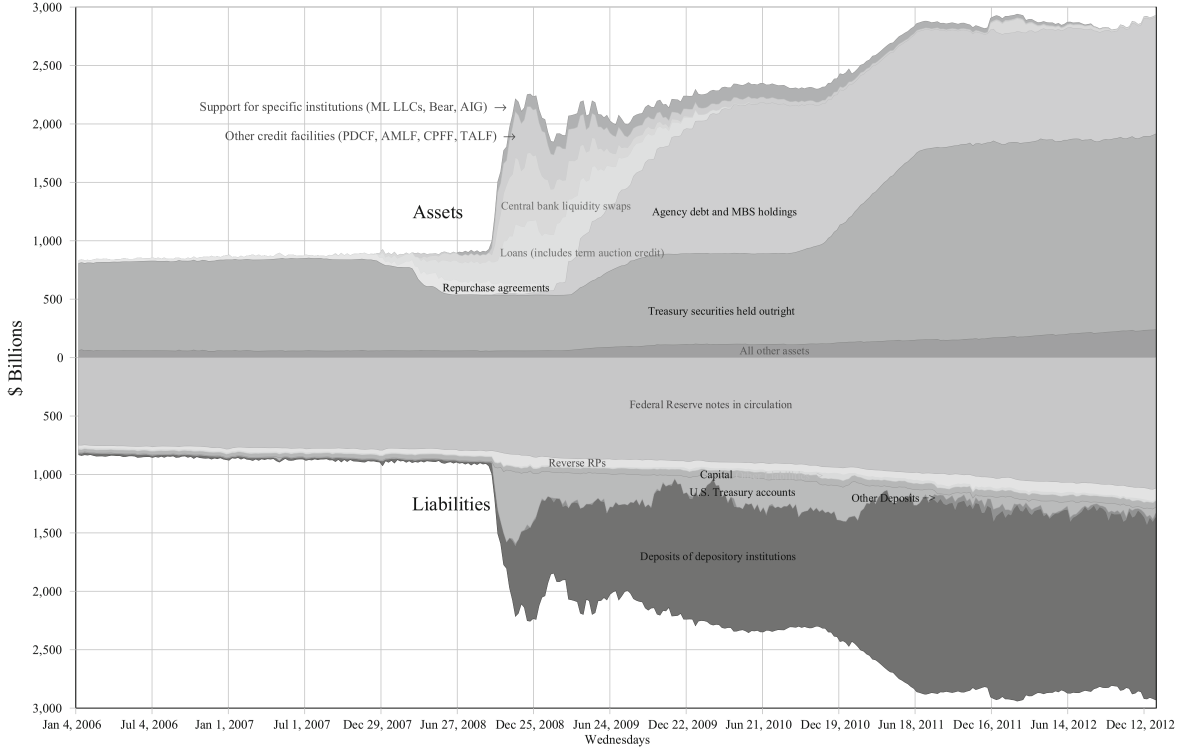

Figure 7.1 Federal Reserve's Assets and Liabilities, 2006–2012

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.

CHAPTER 8

Cruising on QE2, Twisting Again, and Designing Even More Preemptively

Having been reappointed by President Obama, and confirmed by the Senate on a 70–30 vote, Ben Bernanke began his second term as chairman in early February 2010. Heavy purchases of securities under QE1 ended as scheduled in March. But the economy turned more sluggish as it entered the second half of the year. The FOMC decided on August 10 to maintain the overall size of its assets by reinvesting the proceeds of maturing holdings of housing-related securities in long-term Treasuries. And later that month at the Jackson Hole Symposium, the chairman signaled that another round of large-scale asset purchases could well be forthcoming:

> A first option for providing additional monetary accommodation, if necessary, is to expand the Federal Reserve's holdings of longer-term securities. As I noted earlier, the evidence suggests that the Fed's earlier program of purchases was effective in bringing down term premiums and lowering the costs of borrowing in a number of private credit markets. I regard the program (which was significantly expanded in March 2009) as having made an important contribution to the economic stabilization and recovery that began in the spring of 2009 . . .
>
> I believe that additional purchases of longer-term securities, should the FOMC choose to undertake them, would be effective in further easing financial conditions. However, the expected benefits of additional stimulus from further expanding the Fed's balance sheet would have to be weighed against potential risks and costs. One risk of further balance sheet expansion arises from the fact that, lacking much experience with this option, we do not have very precise knowledge of the quantitative effect of changes in our holdings on financial conditions. In particular, the impact of securities purchases may depend to some extent on the state of financial markets and the economy; for example, such purchases seem likely to have their largest effects during periods of economic and financial stress, when markets are less liquid and term premiums are unusually high. The possibility that securities purchases would be most effective at times when they are most needed can be viewed as a positive feature of this tool. However, uncertainty about the quantitative effect of securities purchases increases the difficulty of calibrating and communicating policy responses.[1]

Playing Defense with More Quantitative Easing and Briefing the Press

In early November 2010 the Fed indeed confirmed that it would reintroduce massive purchases of securities, in this case purchasing $600 billion in Treasury notes and bonds by late June 2011. The FOMC hoped to make longer-term yields lower than otherwise would be the case. Market participants called the second round of quantitative easing QE2. But Stephen H. Axilrod, former staff director for monetary and financial policy at the Board, told me on the telephone three weeks later that he didn't think that the added purchases would work to lower rates for very long. He perceived that probably market participants were not quite as pessimistic about the economic outlook as the Fed, undergirding the opinion of the market that long rates already were close to their minimum for this cycle. He mentioned to me an old adage among market mavens—"buy on the rumor, sell on the news." In his interpretation, long rates went down speculatively on the rumor that the Fed encouraged and went up as speculators gleefully took profits and sold into the Fed's purchases. He thought as well that the QE publicity probably did convert some market investors who were more prone to inflation worries into more eager sellers.[2]

He also made another point in that phone conversation. He predicted that the large expansion of the Fed's balance sheet implied by QE2 would cause political problems, while an "operation twist" could accomplish the same end without any balance-sheet enlargement. As if on cue, Stanford's John Taylor and Congressman Paul Ryan (Republican, Wisconsin) a week later wrote that:

> If the money created to finance these asset purchases is not withdrawn in an expedient and predictable manner, the Fed risks higher inflation and a depreciated currency. On the other hand, exiting these programs too abruptly would also disrupt the economy.
>
> Those economists who believe these risks are worth taking argue that the trillion dollars Congress spent on short-term stimulus bills was not enough, and that the Fed must now step into the breach.
>
> While consistent with the "sugar-high economics" practiced in Washington of late, quantitative easing marks a further departure from the foundations of prosperity and another step toward an increasingly politicized central bank.
>
> QE1 involved the Fed in areas of fiscal policy, such as credit allocation, that are properly (and constitutionally) the domain of Congress. QE2 would double down on these expansions, as the planned purchases of Treasury securities would constitute a large fraction of soon-to-be-issued federal debt.
>
> That looks an awful lot like an attempt to bail out fiscal policy, and such attempts call the Fed's independence into question.
>
> For all these reasons, Congress should reform the Federal Reserve Act, particularly the section of the act that establishes the Fed's dual mandate. The Fed should be tasked with the single goal of long-run price stability within a clear framework of overall economic stability. Such a reform would not prevent the Fed from providing liquidity, serving as lender of last resort, or cutting interest rates in a financial crisis or a recession.[3]

The criticism from Republican sources could have been expected. But the new policy surprisingly got a sour reception from many central banks, especially in emerging market economies. Those institutions thought the Fed's renewed asset purchases would artificially weaken the dollar, hurting the exports of their countries.

In contrast, such a policy approach certainly had found avid scholarly defenders, which had been crucial in justifying the adoption of the new round of quantitative easing in the first place. Already in March 2010 a research paper written at the New York Fed by coauthors Joe Gagnon, Brian Sack (manager of the system open market account), and others had argued that QE1 had evinced, other things equal, large and permanent announcement effects:

> Some observers, noting that the 10-year Treasury yield had not declined since the inception of the [large-scale asset purchase] program, have argued that the [purchases] did not have a lasting effect. . . [S]ince November 2008[, t]he 10-year Treasury yield and swap rate increased nearly 100 basis points on non-event days, [reversing the net decline on baseline event days,] and are hence roughly unchanged over the entire period. However, there were many factors at play that would have been expected to lift Treasury yields over that period, including a very large increase in the expected future fiscal deficit, a significant rebound in the economic outlook, and a sharp reversal of the flight-to-quality flows that had occurred in the fall of 2008. It is likely those factors, and not a reversal of the effects of [large-scale asset purchase] announcements, that drove Treasury yields higher on other days. Supporting that view, other interest rates showed very different patterns than that of the 10-year Treasury yield on non-event days.[4]

Partly based on that research, economists at the Board, including David Reifschneider, the manager of the large-scale econometric model, and at the San Francisco Fed, specifically John C. Williams, appointed two months later president of the Bank, coauthored a paper claiming that the announcements of QE1 and QE2 had lowered 10-year Treasury note yields by 50 and 25 basis points, respectively. They asserted that such an effect would typically have been caused by a four times larger cut in the federal funds rate—that is, by 200 and 100 basis points, respectively. "In particular," they wrote,

> we find that the asset purchases undertaken by the Federal Reserve over the past two years, plus those currently underway, are roughly equivalent to a 300 basis point reduction in short-term interest rates. Model simulations suggest that the additional stimulus provided by these purchases is keeping the deterioration in labor market conditions from being noticeably worse than it otherwise would be; the asset purchase program may also be keeping the economy from falling into deflation.[5]

The idea was that by altering the relative volumes of securities in various financial sectors, their respective yields can be significantly affected via effects on the term premium. The impacts of the Fed's large incremental purchases of long-term debt, especially in lowering long-term mortgage rates, depend on the power of this preferred-habitat hypothesis compared with the strength of the expectations hypothesis of the term structure of interest rates.

Vice Chair Janet Yellen's talks in January and February 2011 and Chairman Ben Bernanke's testimonies in early March and mid-July 2011 explicitly drew on those papers and similar research to defend aggressively the Fed's adoption of QE2 the previous November.[6] For example, in early March the chairman responded to a question from Representative Stephen Lynch (Democrat, Mass.) about the power of these unconventional policies. Bernanke said that new security purchases can have nontraditional impacts that directly lower long-term interest rates, especially quality spreads and thus private interest rates, and directly raise stock prices, thereby indirectly stimulating aggregate demand and raising inflation expectations over time.

The chairman's mid-July testimony also emphasized a direct effect of unconventional policies on inflation expectations:

> The experience to date with the round of securities purchases that just ended suggests that the program had the intended effects of reducing the risk of deflation and shoring up economic activity. In the months following the August announcement of our policy of reinvesting maturing and redeemed securities and our signal that we were considering more purchases, inflation compensation as measured in the market for inflation-indexed securities rose from low to more normal levels, suggesting that the perceived risks of deflation had receded markedly. This was a significant achievement, as we know from the Japanese experience that protracted deflation can be quite costly in terms of weaker economic growth. (pp. 3–4.)

Given that this measure includes the inflation expectations magnitude that plausibly would be deducted from nominal bond rates to determine real bond rates, were the diminishing effect on perceived deflationary risks to be lasting, a significant additional boost to real spending would derive from this source as well.

Bernanke noted in early March 2011 that simulations of the Board's econometric model, as amended through new channels captured by judgmental "add factors," suggested a rule-of-thumb that as little as $150 billion to $200 billion in security purchases is equivalent in its financial and economic effects to a cut in the intended funds rate of 1/4 percentage point. So the $600 billion of purchases of Treasuries under QE2 would have been like a 3/4 to 1 percentage point cut in the funds rate. He cited estimates of substantial repercussions over time on real GDP, unemployment, and inflation. In his mid-July testimony he asserted that the effect of QE2 on long rates fell in a range of 10 to 30 basis points, which would normally be induced by another reduction in the funds rate of 60 to 120 basis points.

Once QE2 had ended in late-June 2011, an obvious question in my mind always was: If quantitative easing was as efficacious as the Fed had claimed while the recovery remained so tepid, then what was keeping it from implementing a third round? And the FOMC had provided a new venue to ask such questions. The Committee always had been reluctant to convene news briefings, having done so on only a couple of occasions, seemingly because the chairman, being human, could misspeak. But Chairman Bernanke's off-the-cuff answers always were extraordinarily lucid, which made this worry no longer realistic, at least during his time at the helm. So in March 2011 the FOMC decided that, starting in April, he would hold quarterly news conferences at 2:15 p.m. on the second day of the two-day meetings at which the FOMC participants updated the economic projections. He indicated that those projections were accorded a significant weight in setting policy, unlike Chairmen Volcker and Greenspan, who certainly did not do so. The FOMC also decided that on those days, it would accelerate the release of the immediate announcement from 2:15 p.m. to 12:30 p.m.

Indeed, at the second press conference on June 22, 2011, Mark Felsenthal, a reporter for *Reuters*, posed my very query, some variant of which would reoccur at each the subsequent four press sessions through June of the next year. Also, people were starting to question the actual potency of QE. A day later, Ezra Klein joked, "As one wag put it on Twitter, the bazooka Bernanke says he's got in his pocket is really just his finger."[7] As befits an economist, a more analytic take later crossed the wires: "As the markets speculated on whether the Fed would add yet more stimulus to the system, [Nouriel] Roubini dismissed the impact of central bank intervention on the real economy. 'Levitational force of policy easing can only temporarily lift asset prices as gravitational forces of weaker fundamentals dominate over time.'"[8]

After all, the long rate is not determined by the sum of the other-things-equal reactions to a protracted series of events in the past. Rather, as noted in the introductory chapter, it is a so-called jump variable, dependent predominately on changing expectations of the future path of short-term rates prior to the maturity of the instrument as well as on a time-varying term premium. But in contrast to the mostly accurate application of the theory of rational expectations only to financial markets, even in addition to reacting to speculative forces, asset prices sometimes don't move immediately to incorporate perfectly new information once and for all. Instead, even bond investors can succumb to the human emotions of shock and awe, euphoria and panic, and under- and overreaction. In the case of the earlier announcements of QE, the immediate market response of long rates had been to overreact. Yet that large initial impact did soon dissipate on its own as investors recovered, leaving little permanent effect.

Another question also remained: How would the Fed ultimately be able to raise the funds rate, given the overhang of reserves, in the early stages of policy firming? As part of the TARP package in October 2008, the Congress had given the Fed the authority to pay interest on required and excess reserves at a rate to be set by the Board. Because the rate on excess reserves should more or less set the market rate banks charge on overnight loans to each other, that authority was designed to help the Fed influence the funds rate when the time comes to begin firming.[9] This consideration is one reason I couldn't get exercised about the Fed's "exit strategy" in reducing its massive balance sheet. Through the interest rate on reserves, the Fed can determine the funds rate regardless of the level of excess reserves, which have just lain idle anyway, with the added liquidity *not* somehow finding its way into other markets. As another reason, if massively buying securities didn't have much permanent effect on long rates, then neither would unwinding it.[10] But the exit strategy is unlikely ever to be implemented anyway, since the Fed can just allow the assets to mature to avoid temporary market disruptions.[11]

Giving Explicit Forward Guidance about Policy and Operating to Twist the Curve

On August 9, 2011, the FOMC took a new tack in its communication. It not only kept the funds rate stable in a 0 to 25 basis point range but, in an unprecedented break with tradition, said that it would retain its easy policy stance not for an ambiguous qualitative interval but until a date certain at a minimum two years hence. Its statement surprised everyone by replacing its routine "extended period" phraseology with—in a new term—"at least through mid-2013."[12]

Interest rates dropped abruptly on Treasury securities across the entire maturity spectrum. For example, the rate on the 2-year note plunged 10 basis points from 0.26 percent just before the announcement to a record low of 0.16 percent, before edging up to close at 0.185 percent, also a record low. The yield on the benchmark 10-year note initially fell more than 30 basis points from 2.35 percent at 2:15 p.m. to an all-time low of 2.033 percent in intra-day trading, compared with the previous trough of 2.034 on December 18, 2008, after the collapse of Lehman Brothers. The rate closed at 2.17 percent. Stock prices evinced incredible volatility; the Dow traded over a 710 point range, but ended the trading day up 430 points.

The FOMC's decision was controversial; it elicited three dissents for the first time since November 17, 1992. The Reserve bank presidents preferred the previous wording referring to an "extended period." Presumably they in part were concerned about the inflexibility of such a pre-commitment. Although formally the FOMC was only making a forecast about its "likely" posture over that two-year interval, in practice it really could not alter its stance before then without some embarrassment.

Virtually all Fed watchers thought the statement represented a relatively modest action. For example, Neil Irwin wrote in the *Washington Post*,

> This move could provide businesses and consumers with greater certainty about the availability of low-cost borrowing as they consider making investments or major purchases, such as homes or autos.
>
> At the same time, the Fed declined to make any significant new efforts to bolster the nation's flagging recovery.[13]

The astute analyst Diane Swonk of Mesirow Financial in Chicago understandably took her cue from the FOMC's following statement:

> The Committee discussed the range of policy tools available to promote a stronger economic recovery in a context of price stability. It will continue to assess the economic outlook in light of incoming information and is prepared to employ these tools as appropriate.

In a widely shared reaction, she predicted on the PBS *NewsHour* of August 9 that the FOMC really was preparing to take stronger action in the form of more quantitative easing (QE3).

On the morning of August 11, I emailed Don Kohn, Rivane Bowden, and my daughter Sondra Abraham to confirm a reunion lunch two days later. Don had been my boss and Rivane my secretary for more than 14 years after the Board formed the monetary affairs division in 1987. Then she became Don's secretary, and she followed him to the second floor of the Eccles building in 2001. When he ascended to the Board in August 2002, she became administrator and then executive assistant, a title she retained when he assumed the vice chairmanship in July 2006. When I wrote this email, she was executive assistant to Vice Chair Janet Yellen.

> August 11, 2011
>
> Don and Rivane
> . . . See everyone on Saturday, August 13 at 12:30. Can't wait! Now I'm back to writing about the FOMC's unprecedented announcement Tuesday with its explicit two-year pre-commitment. I strongly opposed the implicit pre-commitment of initially steady and then only 1/4 point hikes at each meeting from mid-2003 through 2005. But before

the last meeting, I told Allan Meltzer that [former FOMC Secretary] Brian Madigan's assessment that the economic effects of QE1 and QE2 were "relatively modest" was a considerable overstatement! My reason was that the implicit assumption behind the model simulations that the Chairman cited in congressional testimony in [mid July]—and that was highlighted in the Vice Chair's [January and February] speech[s] on the topic—that the announcement effects of QE1 and QE2 were permanent other things equal was just wrong. Actually, those effects dissipated—especially as expectations of future policy evolved. The appreciable backup in interest rates in the months after the initial announcement of both QEs was instructive in this regard. But the two-year pre-commitment, by cementing expectations of a low funds rate, nicely solved that little problem. And the bad economic outlook and threat of medium-term deflation now render the future so dim that I had to remove my shades! The FOMC too is taking off its rose-colored glasses. So I'd have voted with the majority this time. But on the outside, besides me only Rick Santelli of CNBC realized that the FOMC announcement reflected this new understanding and hence rang "the death knell for QE3!"

Best!
Dave

Sure enough, Chairman Bernanke eschewed QE3 or any other radical initiatives for monetary policy in his widely heralded speech on August 26, 2011, at the Jackson Hole symposium. The central bankers, economists, and media Fed watchers in TV and print interviews there all said virtually in unison that the Fed was "out of ammunition." However, that is hardly the right expression to describe Fed actions that amounted to shooting blanks right up until the more effective reform of communications (rather than an action per se) announced August 9.[14]

Chairman Bernanke did say that the September FOMC meeting had been rescheduled from one to two days to allow the Committee time to examine the policy options at its leisure. On the morning of September 21, 2011, the second day of the meeting, an op-ed piece by David Malpass, a market participant and former Treasury official in the Reagan administration, emphasized the speculative nature of the effects of quantitative easing in initially reducing long rates before the actual Fed purchases begin:

> The bond market loves a whale, a big buyer who doesn't care about price. It's even better when the purchases are announced in advance, giving markets an opportunity to buy first. When the Fed signaled it would buy mortgage bonds in 2008, markets bought them heavily before the Fed, locking in huge profits.
>
> Similarly, markets bought Treasury bonds in September 2010 after the Fed signaled it would be a buyer. This drove yields down and prices up before the Fed began its purchases . . .
>
> Operation Twist (named in honor of the 1960s dance craze) was first tried in the Kennedy administration . . . In a study published in April, the San Francisco Fed said the operation, which caught markets by surprise, may have reduced bond yields by 0.15%—but only for a short period.[15]

Chairman William McChesney Martin had termed the rationale for the 1961 effort to twist the term structure "hopelessly naïve."[16]

Still, at its September meeting the Fed indeed did elect to adopt Stephen Axilrod's aforementioned idea to twist again like it did 50 years before by buying long (not low) and selling short (not high). With the same three members dissenting as in August, the immediate announcement read:

> [T]he Committee decided today to extend the average maturity of its holdings of securities. The committee intends to purchase, by the end of June 2012, $400 billion of Treasury securities with remaining maturities of 6 years to 30 years and to sell an equal amount of Treasury securities with remaining maturities of 3 years or less. This program should put downward pressure on longer-term interest rates and help make broader financial conditions more accommodative . . .
>
> To help support conditions in mortgage markets, the Committee will now reinvest principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities. In addition, the Committee will maintain its existing policy of rolling over maturing Treasury securities at auction.[17]

Bloomberg estimated that "The program will extend the average maturity of the Fed's Treasury holdings to 100 months, or 8 1/3 years, by the end of 2012, from 75 months."[18]

The Fed statement also noted "significant downside risks" to the economic outlook. In financial markets, the Fed's concerns about the possibility of more economic weakness caused the Dow to have collapsed by 675 points by the close the next day, the worst two-day loss since the depths of the financial crisis in October 2008. But at the same time the rate on the Treasury's 10-year note also had plunged more than 20 basis points to a record low (in a series maintained since 1953) of 1.71 percent. The following day evinced a partial rebound to 1.82 percent—still a record low except for the previous day's quote.

On October 4, 2011, Chairman Bernanke expressed the opinion before the Joint Economic Committee that operation twist could be expected to lower long rates by some 20 basis points, equivalent to a cut in the funds rate of 50 basis points. He expected only a "modest" effect on output, employment, and prices. At the third press conference on November 2, 2011, Neil Irwin of the *Washington Post* asked a very perceptive question. He noted that the FOMC's new real growth forecasts represented the "third straight downgrade."[19] He wondered if there was a systematic problem. Chairman Bernanke replied that the question was a fair one. He pointed to problems in the housing market and said, "Evidently . . . the drags on the recovery were stronger than we thought."[20] The reason that Irwin's observation was the case remained unstated: contrary to the Fed's presumption, operation twist, like QE2, in fact was exerting little, if any, simulative force.

When the original maturity-extension program ended in June 2012, the Fed renewed it through year-end 2012. The FOMC stated its intent to buy each month another $45 billion of Treasury securities with remaining maturities of 6 to 30 years and sell a like amount of shorter-dated federal debt. In immediate reaction to the announcement, the yield on the 30-year Treasury bond moved down somewhat, the 10-year rate held steady, while shorter-term Treasury rates climbed. At his sixth press conference in response to a question from *The Economist*'s Greg Ip, Bernanke noted, "We've taken maturity extension about as far as we can."[21]

In March 2012 I had spoken up in the question period after a theoretical paper on quantitative easing by Mark Gertler and Peter Karadi led things off at a Board conference.[22] The conference had been held on March 23–24, 2012, in honor of retiring Vice Chairman Kohn.

> I'm Dave Lindsey. I was Don's deputy for 14 years starting in 1987. I couldn't have asked for a better boss.
>
> This paper used simulations of a theoretical model with assumed coefficient values to replicate the results of previous empirical research. Because of preferred habitat effects, QE in that literature permanently lowered bond rates, other things equal. An early paper by Joe Gagnon, Brian Sack, and others contained a long paragraph defending that assumption. Similar later work by John Williams, Dave Reifschneider, and others containing simulations of the Board's econometric model relied on that assumption. It's that assumption that I'd like to challenge briefly.[23]
>
> Bond rates reversed course in the months after the announcement of QE1 and QE2, backing way up. Steve Axilrod noted in late 2010 that speculators had taken profits selling securities at an artificially low interest rate to the Fed. David Malpass similarly pointed out in an op-ed piece ten months later that speculators had found the Fed, as a huge price-insensitive buyer, to have been ideal.
>
> A close analogy to QE is sterilized intervention, which alters the relative holdings of foreign exchange in the public's hands. But research indicated that the initial impact of that intervention soon wore off, as Ted Truman can attest. The lack of lasting effects was verified in a National Bureau of Economic Research Working Paper in 2010 by Bordo, Humpage, and Schwartz.[24]
>
> What would happen if you tweak your model to capture sterilized intervention? My question is a variation on the old economist joke. The empirical evidence showed that sterilized intervention doesn't work in practice, but does it work in theory?

As I concluded, I was looking at Jean-Claude Trichet, the former president of the ECB. On hearing my joke he smiled broadly. Interestingly, he later finished his luncheon talk with his own joke on theory and practice having a similar meaning in the form of a quote from Albert Einstein: "In theory, theory and practice are the same. In practice, they are not."

Giving More Distant Explicit Forward Guidance about Policy

More reforms to communications remained a primary component of Bernanke's policy strategy. In a speech on October 18, 2011, he hinted that future communication was likely to provide more forward-looking guidance. Indeed, a subcommittee on communications, which had been formed in 2010 and was headed up by Vice Chair Janet Yellen, intended to do just that.

Since the financial crisis of 2008, the Fed understandably had wanted to use its communication procedures to ease the effective stance of policy further, thereby stimulating the economy. Ironically, a technical paper in 2010 went so far as to claim that "conditionality was introduced in June 2004—the point at which the FOMC began steadily raising the target federal funds rate by 25 basis points per meeting until the rate reached 5.25 percent in June 2006."[25]

Yet as a logical as well as a public relations matter, "conditionality" doesn't mix with "pre-commitment" to a protracted series of quarter-point rate hikes. Indeed, at the lower bound, a monetary policy of unconditional commitment to a fixed low funds rate is superior as a stimulus to spending than discretionary conditionality. The former would induce lower long rates precisely because the latter could sanction the prospect of premature tightening. The Fed's August 9, 2011, prediction of a minimal funds rate until mid-2013, though not an absolute unconditional commitment, suggested an easier stance than financial markets previously had expected.

But what about the further step of commitment to a *strict but responsive rule* conditional on specific levels of inflation and unemployment, as advocated by Meltzer and McCallum using the monetary base (see Chapters 1 and 5) and recently by Chicago Fed President Charles Evans using the funds rate at the lower bound? The early articles by Kydland and Prescott and by Barro and Gordon justifying strict central bank commitment to a rule rather than meeting-by-meeting discretion assumed that the central bank otherwise would inappropriately try to drive the measured unemployment rate below the natural rate consistent with steady trend inflation.[26] But such a notion was convincingly contradicted by Blinder, who said that he never saw any attempt to push unemployment below FOMC's perception of the natural rate.[27] The latest research, though, has defended a central bank at the lower bound that commits to a strict but responsive rule that never embodies an artificially low natural unemployment rate.[28] Because in such a case the Fed would commit to follow a responsive rule implying extended ease until the economy attains specific values for inflation or unemployment, market participants could confidently anticipate a still lower funds rate than otherwise over time, which could well impart even more stimulus than conditionally promising ease until a fixed date.

The discussion by Committee participants in the Minutes of the November 2011 meeting recognized that

> [conditional] commitments could foster better macroeconomic outcomes than a discretionary approach of reoptimizing policy at every meeting, so long as the public understood the central bank's strategy and believed that policymakers would follow through on those commitments. Some participants noted that conditional commitments might be particularly helpful in providing additional accommodation and mitigating downside risks when the policy rate is close to its effective lower bound, because a central bank can commit to a shallower interest rate trajectory than investors would expect if policymakers followed a purely discretionary approach.[29]

Initially, though, the FOMC decided to adopt a different approach to becoming more transparent about future policy in order to foster monetary policy ease. Some time earlier, a research paper at the San Francisco Fed had contended that the FOMC should release its own conditional forecast of its policy rate.[30] With a delay of a few years, the Committee set out on a course to take this advice. At the early November 2011 meeting the group discussed the notion that the FOMC in its immediate announcement should be more forthcoming in providing a detailed specification of its future plans for the funds rate. The Minutes contained the following:

> [P]articipants generally expressed interest in providing additional information to the public about the likely future path of the target federal funds rate. The Chairman . . . encouraged the subcommittee [on communications] to explore potential approaches for incorporating information about participants' assessments of appropriate monetary policy into the Summary of Economic Projections.[31]

Chairman Bernanke had foreshadowed such a step on July 19, 2006, during the question period in his second Monetary Policy testimony before the Senate Banking Committee. Senator John Sununu (Republican, New Hampshire) noticed the two pointed references in his testimony to the vague assumption of "appropriate monetary policy" that undergirded the FOMC's forecasts. He wondered if in the future that phrase could be replaced by a more informative underlying assumption. Chairman Bernanke responded that identifying the interest-rate projections behind the central tendency projections of the economy was impossible under current procedures, because no individual was asked to report the specific path of monetary policy settings being contemplated. He agreed to see if improvements were warranted.

At the December 2011 FOMC meeting, the participants finally decided to enhance transparency by issuing next month their finds rate projections for each year-end and in the longer run, along with the other measures released four times each year. The Minutes of the January 2012 meeting said that the Committee thought the action would

> help the public better understand the Committee's monetary policy decisions and the ways in which those decisions depend on members' assessments of economic and financial conditions . . . Some participants expressed concern that publishing information about participants' individual policy projections could confuse the public; for example, they saw an appreciable risk that the public could mistakenly interpret participants' projections of the target federal funds rate as signaling the Committee's intention to follow a specific policy path rather than as indicating members' conditional projections for the federal funds rate given their expectations regarding future economic developments . . . [S]ome participants did not see providing policy projections as a useful step at this time.[32]

In the event, the FOMC's statement at 12:30 p.m. on January 25, 2012, anticipated that economic conditions "are likely to warrant exceptionally low levels for the federal funds rate at least through late 2014."[33] The FOMC thus extended the explicit date from "at least through mid-2013" that the FOMC had specified in the August statement. In response the yield on the 10-year Treasury note fell 15 basis points to 1.91 percent. But then shortly before the chairman's 2:15 p.m. press conference the individual projections for the funds rate of the Board members and Reserve bank presidents were released. They sounded a decidedly more hawkish tone, and by the close of financial markets that yield had moved up to around 2 percent.

Bernanke correctly emphasized to the press that: (1) a majority of 9 of the 17 projections called for a funds rate of less than 1.0 percent at year-end 2014, with a median of 0.75 percent; (2) as captured in the statement, the tightening process would have had to begin before then at a lower base rate; and (3) policy decisions necessarily had to be made, not by the pre-submitted projections, but after the discussion at the FOMC meeting itself. But he didn't mention some features seeming to be inconsistent with "exceptionally low levels for the federal funds rate at least through late 2014": (1) the weighted-average of all the individual funds rate projections for the end of 2014 was 1 percent, and the 0 to 2.5 percent central tendency of the forecasts had a midpoint of 1.25 percent; (2) the ten voting members in 2012, despite the dissent at this meeting from Richmond's Jeffrey Lacker, had a more dovish center of gravity than did all the participants;[34] and (3) in the statement current FOMC members were predicting the policy stance of a Committee in 2014 with a different makeup owing to the rotation of 11 presidents and probably with a different chairman.

As proof of how times have changed, in 1976 Arthur Burns had commented on a proposed legislative mandate: "If the central bank is forced to announce interest rate intentions or expectations, the result could only be misleading."[35] His testimony in 1977 added that "The capacity for mischief inherent in the interest rate provision is so apparent that I find its inclusion in the bill inexplicable."[36] As for the eventual impact of the more explicit forecasts of anticipated policy settings, recall that similar FOMC steps in predicting its own behavior had provoked adverse unintended consequences in the summer of 1999 and as the middle of the first year of his chairmanship approached in 2006 when Bernanke faced communication problems. So, did the FOMC tread carefully enough in making this change in communications, especially given the eventual risk of fostering market volatility and political pressure when it becomes necessary to announce that tightening is imminent? I doubt it, but then I'm old-fashioned. I agreed with the first position in this story:

> Talking about future policy was a longstanding taboo among central bankers, who worried that investors would treat the predictions as promises and react badly when some predictions inevitably were off base. But the Fed now is casting its lot with the growing camp that regards shaping expectations as a primary tool for monetary policy, and is eager to seize any opportunity.[37]

The discussion in the January Minutes noted that the potential problem that market participants could mistake a conditional prediction for the funds rate as a promise to attain a specific policy outcome could be avoided by being more explicit about the conditions that would induce the Committee to alter its current policy, as in Evans' previous recommendation.

> Several participants thought it would be helpful to provide more information about the economic conditions that would be likely to warrant maintaining the current target range for the federal funds rate, perhaps by providing numerical thresholds for the unemployment and inflation rates. Different opinions were expressed regarding the appropriate values of such thresholds, reflecting different assessments of the path for the federal funds rate that would likely be appropriate to foster the Committee's longer-run goals. However, some participants worried that such thresholds would not accurately or effectively convey the Committee's forward-looking approach to monetary policy and thus would pose difficult communications issues, or that movements in the unemployment rate, by themselves, would be an unreliable measure of progress toward maximum employment.[38]

Markets for federal funds futures didn't believe that the Fed would wait until late 2014 to begin raising the funds rate. And as economic data seemed to strengthen further in February and March 2012, investors in this market fingered a date for the first tightening that moved even closer than implied by the passage of time. Indeed, Steve Liesman astutely raised the possibility on CNBC on March 26 that one point of the Fed's conditional announcement that it didn't expect the economic data to justify tightening until late 2014 could be to foster such a big reduction in long rates that the Fed would be proven so wrong by the induced economic stimulus that it would be forced to go back on its prediction for unchanged policy and have to tighten sooner to keep inflation under control. I wondered if things had come to such a pass that Liesman could possibly be right. But then I realized that concerning the thought process of the mere mortals at the Fed, Liesman's conclusion was *too* astute. The possibility he posited simply couldn't be the case because his characterization would imply that the FOMC was too clever by half.

Vice Chair Yellen brilliantly defended the practice of giving forward guidance in her speech to the Money Marketeers on April 11, 2012.[39] I emailed her the next day:

> Janet
> Great to see you at the Board's conference last month! Also, I thought your speech yesterday to the Money Marketeers was suburb! I agreed with every word, with the sole exception of your last sentence. In more than 14 years of working with Rivane, I don't remember her ever making a typographical error. However, she uncharacteristically forgot to type "never" after the first "could" in the following sentence: "In particular, further easing actions could be warranted if the recovery proceeds at a slower-than-expected pace, while a significant acceleration in the pace of recovery could call for an earlier beginning to the process of policy firming than the FOMC currently anticipates."
>
> Best!
> Dave

Her email in response was characteristically nice.

Reflecting the Yellen subcommittee's efforts, the FOMC after its January 2012 meeting also announced a 2 percent long-run objective for inflation in the chain-weighted index for personal consumption expenditure (PCE). Before then, given the problems in the financial crisis associated with the zero lower bound on the funds rate, the FOMC had found it necessary over time to raise its increasingly explicit goal. As shown in Chapter 7, in October 2007 it had issued for the first time a projection for more than three years out (through 2010) that was far enough ahead for the Fed's influence to have transmogrified its forecast into a goal. At that time it had hinted that its target for inflation in those consumer prices had a central tendency of 1.6–1.9 percent. In January 2009 it began to formulate a forecast for an obvious goal: a longer-run steady state value for PCE inflation with a central tendency of 1.7–2.0 percent.

To place the FOMC's decision in proper context, some intellectual history on inflation targeting is in order. Despite its vast popularity around the world, the original procedure, as Bernanke intimated, had serious analytical problems. Papers by the Board staff's Jon Faust and Dale Henderson and Columbia's Michael Woodford explain many of them, so a brief summary here is sufficient.[40] The path for inflation and the short rate under that original version of inflation targeting was far from optimal. Minimizing the social loss caused by inflation and output gaps clearly doesn't call for always getting inflation back to target over a fixed two-year horizon regardless of the size and nature of output and inflationary surprises. Moreover, after an initial miss in inflation, why should the central bank then have to adjust the overnight rate all at once so as to bring the two-year inflation forecast in line? What about all the well-known virtues of gradualism, that is, interest rate smoothing?

And in adjusting the current overnight rate just enough to imply hitting the inflation target two-years from today, why should a central bank also have to plan on subsequently keeping the overnight rate flat during that whole time span? That intention is unlikely to seem very plausible. Instead, why shouldn't the central bank just plan on relying on a pattern of reactions to key economic measures in future years as well as in the present that is consistent with its own past behavior?[41] Yet the future is normally so uncertain that such rate predictions aren't worth much, especially for a more distant horizon. Even so, market participants could well interpret the central bank's imprimatur for that future funds rate path as a commitment. (As we have seen, these considerations didn't keep the Bernanke Fed from giving explicit forward guidance about the likely date of first tightening staring in August 2011 and conveying the funds rate projections of individual FOMC participants beginning in January 2012.)

Petra Geraats demonstrated in 2008 that the original version of flexible inflation targeting also suffered from a problem of time inconsistency.[42] If the central bank at each new decision point over time always plans on returning inflation to target in exactly two more years, then even without *any* unexpected developments, the passage of time alone will alter the planned path for inflation and the short rate. For example, an actual rate of inflation that previously had moved above the target by accident would imply that the central bank at its second decision point can lower the level of the short rate that it intends to hold steady for another two years because now it can plan to bring inflation back to target at that later date. And so on. Problems, problems!

Despite some lessening of the variability of the real side with a more flexible approach that plans to return inflation to its target rate only over time, a fixed horizon would mean that output and employment still would be underemphasized relative to inflation in following the hierarchical procedure of inflation targeting. Governor Meyer interpreted the hierarchical regimes of inflation-targeting central banks to mean that they "constrain monetary policymakers from responding to deviations of output from its target, except when the inflation target has already been met, or policymakers can project that it will be met in a reasonable period."[43]

This constriction struck him as so sub-optimal that on June 19, 2003, after he returned to the private sector, he pointed out to a conference at the inflation-targeting Bank of Canada that any central bank in the real world simply has to put more weight on activity than that. He thought that this more sensible approach to the two objectives is evident around the world, even among those central banks that allegedly put first priority on the inflation target. Thus, he challenged the widespread rhetoric—accepted by naïve academics—that an explicit inflation goal and a periodic report that focuses on attaining that objective in two years makes an inflation-targeting central bank automatically more transparent than a conventional one. Instead, in his opinion the reality is exactly the opposite because inflation-targeting central banks don't actually come clean about their relative weights on the objectives. The Canadian central bankers, after an initial pause, laughed heartily as though he had been telling a joke. But I perceived him to have been deadly serious.

Although I remember the incident vividly, this point does not appear in his printed remarks.[44] However, nearly two years earlier, he had said the following:

> [T]ransparency about monetary policy requires a full and accurate account of the objectives. But pretending that inflation is the only objective, while taking account of output variability in practice, only makes for less-transparent policy and ensures that the central bank will have difficulty communicating the rationale for its policy actions.
>
> I remember the first conference I attended after joining the Board of Governors. Two foreign central bankers—each from inflation-targeting countries—lectured me about how "good" central bankers acted in public. They each told me that a disciplined central banker would never admit to having a stabilization objective and never admit that there was a cost of lowering inflation. Such admissions, they warned, would only undermine the public's confidence in a central banker's commitment to price stability. I responded that this lesson in central banking surprised me. I would not have thought obfuscating about policy objectives or the way monetary policy affects the economy would have enhanced the credibility of a policymaker. I still don't.[45]

In his later book Meyer reported criticism of his views from the liberal side. It happened on the floor of the House of Representatives on April 29, 1997, when Representative Barney Frank (Democrat, Massachusetts) spoke.

> The Federal Open Market Committee a couple of weeks ago decided that we were creating too many jobs too rapidly in America and, fearing that this would be destabilizing, they raised interest rates.[46]

His book also examined criticism from the conservative Editorial Board of the *Wall Street Journal* on May 20, 1997. He asserted that in its view the conventional wisdom among economists about the existence of a "natural" rate of unemployment is "politically incorrect."[47] He had realized that the right wing also will condemn anyone who calls on standard economics to observe—in an idea originated by Milton Friedman, hardly a notorious left-winger—that when a central bank pushes the unemployment rate below the natural rate it will cause accelerating inflation. "They translated my statement" of that truth, "into the proposition that 'inflation is caused by too many people working'."[48] He reacted with some translating of his own. "I would translate the editorial writer's position into "There is no limit to how low the unemployment rate can go without triggering higher inflation. Oh, to live in a world without limits."[49]

In light of all these obvious difficulties, the popularity of inflation targeting in academia, at the International Monetary Fund (IMF), and abroad is rather hard to fathom. But popular it was. In the 20 years after New Zealand introduced inflation targeting in 1990, more than 25 central banks had followed its lead.[50] But perhaps in the last decade and-a-half, the new adopters were accepting the more nuanced version of the flexible approach advocated later by economists, especially Lars Svensson.[51] Starting in the second half of the 1990s, research by Svensson honed the concept considerably further.[52] Toward the end of the 1990s he already had shown that for optimality the horizon for returning inflation to target must vary. He also contended that, assuming that the weight on the real side is not "very large," "it is appropriate to label" optimal control methods to minimize both an inflation and real-side goals as "(flexible) inflation targeting" rather than "inflation- and output-gap-targeting," especially since the label is already used for the monetary policy regimes in New Zealand, Canada, UK, Sweden, and Australia.[53]

In 2010 Svensson wrote:[54]

> Regarding the policy horizon, inflation targeting has sometimes been associated with a fixed horizon, such as two years, within which the inflation target should be achieved. However, as is now generally understood, under optimal stabilization of inflation and the real economy there is no such fixed horizon at which inflation goes to target or resource utilization goes to normal . . . In line with this, many or even most inflation-targeting central banks have more or less ceased to refer to a fixed horizon and instead refer to the "medium term." (p. 41.)
>
> Previously, Bank of England and the Riksbank assumed a constant interest rate underlying its inflation forecasts, with the implication that a constant-interest-rate inflation forecasts that overshoots (undershoots) the inflation target at some horizon such as two years indicates that the policy rate needs to increased (decreased). This is a far-from optimal targeting rule that has now been abandoned . . . (p. 26, footnote 31.)
>
> [A]nnouncing a policy-rate path . . . is the most consistent way of implementing inflation targeting, and provides the best information for the private sector. The practice of deciding on and announcing optimal policy-rate paths is now likely to be gradually adopted by other central banks in other countries, in spite of being considered more or less impossible, or even dangerous, only a few years ago . . . (p. 43.)
>
> [F]lexible inflation targeting means that monetary policy aims at stabilizing both inflation around the inflation target and resource utilization around a normal level, keeping in mind that monetary policy cannot affect the long-term level of resource utilization. Because of the time lags between monetary-policy actions and their effect on inflation and the real economy, flexible inflation targeting is more effective if it relies on forecasts of inflation and the real economy. Therefore, flexible inflation targeting can be described as "forecast targeting." (p. 52.)

Really? My 2003 unpublished book suggests that since 1968 the Fed often has relied at least in part on forecasts of both inflation and resource gap measures—as in a forward-looking Taylor Rule. These conclusions characterize estimates made by mid-2003 under Chairmen Burns, Miller, and the first 15 years of Greenspan. So, did all those findings imply that the Fed—apart from not announcing an explicit inflation goal until recently—really had engaged in "flexible inflation targeting?" I'm reminded of a passage in *Through the Looking Glass*: "'When *I* use a word,' Humpty Dumpty said in rather a scornful tone, 'it means just what I choose it to mean—neither more nor less.'"[55]

Now back to the FOMC's decision to reveal a single valued 2 percent inflation goal. To further mute any market impact, Chairman Bernanke's comments at his fourth press conference certainly conveyed the findings just described of the most sophisticated research on the topic. He told the assembled reporters that, even though the FOMC somewhat controversially had set a quantitative goal for only one of the two main objectives, the basic approach to policy design remained absolutely unaffected. Also, the Committee had just issued a statement of policy principles.[56] It advanced the following idea: The Fed could determine the long-run steady state value only of the inflation one, so it couldn't be expected to set a longer-run goal for the non-monetary one for maximum employment. (Why not?) After all, the natural rate of unemployment, as well as maximum production, was determined only by real-side economic forces. (So what? Wasn't the reason for not being explicit that those sustainable real values were impossible to pin down with any certitude, partly because they were subject to unexpected change over time?) Even so, Bernanke convincingly stressed that the Fed would continue to put equal weight on the two separate goals, a thought certainly reinforced by the statement.

In response to a question from Greg Ip from *The Economist*, Bernanke emphasized, consistent with his promise at his confirmation hearing, that in the face of an accidental divergence of inflation from 2 percent, the time interval of its projected return would not always stay the same—two years had been common practice in the original adopted variant of flexible inflation targeting.[57] Instead, Bernanke seconded what this chapter has contended was the most sophisticated advice of professional monetary economists: if the measured inflation rate happened to diverge from 2 percent, the interval for the Fed's desired path back should depend on all the circumstances, including the likely path of unemployment.[58] In answering Patrick Welter from the *Frankfurter Allgemeine Zeitung*, Bernanke concluded:

> Now, are we inflation targeters? . . . [A]s I mentioned earlier, I think, to Greg, we're not absolutists: If there's a need to let inflation return a little bit more slowly to target in order to get a better result in employment, then that's something that we would be willing to do . . . [I]n terms of terminology, I guess I would reject that term for the Federal Reserve because we are going to be evenhanded in treating the price stability and maximum employment parts of our mandate on a level footing.[59]

Despite the Fed's best efforts, its rationale for the explicit inflation goal failed to be accepted in all quarters, as exemplified by two experienced monetary economists. Richard Clarida, now at Pimco, wrote "So now it's official. The Fed is an inflation targeter. More specifically, the Fed is an inflation *forecast* targeter and seeks to deploy policies that will deliver 2% inflation over the longer run, which it deems to be a period of 'perhaps 5 or 6 years.'"[60] Richard Anderson, vice president at the St. Louis Fed, said, "The Federal Open Market Committee (FOMC) formally adopted inflation targeting at its January 24–25, 2012, meeting."[61] In my debatable opinion, they conflated the Fed's announcement of a newly specific inflation objective with Svensson's articulation of inflation targeting itself because his inflation forecast targeting closely resembled traditional forecast-based optimal control procedures.[62]

I will leave drawing a moral from this story as an exercise for the reader. But I hope it will be general enough apply to three other stories: (1) the observation by Chairman Burns that in a democracy a tightening of monetary policy could evoke "violent criticism" by "frustrating the will of . . . a Congress . . . intent on assuring that jobs and incomes were maintained;"[63] (2) the misleading sense that Chairman Volcker found it necessary to perpetrate shortly after the reform of October 1979 that "I would not, in terms of a possible recession, which has been discussed for months, trace that to our particular actions. The situation we had was rising inflation, speculation, a weak dollar;"[64] and (3) the reluctance that Chairman Greenspan expressed after mid-1996, both at FOMC meetings and publicly in speeches and testimonies, to buy into the concept of a reliable economy-wide natural rate of unemployment.

In general, the new enhanced procedures for communication, including the ever lengthening Minutes themselves, already seemed to have become increasingly problematic. The Minutes for the January meeting noted that "a couple of participants expressed concern that some press reports had misinterpreted the Committee's use of a date in its forward guidance as a commitment about its future policy decisions." This story obliquely touched on both points:

> The Fed's minutes were somewhat more detailed than usual because of Bernanke's push to increase openness at the central bank.
>
> Several analysts, however, said that the minutes did not shed much new light on the Fed's thinking. In fact, the minutes revealed there was concern at the central bank that increased openness might not pay benefits. Fed Governor Daniel Tarullo decided against voting to approve a lengthy statement clarifying the Fed's strategy for managing economic policy "because he questioned the ultimate usefulness of the statement," the minutes said.[65]

Tarullo's dissent may have been because he was a practical lawyer as well as a more theoretical ex-university professor. After all, the aforementioned new statement of principles written by the Yellen subcommittee was unlikely to have been assimilated fully by the average market participant even after careful consideration. But given that it was buried under an avalanche of information relating to the new projection procedures for the appropriate funds rate, not to mention the ever more complicated immediate announcement and the wide-ranging subjects covered at the chairman's press conference, the average investor would never have had the patience to have studied it carefully. For the media, the public, or the markets to have reacted appreciably to the new statement of principles, it would have had to have said something novel as well as to have appeared on a slow news day. In fact, neither was the case. Going forward, it's easy to predict that the specific wording of the initial statement of principles simply will be ratified by the Committee each succeeding January without making much of a splash in the public domain. (This prediction was borne out by experience in the three subsequent years.)

The media elaborated further on the Fed's communication problems:

> Experts and investors have continued to disagree about the plain meaning of the Fed's recent policy statements. Some say the increased volume of communication is creating cacophony rather than clarity. Political criticism of the Fed has continued unabated.
>
> And the economists and analysts who are paid to predict and translate the Fed's actions and pronouncements for investors say that demand for their services has only increased. "It's been one of the most amazing things," said Diane Swonk, chief economist at Mesirow Financial, a Chicago investment firm. "Over time I would have expected increased transparency to diminish my role in translating monetary policy for the markets."[66]

The public confusion could only have been magnified on April 25 by the wider gap between the unaltered forward guidance of "exceptionally low levels for the federal funds rate at least through late 2014" in the Committee's statement versus the more restrictive projections of the 17 individual FOMC participants for that time. Only four rather than six of them predicted the current funds rate still would prevail by the end of 2014, and the median forecast for them rose to from 0.75 to 1.0 percent. Indeed, Bernanke suggested in his accompanying press conference that although the wording of the funds rate prediction was ambiguous, he personally interpreted it as meaning "close to where we are now."[67] By June, though, the addition of two new Board members had returned to six the number of participants expecting no change by late 2014, and, also reflecting the softer economic outlook, the median projection for then had dropped all the way to 0.5 percent.

The FOMC's statement after its June 19–20 meeting added wood fuel to the fire used to simmer market expectations of more accommodation: "The Committee is prepared to take further action as appropriate to promote a stronger economic recovery and sustained improvement in labor market conditions in a context of price stability."[68] Speculation about further "stimulation" either in August or September was itself stimulated additionally in late July by two supposedly "in-the-know" newspaper reporters, Jon Hillenrath and Binyamin Applebaum.[69] Still, based on his statement after the episode with Maria Bartiromo discussed in Chapter 6, Chairman Bernanke would have kept his own council. Instead, it must have been Committee doves who had been working the phones. After all, traditionally the FOMC would not have adopted a major new program like QE3 so close to an election, particularly when one party had publicly voiced its fundamental opposition. True, FOMCs, being apolitical, in the past have downplayed upcoming elections enough to have moved the targeted funds rate as late as October in an election year. But the implementation of the unprecedented procedure of open-ended QE3 even as early as September would have been an entirely different matter.

Another possibility was frequently mentioned, including by former Vice Chairman Alan Blinder. That policy option was to lower the 25 basis point interest rate that the Fed paid on reserves to zero, as the ECB had recently done. Although Blinder approved of the ensuing hit to the profits of banks, which were getting a payment of around $3-3/4 billion at an annual rate on about $1-1/2 trillion in excess reserves, it remained the case that the Fed would hesitate before reducing depository profits that much, in light of the continued pressure on earnings in any event. True, the effective return on interbank lending in the funds market had been about half the Fed's 1/4 percent interest payment on the alternative investment of simply holding excess reserves, so lowering the latter rate to zero would impart some incentive to lend. But not much, as a zero return had prevailed in the thirties, but the elevated level of those reserves resulting from massive Fed purchases of Treasury securities in the open market from February to June 1932 had minimal expansionary impact. Nor did a zero return on excess reserves render the Bank of Japan's quantitative easing effective during the half a decade after March 2001.

Although the Fed took neither of these policy actions at its August 1 meeting, that day still was historic because it was fraught with symbolic significance. The clash of perspectives toward QE was personified earlier that day by the heated debate on CNBC's *Squawk Box* between Stephen Roach (senior fellow at Yale University, formally of Morgan Stanley Asia, and long ago a senior staffer at the Board) and Larry Meyer (of Macroeconomic Advisors, formerly a Board member).[70] Roach argued that the Fed's unconventional policies starting with QE2 in reality had been "impotent," much like the roughly $830 billion fiscal stimulus package in February 2009, and that the models at Macroeconomic Advisors suggesting the opposite ignored the clear lessons of recent years.

Meyer well represented the research economists at the Fed and many former Fed staffers in claiming that counterfactual simulations of econometric models showed scientifically how bad things would have been absent such policies.[71] In contrast to this position, my impression is that historians instead typically rely on concrete documents and eschew using counterfactual analysis because knowing how the hopelessly complex reality of alternative historical scenarios actually would have played out is impossible. My first cousin Ralph Levering, then a professor of American history at Davidson College, brought this observation to my attention in personal correspondence many years ago.[72] Their inescapable ignorance, of course, owes to the law of untended consequences, which in turn would reflect the fact that human beings are not omniscient gods.

Bond yield movements offered Roach aid and comfort, as Spencer Jakab noted:

> Bond buying also has had less impact in terms of holding down interest rates than many observers assume. By March 2010 and June 2011, when the first two full-fledged bond-buying efforts ended, 10-year Treasury notes yielded 0.74 and 0.51 percentage points more than when they were announced, respectively.[73]

Off camera on the day of his appearance, Roach reportedly denigrated Meyer as a "typical Fed guy." Unfortunately, he had a point concerning the tendency to accept research studies lending support to Fed policies that were at some stage in the process of publication, sometimes even before (like-minded) peer review. The Fed's research indeed had supported the aforementioned simulations of the Board's macroeconomic model that were cited by Bernanke. Both those model simulations and the inclusion of the results in Bernanke's testimony had been overseen by David Stockton, then director of the Board's Division of Research and Statistics but at the time of the Squawk Box debate employed by Meyer's firm Macroeconomic Associates.

In countering claims of Fed culpability for the housing bubble, in March 2012, as discussed in Chapter 7, Bernanke mentioned a paper by Carmen Reinhart and Vincent Reinhart arguing that long-term interest rates didn't move enough to much affect house prices.[74] But only by ignoring the effects of the policy pre-commitments could the paper interpret the historical evidence to suggest that short-term rates don't systematically influence long rates.[75] To me that implausible conclusion represented an apologia for the excessively easy monetary stance pursued by the Fed from the autumn of 2003 through much of 2005. Vince Reinhart himself had defended that approach during part of his nearly six-year tenure from 2002 on as FOMC secretary.[76]

But to his credit, and unlike me, Reinhart also later correctly predicted that the Fed would adopt QE3, though his timing was off. The following press report ran in early June 2012: "Vincent Reinhart, Morgan Stanley's chief U.S. economist, thinks there's an 80 percent chance that a new quantitative easing program is announced at the June 19–20 FOMC meeting." Perhaps being a recent division director at the Board predisposed one to support quantitative easing. Besides the Stockton and Reinhart examples, consider Nathan Sheets, Director of the Division of International Finance for nearly four years after September 2007 but appointed Global Head of International Economics at Citibank only months after the Reinharts's study appeared. He assembled an empirically based defense of such a policy approach.[77]

Here's another example of Roach's notion of a typical Fed guy: On July 13, 2012, Rick Mishkin, a former Board member and author of the leading textbook in money, banking, and financial markets, had appeared on CNBC's *The Kudlow Report*.[78] He energetically defended the potency of quantitative easing based on "a lot of research" and "a tremendous amount of evidence" that actually were subject to alternative interpretations.

Roach could point to other lines of defense as well, including a point by John Hussman:

> The more troubling issue is that Fed papers on the effectiveness of QE focus almost singularly on the effect of QE on interest rates and risk premiums in the financial markets, with the notable absence of any analysis of the resulting effect on the real economy. This is like showing that squirting gas into an engine will make the engine run faster, without any concern for the fact that there is no *transmission* that connects the engine to the wheels. In a nutshell, the problem with QE is *the lack of any material transmission mechanism from monetary interventions to real economic activity*.[79]

Also, much of the original academic-style research defending a lasting effect on long rates of unconventional Fed policies involving sizable asset purchases, discussed at length in the first part of this chapter, had adopted the assumption that the initial overreaction as revealed in event studies would have a permanent portfolio-balance effect, other things equal. A New York Fed staff paper later had applied to equity prices this approach of examining only the initial market impact but ignoring its gradual wearing off.[80] The paper claimed that stock prices were 50 percent higher than otherwise because of the anticipation of the FOMC's releases after February 1994. Actually, separating out this particular paper solely because its results were more obviously doubtful is somewhat unfair, because the underlying methodology of this study is identical to much of the research claiming meaningful lasting effects for quantitative easing. Many found this result even absent any signaling effect influencing the expected funds rate.[81]

More negative findings, however, had appeared as well. One earlier paper in 2011 had estimated that QE2 asset purchases without forward guidance would have added less than 0.1 percent to the level of real GDP after two years, with effects on growth ending then.[82] And in May of the next year former Board staffer Jonathan Wright summarized his own econometric evidence his way:

> I find that simulative monetary policy shocks lower Treasury and corporate bond yields, but the effects die off fairly fast, with a half life of about two months . . .
>
> A possible, although optimistic, interpretation is that the economic stimulus provided by these Federal Reserve actions caused the economy to pick up. Another interpretation is that markets initially overreacted to the news of these quantitative easing actions . . . To the extent that longer term interest rates are important for aggregate demand, unconventional monetary policy at the zero bound has had a simulative effect on the economy, but it might have been quite modest.[83]

As his capstone, Roach reiterated Wall Street's widely held opinion that, although new quantitative easing obviously wouldn't work, the Fed was likely to adopt it by the September meeting anyway.[84] The day also marked a nadir for the Fed in terms of public relations, as the media loaded up with pejorative analogies. Chairman Bernanke was compared to the Emperor with new clothes and to the monkey who could see no evil, while the leaders of the Fed and the ECB were likened to the huckster Harold Hill in the musical *The Music Man*.[85]

Despite the bad press, in August 2012 at Jackson Hole, as Chapter 9 will describe, the chairman hinted that a decision to ease quantitatively for the third time was imminent. At its September meeting the FOMC took that route for MBS, along with extending the date of expected firming to mid-2015. At year-end 2012 the Fed augmented QE3 with long-term Treasuries and introduced economic thresholds rather than a calendar date to signal the probable timing of future firming. In the next year varying impressions of the likely pace of the Fed's tapering of open–ended QE sparked volatility in financial markets.

CHAPTER 9

Reaching for QE3 and Then Postponing Tapering

Chairman Ben S. Bernanke's Jackson Hole speech of August 31, 2012, turned out to set the course for the rest of his second term, importantly signaling the content of his legacy.[1] He stressed the socially debilitating repercussions of sustained high joblessness. He noted the valid point that both the potential inflationary and exit costs of the Fed's balance-sheet policies upon careful examination were minimal. But he then repeated his earlier claims about the benefits of past QE policies, mentioning a "substantial body of empirical work on their effects" and calling their effects "economically meaningful" (p. 6). He made only a brief passing mention of the relatively new empirical evidence, such as contained in the aforementioned paper by Jonathan Wright. That work suggested that the economic effects of two rounds of large-scale asset purchases (LSAP) and one of operation twist were weaker as well as less persistent than Bernanke had asserted previously. Bernanke contended that:

> *[T]he estimated macroeconomic effects depend on uncertain estimates of the persistence of the effects of LSAPs on financial conditions.*[17] [Footnote 17: For example, while the macroeconomic effects reported by Chung and others (2012) are consistent with the persistence of financial effects as estimated by Li and Wei (2012), Wright (2012) finds much less persistence using a different methodology. Kiley (2012) also provides arguments and evidence for why LSAPs may have been less simulative than found in Chung and others (2012) and Fuhrer and Olivei (2011).] *Overall, however, a balanced reading of the evidence supports the conclusion that central bank securities purchases have provided meaningful support to the economic recovery while mitigating deflationary risks.* (p. 8, emphasis added.)[2]

Bernanke previously in his presentation had reported:

> Model simulations conducted at the Federal Reserve generally find that the securities purchase programs have provided significant help for the economy. For example, a study using the Board's FRB/US model of the economy found that, as of 2012, the first two rounds of LSAPs may have raised the level of output by almost 3 percent and increased private payroll employment by more than 2 million jobs, relative to what otherwise would have occurred. (pp. 7–8.)

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Given the labor force at that time, those jobs implied a 1-1/4 percentage point reduction in the unemployment rate, while Okun's law suggested a 1-1/2 percentage point figure. The measured rate had fallen to around 8 percent by then, after peaking at 10 percent in October 2009, but the Congressional Budget Office initially saw the decline as entirely artificial because discouraged workers had left the labor force in droves. In January 2012, it estimated that the undistorted rate still was 10 percent:

> The unemployment rate would be even higher had participation in the labor force not declined as much as it has over the past few years. The rate of participation in the labor force fell from 66 percent in 2007 to an average of 64 percent in the second half of 2011, an unusually large decline over so short a time. About a third of that decline reflects factors other than the downturn, such as the aging of the baby-boom generation. But even with those factors removed, the estimated decline in that rate during the past four years is larger than has been typical of past downturns, even after accounting for the greater severity of this downturn. Had that portion of the decline in the labor force participation rate since 2007 that is attributable to neither the aging of the baby boomers nor the downturn in the business cycle (on the basis of the experience in previous downturns) not occurred, the unemployment rate in the fourth quarter of 2011 would have been about 1¼ percentage points higher than the actual rate of 8.7 percent.[3]

Even after the passage of more than a year, Robert Samuelson still could report this:

> Since 2007, there's been a huge exodus of people from the labor force. In March, the number was 496,000. Perhaps two-thirds of the dropouts leave because they're discouraged that they'll ever find work, estimates Heidi Shierholz of the Economic Policy Institute, a liberal think tank. (The remaining third reflects lifestyle choices and aging, including the retirement of baby boomers.) Counting many discouraged workers as jobless would raise the unemployment rate close to 10 percent instead of the reported 7.6 percent, she says.[4]

It follows that for the Fed's unconventional balance-sheet initiatives to have knocked 1-1/4 to 1-1/2 percentage points off the unemployment rate, the economy otherwise must have been incredibly weak.[5] That observation seems especially compelling given that the explicit forward guidance introduced in August 2011 itself did exert an expansionary impulse.

The Kiley paper cited in his speech previously was unknown to me.[6] It found that efforts to lower long-rates by altering the term premium on long rates via the preferred habitat channel had less impact than widely assumed. The reason?

> These simulations show that, according to these models, a sustained decline in long-term interest rates brought about by a decline in the term premium has about ½ the effect of a similar decline in long-term interest rates brought about through a decline in short-term interest rates. (p. 24.)

The last morning session on the first day of the symposium was the presentation of a paper by Michael Woodford, which took up this theme. Only the day before the

Wall Street Journal had run a story on him with this lead: "While the markets and media focus on Federal Reserve Chairman Ben Bernanke, the economists and central bankers gathering in Jackson Hole, Wyo., also will be watching another speaker who is less famous than the Fed chief but highly influential."[7] Woodford's paper expressed skepticism about Chairman Bernanke's position on quantitative easing. This prescient passage, for example, is drawn from Woodford's conclusions:

> Some argue that a vigorous program of "quantitative easing" is the obvious way to show that a central bank can and will act immediately, rather than simply waiting for expectations to change as a result of its announcements. But this argument presumes that central-bank asset purchases can stimulate additional spending, in ways not solely reliant upon expectational channels . . . Unfortunately, neither of the theories typically relied upon to explain why that should be the case . . . has a robust theoretical basis . . . or finds much support from experience thus far.
>
> It might nonetheless be argued that such purchases can be helpful as ways of changing expectations about future policy—essentially, as a type of signaling that can usefully supplement purely verbal forms of forward guidance . . . But if a central bank's intention in announcing such purchases is to send such a signal, the signal would seem more likely to have the desired effect if accompanied by explicit forward guidance, rather than regarded as a substitute for it.[8]

Despite such research, John Williams, president of the San Francisco Fed, who had been thanked by Woodford for "helpful discussions," seconded the position enunciated by the chairman. To be sure, Williams acknowledged the various recent studies that had questioned his original co-authored finding of powerful QE effects—a finding that itself had exerted powerful policy effects. He conceded in a *Bloomberg* TV interview on the first morning of the Jackson Hole symposium that the QE effects had proven difficult to pin down empirically. Even so, he "called for additional bond purchases by the Fed to spur economic growth that would be open-ended and total at least $600 billion."[9]

Early the next week Williams gained plenty of company

> in favor of an open-ended strategy for bond buying . . . Rather than specify a fixed amount of bonds to purchase by a certain date, such a strategy would leave the Fed able to announce a pace of purchases that it could adjust as the economy gets closer to Bernanke's goals.
>
> "You would be able to react to the incoming data in an incremental way and not be in a situation where you have to either drop the bomb or do nothing," St. Louis Fed President James Bullard said in an interview last week during the Fed's annual monetary policy symposium in Jackson Hole, Wyoming.[10]

Besides Williams and Bullard, the news account noted Chicago's Charles Evans and Boston's Eric Rosengren had joined Bullard in endorsing open-ended bond-buying.

Mainstream financial reporters and their business economist sources typically expected the Fed's to adopt an open-ended QE. For example, Steve Liesman said on CNBC's *Squawk Box* that he had returned from Jackson Hole convinced that such a program was in store. At the beginning of the week of the FOMC's September meeting, Citigroup said a gauge of market indicators in August put the odds of "additional central bank stimulus" (which the headline writer at *Bloomberg* took to mean QE) at 99 percent.[11] Even before, the Fed had reached the point where it could not fail to implement QE3 without completely undercutting its credibility by violating the increasingly explicit promise in its various communications.

But the *Financial Times* also weighed in with a piece on that day with a different take, and in retrospect an ominous one, which mentioned the most alarming possibility "for central bankers such as Mr. Bernanke, who have staked their reputations on successive rounds of quantitative easing: that it simply does not work." The article stated:

> In his presentation at Jackson Hole, Columbia University professor Michael Woodford presented evidence that, to the extent asset purchases have lowered long-term interest rates in the US, their effect was indirect. People saw the purchases as a signal that short-term interest rates will stay lower for longer, he argued.
>
> That paper gave the assembled central bankers some food for thought, but will have little bearing on their immediate policy choices.[12]

None of the bad press deterred the Fed at its September meeting from reaching for QE3—and it was a bit of a reach! The discussion in the last chapter about how QE3 would never see the light of day quoted Rick Santelli. So it's only fitting that he be quoted here. In another rant, he could be heard on CNBC's TV *Squawk Box* on the morning of the second day of the FOMC gathering on September 13, 2012:

> When you have the head of the Federal Reserve in testimony on Capitol Hill, talking at Jackson Hole, somewhat optimistic about the employment improvement without talking about the drop in labor force participation rate, I rest my case. You know, here's a man that is well educated as they come, he . . . tries to talk us into these notions that are impossible to prove, how his programs are having an effect that no independent research can back up, but then, when everybody in the real world is looking at the labor force participation rate, the lowest since 1981, he talks about how balance-sheet programs are improving employment.[13]

At 12:30 p.m., after its meeting had broken up, the FOMC released a statement revealing that it had adopted QE3: "The Committee agreed today to increase policy accommodation by purchasing additional agency mortgage-backed securities at a pace of $40 billion per month." The move "should put downward pressure on longer-term interest rates, support mortgage markets, and help to make broader financial conditions more accommodative." Its statement promised large purchases of MBS until the outlook for labor markets "improved substantially." The Committee also pushed back the explicit initial date of expected tightening to mid-2015. Finally, it stated that "a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the economic recovery strengthens."[14]

The influential Michael Woodford must have focused less on the part of the Fed's statement involving QE3 or the calendar date, which his paper had criticized, and more on the rapid implementation of his recommendation at Jackson Hole of committing to monetary ease even longer than market participants had anticipated based on past practice. He thought that the Fed had taken an "important and useful step, which should be more effective in increasing confidence that the economy will recover."[15]

Paul Volcker also gave an interview shortly after the FOMC's decision:

> The Federal Reserve has limited tools. They've run out of really strong action and are approaching the limits of their ability to deal with the situation. There aren't any magic bullets there . . .
>
> I'll be radical and say this dual mandate confuses the issue. The most important thing the Federal Reserve can do over time is maintain price stability. Obviously when you're in the midst of a recession to start they can maintain price stability and provide a lot of stimulus at the same time.[16]

The reaction of journalists spanned the gamut of opinion. Robert Samuelson wrote a wide-ranging column that on balance was mildly skeptical.[17] Paul Krugman dismissed the inflationary concerns of Republicans out of hand, voicing support for the initiative.[18] But Gavyn Davies expressed concern that the Fed had revised its reaction function to place less weight on restraining inflation and more on bolstering employment.[19] Inflation worries did seem to have become more widespread. Investors were not immune from this preoccupation. By the close of financial markets on the next day, a noticeable rise had occurred not only in the prices of various equities, commodities, and foreign currencies but also on the interest rate on 10-year Treasury notes, which increased from the previous Friday by 12 basis points. And a minor ratings company downgraded US government debt.

Those developments were the side-effects of achieving a reduction of the fixed rate on mortgage-backed securities of some 60 basis points within a couple of weeks. However, after another month that entire decline had been reversed, as the initial emotional and speculative responses wore off and as the economy, especially the housing sector, seemed to have strengthened.[20] By then an analysis by an influential new Board member had appeared. Through a simple numerical example, Jeremy Stein astutely examined whether capital spending would be affected on the Fed's assumption that large-scale asset purchases lowered only the term premium in the bond rate, leaving unaffected the expected path of short rates.

> A risk-neutral firm faces a rate on its 10-year bonds of 2 percent. At the same time, it expects that the sequence of rolled-over short-term rates over the next 10 years will average 3 percent. Hence, there is a term premium of minus 1 percent. What should the firm do? Clearly, it should take advantage of the cheap long-term debt by issuing bonds. But it is less obvious that the bargain 2 percent rate on these bonds should exert any influence on its capital spending plans. After all, it can take the proceeds of the bond issue and use these to pay down short-term debt, repurchase stock, or buy short-term securities. These capital-structure adjustments all yield an effective return of 3 percent. As a result, the hurdle rate for new investment should remain pinned at 3 percent. In other words, the negative term premium matters a lot for financing behavior, but in this stylized world, investment spending is decoupled from the term premium and is determined instead by the expected future path of short rates.[21]

At its December 2012 meeting, the Committee still augmented QE3. It replaced the expiring operation twist, which matched long-term Treasury purchases with short-term sales, by continuing its purchases of longer-term Treasuries but only by themselves, maintaining a monthly pace of $45 billion. The flow of total purchases of MBS and long-term Treasuries thus would amount to $85 billion per month. The Committee additionally resolved to roll over all maturing Treasury securities, supplementing its existing practice of reinvesting principal payments from its holdings of agency debt and agency MBS in the latter securities.

The FOMC also altered its forward guidance by discontinuing the thankless task of forecasting an explicit calendar date for eventual firming. Instead, it avoided the potential problem of seeming to commit to a specific outcome for the funds rate by introducing explicit thresholds for unemployment and projected inflation. It would keep the funds rate unusually low at least until the unemployment rate fell to 6-1/2 percent so long as expected inflation one or two years out was not expected to surpass 2-1/2 percent. Although the Committee dropped the anticipated date, it thought the selected guideposts were consistent with the earlier approach.

Bernanke announced in mid-April 2013 that a scheduling conflict would prevent him for the first time in his chairmanship from attending the Jackson Hole symposium in August. Perhaps he also wanted to avoid being present for an extended discussion of the pros and cons of his legacy. President Obama had intimated that Bernanke was not interested in serving a third term as chairman. Vice Chair Janet Yellen apparently was the leading candidate to fill the slot.

Tapering Open-Ended Quantitative Easing

The FOMC's discussions in 2013 about scaling back on quantitative easing were in the context of the prospective health of the labor market, heightened risk on certain financial assets, or greater difficulty of exiting. Admittedly, I didn't see why a decision on quantitative easing per se, unlike associated signals about the continuance of the unusually low funds rate itself, would have any medium-term effect on any of those factors. Therefore, I considered the FOMC participants' incessant pronouncements about how future economic conditions would affect asset purchases to have been akin to medieval debates about how many angels could dance on the head of a pin.

But market participants didn't see it that way. Financial markets became increasingly turbulent in May and June 2013 on shifting perceptions about when the Fed would begin tapering its asset purchases. Global markets were especially volatile after Chairman Bernanke's message on May 22 in testimony to the Joint Economic Committee (JEC). In response to a question from Rep. Kevin Brady (Republican, Texas), Bernanke replied, "If we see continued improvement and we have confidence that that's going to be sustained then we could in the next few meetings . . . take a step down in our pace of purchases."[22] Thus, Bernanke signaled that the Fed's intention to begin lessening the extent of its perceived added accommodation later in 2013 was conditional on the economic and labor-market data. Yet as the introductory chapter warned, "[F]inancial markets become unnecessarily but understandably skittish whenever a central bank announces . . . that it is tempted to tighten in the near future depending on the incoming data. So a central bank should not travel too far down this route."

Volatility did seem to stem from varying signs about the Fed's plans for limiting asset purchases. Larry Kantor, a former Board staffer but now head of research at Barclays PLC, put it succinctly. "In Mr. Kantor's view the increased role of central banks in driving capital markets means asset-price fluctuations are being driven more by investor speculation over what central bankers will do next, paving the way for erratic moves. 'It becomes less about market dynamics and more about central-bank policy and speculation,' he said."[23]

As the Fed's communication skills came under serious criticism in the press, I recalled that early in my career at the Board, it was considered verboten for FOMC participants ever to proffer hints publicly about the chances of possible future actions. But times obviously have changed in this enlightened era of transparency and forward guidance. While future decisions will be data dependent, FOMC participants still have seemed compelled to pontificate about every shift in the odds on various asset-purchase decisions. Such a practice has just amplified already heightened market volatility.

But even if FOMC participants learned to "stifle," the Committee already had painted itself into a difficult corner. The fundamental problem for volatility of having *announced* a predisposition to pour *smaller amounts* of punch into the bowl *depending on economic conditions* would remain. Recall that in the last couple of years of Greenspan's career, the FOMC countered the tendency for public plans for intended firming in the funds rate to induce volatility by eliminating the policy's conditionality by telling the world that a quarter-point hike in the funds rate at each coming meeting was a done deal. Later, Bernanke extricated himself from the communication problems as his first half-year neared completion by curtailing the Committee's public tightening bias itself. But the current FOMC did not have either of those options available. So at its June 18–19 meeting it instead addressed the much less important issue in terms of relieving volatility that involved reducing market uncertainty about the FOMC's tapering plan if its projections proved to be more or less accurate.

The Committee "deputized" Bernanke to clarify its intentions in that case at his Wednesday 2:30 p.m. press conference. His opening statement went beyond the FOMC's official statement now released at 2:00 p.m. It revealed that with an approximately accurate forecast, "the Committee currently anticipates that it would be appropriate to moderate the monthly pace of purchases later this year; and . . . we would continue to reduce the pace of purchases in measured steps through the first half of next year, ending purchases around midyear."[24] The expected unemployment rate by then would have fallen to about 7 percent.[25] Whereas his testimonies defending QE in earlier years had gone out of their way to identify the estimated meaningful equivalence of a given amount of asset purchases with a particular decline in the funds rate, now, somewhat illogically, he attempted to strongly distinguish tapering from an initial boost to the Fed's intended overnight rate on interbank lending. (Either the two policies have an equivalence or they don't—which is it?) Over the next three days the Dow Industrial index on balance was down 520 points. During that interval, the yield on the Treasury's 10-year note rose further above its trough of 1.63 percent in early May, jumping 35 basis points to 2.54 percent. By the close of the first week of September, that rate would climb to about 3 percent for the first time since July 2011.

Federal funds futures rates in the out years mounted appreciably, though evidently less than the rise in term premium. Consonant with Michael Woodford's earlier-quoted argument at Jackson Hole in 2012, previous investor expectations formed partly by the adoption of open-ended QE must have implied that extent of more ease in the funds market. The Fed was surprised by this development because, in the presence of forward guidance that should have nailed down market expectations of the funds rate, announcements of plans to reduce unexpectedly the pace of asset purchases should have been felt only by raising the real term premium in markets for long-term securities. But according to the Fed's maintained hypothesis that it is the *stock* of the Fed's assets that should matter for the term-premium component of the market yield, another source of surprise was the extent of the adjustment in the term premium, which jumped a significant amount from negative to positive by some estimates. So the size of this part of the rise in long-term yields also surprised the Fed.

In June, Bernanke admitted his astonishment about the earlier backup in long rates to Robin Harding, of the *Financial Times*, who asked, "Mr. Chairman, you've always argued that it's the stock of assets that the Federal Reserve holds which affects long-term interest rates. How do you reconcile that with a very sharp rise in real interest rates that we've seen in recent weeks?" Bernanke replied, "Well, we were a little puzzled by that. It was bigger than can be explained I think by changes in the ultimate stock of asset purchases within reasonable ranges. So I think we have to conclude that there are other factors at work as well."[26]

At Jackson Hole in August, various representatives of emerging-market economies piled on by decrying the adverse financial impact on in the rest of the world of the Fed's revelation of its intention to taper. They also advocated international coordination of related Fed decisions, despite the obviously appropriate US statutory requirement that, despite global interactions, the Fed should consider only overall domestic developments in designing monetary policy. Ironically, we saw in Chapter 8 that representatives of emerging-market economies were among the complainers about the restrictive international repercussions of the Fed's *introduction* of QE2. To be sure, the recent consequences abroad of the Fed's publicizing its intentions to gradually stop open-ended QE were noticeably negative, though in truth the previous culprit in lowering foreign yields had been the prospect in the United States of protracted low short rates, not the on-again, off-again reliance on QE per se. Equity valuations in emerging markets lost more than $1 trillion after Bernanke's May JEC hearing. And the spike in longer-term US interest rates induced much capital to flood out of emerging markets, generally driving the value of their currencies lower and their bond yields higher.

Various representatives of emerging-market economies furthermore joined Christine Lagarde of the IMF in unquestionably assuming that, because QE was so potent, more remained to be done in implementing it abroad. By contrast, an unusual non-attendee this time, Harvard economist Larry Summers, back in April had minimized the impact of QE on output and prices. "QE in my view is less efficacious for the real economy than most people suppose . . . If QE won't have a large effect on demand, it will not have a large effect on inflation either."[27] Learning about those comments raised my opinion of him as a candidate to lead the Fed relative to Janet Yellen, who had supported QE based on flawed academic-style research. He had gained practical experience as chief economist at the World Bank, deputy secretary and then secretary of the Treasury under President Clinton, and director of the National Economic Council under President Obama.

Former administration colleagues floated a trial balloon for him in July that included a whispering campaign underlining Yellen's alleged flaws.[28] To his credit, Summers had originated a valid rationale for a positive inflation goal.[29] But I still thought that other positions in the past were decisively negative. Unlike Volcker and Greenspan, but like Rubin, in May 1996 he actively had opposed privatizing Fannie Mae and Freddie Mac, thereby retaining government policy toward them.[30] And, unlike Volcker, but like Rubin, Geithner, and Greenspan, Summers had supported the 1999 repeal of Glass Steagall in Gramm Leach Bliley. (Then he initially, like Geithner, had opposed its partial reversal in the Dodd-Frank Act via the Volcker rule, named after you-know-who—by then a top economic advisor to President Obama). Finally, someone like me who wrote a dissertation under Milton Friedman on the permanent income hypothesis for consumption would hardly have wanted the early 2009 stimulus to be "temporary" as well as "timely" and "targeted."[31] John Taylor convincingly demonstrated that the temporary impacts of the ensuing stimulus on disposable personal income in 2009, as in 2008, had a negligible effect on consumption expenditure, which of course would have been expected from the permanent income hypothesis.[32]

In reaction to the support for Summers, 20 Senate Democrats and Independents and 37 Democratic Congresswomen wrote letters urging President Obama to nominate Yellen, although she doubtless had considerable unexpressed backing from Congressmen as well. I had found her to be genuinely nice, which in the collegial atmosphere of the Fed hardly would be disadvantageous. And her obvious intelligence would command respect as chair and contribute to effective leadership. She had persuasively opposed Greenspan's initial support for zero inflation by instead correctly defending a 2 percent goal. Too, her dovishness may have been overdone in the press, and not only because she always voted "yea" in support of all the FOMC's tightening actions; in addition, in September 1996, she in fact joined Governor Meyer in a private meeting with Greenspan to advocate a firmer policy stance that the chairman presciently opposed.[33] But by 2007 she had rightly seen more clearly than other FOMC participants in the transcripts that the balance of risks was tilted down. And, though by no means a reflective over-regulator, before the financial crisis she was sound on several supervisory issues because she recognized the general laxity in lending standards.[34]

As vice chair, she had headed up the subcommittee on communications that effectively contributed to heightening forward guidance about policy ease. True, she was naïve about the import of releasing the early 2012 statement of principles on the Fed's goals. Part of the reason may have been that she assembled an accomplished but academically oriented personal staff. She presumably did so to counter the power of the directors of the traditional research divisions, who, though more practical, had irritated her in the mid-1990s, judging by her response, as the concluding chapter will discuss. But she had leavened her academic mindset though practical experience at the Board, San Francisco Fed, and Council of Economic Advisers. Alan Blinder penned an influential description of her qualifications in an opinion piece in the *Wall Street Journal,* which also ran a comprehensive article showing that based on speeches and testimony she had the most accurate forecasts of all the FOMC participants from the second half of 2009 through 2012.[35] The next day witnessed an editorial endorsement of her candidacy by the *New York Times*.[36]

In meeting with Democrats in late July President Obama not only defended Summers but also mentioned Donald Kohn. A former career Fed staffer, FOMC secretary, director of the Board's Division of Monetary Affairs, governor, and later also vice chairman, and trusted confidant of Greenspan and Bernanke, by then he was senior fellow at the Brookings Institution and financial regulator at the Bank of England. In October 2012 Kohn had said that the recent adoption of open-ended quantitative easing and the extension of the expected date of initial firming "would be somewhat effective but not hugely so . . . [I]t's difficult to believe that a further reduction in long-term rates would have a big effect. I think it will be positive for growth, but more in the ballpark of tenths of a percentage point as opposed to anything larger."[37]

As September progressed, Summers enjoyed the inside track according to conventional wisdom informed by administration leaks. But the objective facts increasingly suggested otherwise. A more-than-500-signature petition of economists endorsed Yellen. Republicans, though skeptical of Summers—who, as a former administration official, was personally close to the president—mostly held their tongue. Still, their support became essential once at least four Democrats on the Senate Banking Committee, which the majority party controlled by only two votes, announced or intimated their opposition.[38] A series of miscues on Syria weakened the president's bargaining power not only internationally but also with the Congress. So Summers ended up exemplifying the truth of the biblically related injunction, "Live by the sword, die by the sword." As the handwriting on the wall became ever more distinct, he removed his name from consideration at mid-month; coincidently his candidacy collapsed on the fifth anniversary of Lehman's failure.

Even so, who would be the next Fed leader was still unannounced when the FOMC met on September 17–18. The title of the following article well captures market sentiment: "Fed is expected to scale back bond purchases even with economy at less than full health." And this story contained an eminently sensible reason: "'Bernanke may well want to have a bond-reduction program in place before a new chairman comes in,' said David Wyss, a former chief economist at Standard & Poor's and now an economics professor at Brown University."[39] But that outcome was not to be, at least not at that point. The FOMC surprised most investors by postponing the start of tapering of its asset purchases. The joy in financial markets that afternoon was palpable, as participants immediately perceived that Fed policy would be nurturing more comfortable financial conditions. Yields on both 10-year Treasury notes and fixed-rate mortgage-backed securities fell a bit more than 15 basis points to close at 2.71 percent and 3.19 percent, respectively. The gain in the Dow Industrials that day was within striking distance of 150 points, with less than a third of it recorded before the 2 p.m. announcement.

Still, the actual data prior to the meeting didn't seem to have been all that much weaker than the FOMC had foreseen in May and June. The statement included references to "the improvement in economic activity and labor market conditions since it began its asset purchase program a year ago as consistent with growing underlying strength in the broader economy" that was responsible for "the downside risks to the outlook for the economy and the labor market . . . having diminished, on net, since last fall."[40]

The Fed's statement also noted that "the tightening of financial conditions observed in recent months, if sustained, could slow the pace of improvement in the economy and labor market."[41] Andrew Coyne's observation, though, was pertinent:

> The irony is that the economic weakness that prompted the Fed to think twice about tapering was itself in part a *result* of its earlier warnings that tapering was on the way:

> interest rates had risen all through the summer in anticipation. Had investors not taken the Fed at its word, it might not have had to break it.
>
> That paradox is rooted in the central dilemma of modern monetary policy: credibility is everything. At bottom, central banks are seeking to alter investor behaviour. They do this as much with words as with policy, but in either event the goal is to get inside their heads: to shape their beliefs and actions, but also to anticipate them, and to plan future policy steps accordingly . . . If both sides understand each other, it makes for more predictable outcomes. It is when they do not—when investors think policy will stay loose, say, just as it is tightening—that accidents happen.[42]

As just such an accident played out, the FOMC's actual forward guidance came under assault not only outside but also inside the FOMC itself:

> "The whole key to forward guidance is you have to have the market rely upon what you're telling them," said Scott Minerd, chief investment officer at Guggenheim Partners, an investment firm with more than $180 billion in assets under management. "What the Fed did . . . decreased their credibility in terms of being able to use forward guidance."[43]
>
> " 'Transparency is different from communicating clearly,' said Kansas City Federal Reserve Bank President Esther George, who has been a vocal critic of central bank policy, according to news reports. 'I am not in favor of promoting transparency without *thinking of ways to be clear*.' "[44]

Partly in response to heightened doubts about the Fed's credibility and clarity, stock prices more than reversed their initial gains by week's end and then dropped more in each of the first three sessions of the next week. These latter declines no doubt also reflected mounting concerns about the political standoff in Washington. Meanwhile, the ebbing of Treasury rates persisted.

Yet the negative reaction to more uncertainty about future monetary policy decisions was not fully warranted, since precise policy prophecy can't be reconciled with the requisite retention of Committee free will. Obviously, the Fed had made no decision about the timing of initial tapering prior to the freewheeling discussion at the September meeting. Yes, investors had developed a prevailing view beforehand that didn't comport with the FOMC's eventual choice. But recall that the forward guidance had consisted not only of Chairman Bernanke's carefully crafted statements but also of the continual more careless off-the-cuff pronouncements by the presidents.[45] Board members actually had maintained radio silence for more than two months, while the presidents, despite being uninformed of the Board's evolving intentions far away in the nation's capital, continued to chatter away about how each new bit of information likely would affect upcoming policy decisions.[46]

At his press conference the chairman expressed some unusual pique when Victoria McGrane of *Dow Jones* asked whether "the Fed is confusing investors and sending mixed signals?"

> Well, I don't recall stating that we would do any particular thing in this meeting. What we are going to do is the right thing for the economy. And our assessment of the data since June . . . didn't quite meet the standard of . . . confirming our basic outlook . . . We try our best to communicate to markets—we'll continue to do that—but we can't let market expectations dictate our policy actions.[47]

His prepared statement emphasized that asset purchases weren't on a "preset course."[48] And his response to a question from Jon Hilsenrath of the *Wall Street Journal* suggested that, regarding the rate of unemployment, "there is not any magic number" (p. 11). He thereby in effect repudiated the FOMC's June expectation that the rate likely would approximate 7 percent when tapering ended. After all, by early September a gap of only 0.3 percentage point remained, hardly too far to go before tapering even got going. Was Bernanke finally displaying second thoughts about the whole forward-guidance enterprise? Had he suddenly become more partial to pure discretion? No, I think that a more plausible inference is that he had come to the (unaccountably belated) conclusion that the unusual cyclical declines in labor force participation had rendered the measured unemployment rate an unreliable guide to the state of labor markets.

Regarding the threshold for starting to boost the funds rate itself, he added some new information in commentating that:

> [I]n making its assessment, the Committee would also take into account additional measures of labor market conditions, such as job gains. Thus, the first increases in short-term rates might not occur until the unemployment rate is considerably below 6-1/2 percent.[49]

While he may not have contemplated doing so, the FOMC would be ill-advised to abandon with impunity the signals provided by the traditionally estimated unemployment gap. In studying inflation later in Chapter 9, this text will say:

> True, including only normal declines in the rate of labor force participation, the adjusted unemployment rate excluding unusual cyclical effects would have been much closer to its peak of 10 percent in October 2009, as discussed earlier. But since people leaving the labor force by definition don't look for work, they can't exert downward pressure on wages and thus prices. So it's still the measured unemployment rate relative to the unaffected natural rate that would be relevant in determining inflation.

The measured unemployment rate thus would retain its crucial role in indicating both remaining slack in the labor market and resulting inflationary pressures. To be sure, projecting its future course would have been made more difficult because of uncertainties about how economic strengthening would affect labor force participation and hence the unemployment rate. With wages and core prices not accelerating in recent years, despite the continuing decline in the measured rate, the natural rate evidently also has been falling for other reasons, *ceteris paribus*.

At the press conference Bernanke gave an unsatisfying answer to a profound question from Steve Beckner of *MNI*, who asked whether the effectiveness of QE hadn't all but disappeared. The chairman acknowledged the inconclusive results of the now massive body of technical academic-style research, which indeed were all over the map. But he added, "My own assessment is that it has been effective."[50] His defense rested in part on dubious Keynesian-inspired econometric overestimates issued by the Congressional Budget Office (CBO) of how much fiscal restraint, such as the "sequester" legislation that involved across-the-board automatic cuts in discretionary spending, has retarded economic growth. (Fiscal issues will be the subject of the next chapter.) He also relied on his judgment that labor market indicators "are much better today than they were when we began this latest program a year ago" (p. 20). But I remain persuaded that much "meaningful progress" in labor markets over this time was importantly chimerical (p. 3). As earlier chapters suggested, the research on which the Fed based its adoption of QE2 and QE3 had problems. In my opinion, the chairman, the Board's vice chair, the other FOMC members, and, not least, the relevant staff could have better separated the wheat from the chaff.

The FOMC's median projection was for only a 1.75 percent funds rate in late 2016. That figure was close to what the adjusted Taylor rule that was very inertial, as noted in Chapter 5, would call for in a simulation of a Board model despite incorporating the FOMC's projections of a positive or negative gap of unemployment or core inflation then of only 0.15 percentage points and a 4 percent longer-run natural nominal funds rate.[51] Bernanke attributed the disparity not to policy inertia but to "headwinds to recovery" (p. 6). If so, they would need to abate in another couple of years to accord with the FOMC's view of the longer run. But what of Woodford's recommendation that the policy setting even then additionally should stay unusually relaxed? Well, the advantages of such policy sluggishness disappear as the time approaches in a Board model with the unrealistic assumption of rational expectations in labor and product markets.[52] Using pre-commitment to an unneeded prolonging of policy ease that would result in an overshooting of unemployment and inflation goals so as to address an alleged problem of time inconsistency doesn't have much to recommend it.[53] No wonder Andrew Coyne made a second striking observation in the same piece: "Forward guidance seems to want to have things both ways: policy will be looser than it might have been (hint, hint), but no looser than it should be (wink, wink). Investors could be forgiven for being a little skeptical, or even confused."[54] And forward guidance can't be expected to work perfectly when the Fed has to exercise free will, because, as Yogi Berra said, "It's tough to make predictions, especially about the future!"

On *Squawk Box* the next day Steve Liesman examined the statement's word count, as shown in his exhibit that is replicated in Table 9.1. His conclusion, "The policy is not working," for once garnered Rick Santelli's approval.[55]

The fiscal standoff, though unmentioned explicitly in the statement, must have weighed heavily on the FOMC. Bernanke answered a question from Peter Barnes of *Fox Business Network*. "Well, a factor that did concern us in our discussion was some upcoming fiscal policy decisions . . . [I]t is the case, I think, that a government

Table 9.1 Saying More but Explaining Less: Words in FOMC Statements

Date of FOMC Statement	*Number of Words*
2005	167
2011	421
2012	426
2013	606
June 2013	590
July 2013	617
Sept 2013	721

Source: Steve Liesman, *Squawk Box*, CNBC, September 19, 2013. Retrieved from http://money.msn.com/money-video/default.aspx?from=gallery_en-us&videoid=dcf2f39c-a48b-4f7c-9bc5-d98572a192fa&sf=Relevancy#2.

shutdown and perhaps, even more so, a failure to raise the debt limit could have very serious consequences for the financial markets and for the economy, and the Federal Reserve's policy is to do whatever we can to keep the economy on course."[56] But basing monetary policy in part on likely economic effects, not of actual fiscal decisions, which would have been justified and precedented, but rather of speculative and only possible ones seemed to me at the time to be unjustified as well as unprecedented. I then was persuaded by David Kotok's argument that the Fed "has allowed politics to enter the central bank decision-making process in an even deeper way than politics have already done."[57]

In late September—almost three years after my aforementioned phone conversation with Steve Axilrod and two years after the aforementioned op-ed piece by David Malpass that contended that savvy speculators had benefited from QE1 and QE2 by a mammoth price-insensitive buyer—a *Reuters* special report provided detail. It described how Pimco predicted from publicly available hints by the Fed well in advance of the official announcement of QE3 that the Fed would want lots of MBS. Pimco started to acquire scads of those securities. Once the Fed began to enter the market, Pimco began to unload its accumulated stock at the temporarily higher prices induced by the Fed's special demand. *Reuters* wrote that aforementioned:

> Pimco has locked in much of its gains on agency MBS by selling down its hoard to the Wall Street dealers who then sell to the Fed. "You never go broke taking a profit," Gross said. "We've sold … tens of billions of agency mortgages to the Fed, which is … basically what we intended to do."[58]

Matt Levine augmented *Reuters*'s analysis by noting that:

> [T]he Fed isn't a typical customer, because its goal is not to get the best price but to move prices. The Fed wasn't buying bonds as a long-term investment; it was buying the bonds so the price of those bonds would go up, and rates would go down . . . And rates going down makes the economy better etc., etc.
>
> If the goal is to move prices, your desires are sort of the opposite of what normal traders want in their trade execution. . . . That's why Bill Gross could talk about making the Fed his partner by buying what they wanted to buy before they could and then selling it to them at a markup. Normally that's not how you treat your partner. Here, though, they let it slide.[59]

The original positioning by sharp-penciled observers of the Fed, who bought longer-maturity securities for weeks on either side of the official announcement, initially induced gains in their prices. Then, after the announcement effect showed through in lower rates immediately, the Fed's purchases began to dominate market demand. Profit-taking owners satisfied it by gradually unloading their private positions at the elevated prices. But such speculative activity wound down as markets better incorporated the approaching end of the earlier programs, and the security price gains reversed. Just how long such an artificial impact on longer-term yields would persist before its inevitable unwinding was the $64 billion question. Thus, it certainly was odd that this whole question of market dynamics involving the dissipation of the announcement effect was completely ignored in an evaluative paper at the August 2013 gathering of practitioners and students of central banks at Jackson Hole. The paper examined only the rather irrelevant question of the announcement's immediate impact on long yields for a day or two.[60]

The appreciable market reaction to the chairman's revelation of the Fed's tapering plans was explicable: For the earlier speculative price gains to persist would have required the market to anticipate that open-ended QE would continue indefinitely. But when the Fed admitted to its plan for a medium-term end, those gains abruptly reversed as likely profit-taking opportunities disappeared.[61] So the marked response to the FOMC's decision to *continue augmenting* its assets at a monthly pace of $85 billion did *not* stem from either the Fed's favored stock hypothesis or the change-in–the-stock hypotheses. Instead, the experience provided evidence that the efficacy of QE3 could *not* be sustained when the market began to anticipate tapering.

The earlier depressed market yields thus mainly reflected the reduction in the term premium to a negative value caused by the behavior of speculators, who then had added significantly to the overall demand. Governor Jeremy Stein had called the inducement of new players in the market the "Fed recruitment" view.[62] But his speech didn't explicitly mention any speculative motivation—a crucial element in understanding the actual behavior of financial markets.[63] Still, as noted above, Stein had already shown that a reduction in the term-premium alone, separate from a reduction in the markets' expected path of the funds rate, was *not* an efficacious route to stimulate new investment.[64] Thus, the following claim to the contrary was a bit hard to swallow. William Dudley, president of the New York Fed, asserted

> in response to an audience question that the market reaction to the possibility the Fed may reduce the pace of securities purchases demonstrated the policy's effectiveness.
>
> "The very idea that we might begin to taper" led "to a significant tightening of financial conditions," Dudley said. That shows the stimulus has kept "financial conditions more accommodative than they otherwise might have been."[65]

I initially thought that the unknown extent to which Janet Yellen's counsel had affected the FOMC's September decision would have reflected adversely on her practical judgment. Had the ubiquitous complaints of the foreign central bankers at Jackson Hole inordinately influenced her? Could she still believe in a lasting large effect of QE3 even in the face of the compelling evidence to the contrary? Could she actually be more dovish than suggested by outward appearances? Could the case for the chairmanship of an uninvolved Don Kohn now be strengthened? But to my considerable internal embarrassment I had to retract those questions when the intransigent Republicans allowed the government to close partially in early October. The closure suddenly made the Fed look omniscient and justified the Committee's prudence at the September meeting. Then, on October 9, the Board released the meeting's Minutes, which revealed that the decision to defer tapering was contentious as well as "a close call."[66]

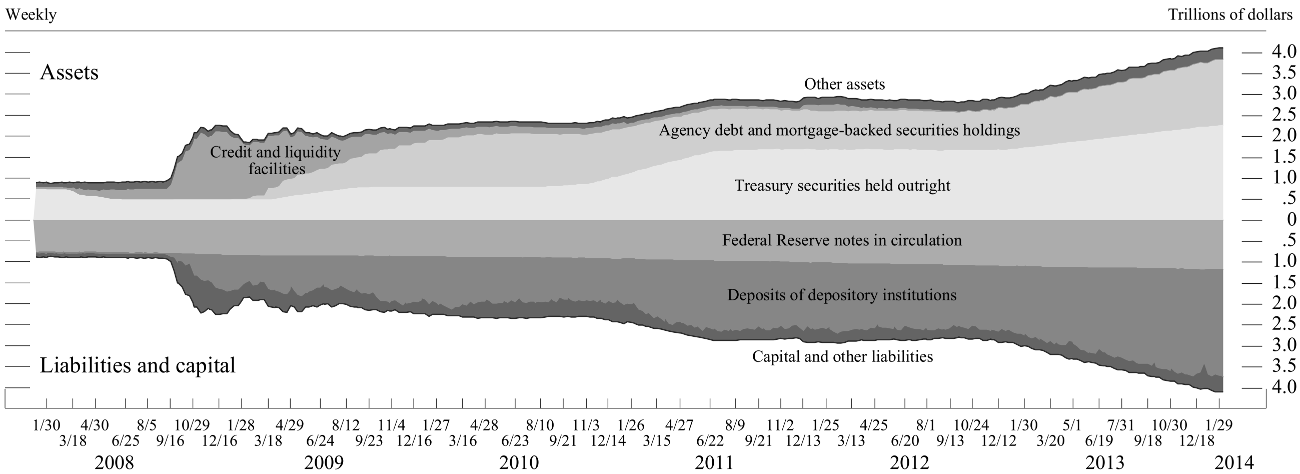
President Obama that same day conducted a nomination ceremony for Janet Yellen to lead the Fed on the doorstep of its second century. In her mid-November confirmation hearing, she declared that, although QE had "made a meaningful contribution" to the still inadequate economic outlook, when "the time is appropriate," she "looked forward to leading the normalization of monetary policy." But a good employment report for November meant that the time to start tapering arrived even before she took over as chair. On December 6, the Labor Department reported that the civilian unemployment rate had dropped an unexpected 0.3 percentage point to 7.0 percent despite an uptick in the labor force participation rate from a 35-year low, while nonfarm payroll jobs extended to four its string of gains of about 200,000. On December 18, the FOMC voted to scale back its monthly purchases by $5 billion each of MBS and Treasuries, starting in January of the next year.

Market participants before the action had priced in the announcement of tapering at that time, as the rate on the 10-year Treasury was up more than a percentage point from its trough in May. But along with the earlier-than-expected decision to begin, the Fed clarified its forward guidance by stating that the funds rate would stay exceptionally low "well past the time the unemployment rate falls below 6-1/2 percent, especially if projected inflation continues to run below" 2 percent. Bond yields responded little to the offsetting signals, but the Dow Industrials rose almost 300 points on the day.

Figure 9.1, which is taken from the Board's February 2014 *Monetary Policy Report*, shows the impact on the Fed's balance sheet into that year of all its programs adopted after mid-2010, that is, QE2, operation twist, and QE3. In bringing Figure 7.1 up to date, it simplifies the assets and liabilities and starts two years later in early 2008.[67] By the end of 2013, the Fed's outright holdings of predominately long-term Treasury securities had surged to $2.2 trillion and of agency debt and agency guaranteed MBS had jumped to $1.5 trillion, both valued at par. These categories represented 55 percent and 39 percent, respectively, of the central bank's total assets of $4 trillion. The Federal Reserve's purchases drove the deposits or reserve balances of depository institutions up to $2.5 trillion. Required balances were only $125 billion. The difference between those amounts implied that excess balances themselves amounted to $2.4 trillion.[68]

Through year-end upbeat economic releases elicited more gains in equity prices—bringing the S&P 500 index to a 30 percent annual advance, the best since 1997—while the yield on the 10-year Treasury note again broke above 3 percent, up from about 1-3/4 percent a year earlier. But by the time of the Fed's statement on January 29, the afternoon of the second day of Bernanke's last FOMC meeting, S&P 500 equity prices already had dropped nearly 4 percent so far in the New Year, while the Treasury's 10-year note had rallied enough to lower its yield almost to 2.70 percent. During the previous week, numerous problems had intensified in several emerging markets, battering their currency, equity, and bond values, which had fed back to our country. These developments did not deter the unanimous FOMC from cutting monthly asset purchases by another $10 billion to $65 billion, as had been anticipated. The statement took 830 words to explain why.[69] Financial markets shrugged off the action, though equity prices continued their descent and the 10-year yield dipped another couple of basis points by the close.

The Senate on December 20 had postponed Yellen's confirmation until the members returned in the New Year. It subsequently was revealed that earlier that month Yellen had persuaded Stanley Fischer to replace her as vice chair.[70] An influential scholar of macroeconomics at MIT, he had importantly contributed to the development of New Keynesian economics by combining temporary rigidities with rational expectations in labor and product markets. He had directed dissertations by Ben Bernanke and Mario Draghi. He had served in senior positions at the World Bank and International Monetary Fund, where he oversaw recommended reforms in the



NOTE: The data extend through February 7, 2014. Credit and liquidity facilities consists of primary, secondary, and seasonal credit; term auction credit; central bank liquidity swaps; support for Maiden Lane, Bear Stearns, and AIG; and other credit facilities, including the Primary DealerCredit Facility, the Asset-Backe Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, and the Term Asset-Backed Securities Loan Facility. Other assets includes unamortized premiums and discounts on securities held outright. Other liabilities includes reverse repurchase agreements, the U.S. Treasury General Account, and the U.S. Treasury Supplementary Financing Account. The dates on the horizontal axis are those of regularlyscheduled Federal Open Marke Committee meetings.

Figure 9.1 Federal Reserve Assets and Liabilities, 2008–2014

Source: Board of Governors of the Federal Reserve System, Semiannual Monetary Policy Report to the Congress, February 11, 2014, Figure 42, p. 34.

former Soviet Union, though with decidedly mixed results given its backward culture and inadequate legal system. He became a senior executive at Citicorp, before serving until mid-2013 as the long-time Governor at the Central Bank of Israel. An attentive listener, he always has radiated unflappability, perspicacity, affability, and common sense. At 70, he was three years older than Yellen, so he presumably agreed to the job as a capstone to a distinguished career, not as a stepping stone to Fed chairman. The Fed will be in two sets of good hands.

Greenspan and Bernanke Preventing Deflation at Home

Yellen initially faced inflation below the 2 percent goal but not continued disinflation or even ever-worsening deflation. Kazuo Ueda made a related observation about the surprising stability of Japan's observed rate of deflation after its inception:

> We might add that although inflation fell into negative territory, it did not show a tendency for a deflationary spiral, which is somewhat of a puzzle. It may well be that the BOJ's non-traditional policy measures have had at least the positive effect of avoiding a destabilizing rise in the rate of deflation.[71]

Kenzo Yamamoto pointed out to me that his own interpretation of Ueda's comment was that Ueda was referring not only to the standard constant worsening in the rate of deflation each year once it begins in the face of a steady overage of unemployment relative to its natural rate under Friedman and Phelps's conventional accelerationist theory of inflation but also to the supplemental phenomenon at the zero bound on the short-term interest rate of an incremental annual enlargement of the change in the rate of deflation. Such an outcome would occur because the unemployment rate actually can't hold steady but instead will swell progressively since not only will the real rate of interest climb ever higher but also that real-rate advance must happen at an even speedier pace (that actually gets ever faster over time) than when unemployment stays constant.[72] Yamamoto elaborated on his interpretation:

> The complete mainstream theory states that once the economy goes into deflation, the real interest rate keeps rising ever faster because the nominal interest rate can't go into negative territory, which induces the real economy to deteriorate more and more. That causes a continuous augmentation of the rate of increase in the real interest rate, thus of the worsening of the unemployment rate, and therefore of the pace of the rate of decline in prices, which ultimately results in an ever-intensifying deflationary spiral.
>
> Mr. Ueda observed that even the lasting deflation in Japan actually didn't lead to such a self-reinforcing, destabilizing continual upswing in the rate of deflation over time. This raises the question of why Japan's economy didn't actually experience any such deflationary spiral and what forces in actuality did fill the gap between the unemployment rate and the natural rate under the zero lower bound on interest rates?[73]

I would answer by advancing this book's theory of inflation as the explanation. In contrast to Ueda's perspective, the actual behavior of inflation or deflation in both countries is not a puzzle at all but is to be expected according to the theory of inflation initially enunciated in Chapter 5, combined with the observation below that, in what I will call a "quasi-equilibrium," both the real interest rate and the unemployment rate can be anticipated to level off. First recall that inflation in the US economy since the mid-1990s basically has been determined by a mechanism including a shorter-term inflation expectations term incorporating both the central bank's target and lagged inflation and a term capturing estimated labor-market slack. That theory can be expressed readily in a simple formula. Core consumer inflation is:

(unity) (shorter-term expected inflation) – (beta) (unemployment rate – natural rate)

or:

(alpha) (target inflation) + (1 – alpha) (lagged inflation) – (beta) (unempl. rate – natural rate)

Before we plug in some figures for the United States, consider an interval of time that is shorter than the hypothetical longer-run steady state in which the unemployment rate has come into permanent equality with the natural rate. Instead, let's consider a less permanent period of quasi-equilibrium in which unemployment is more or less constant over time—implying a steady real interest rate—but at an average that has exceeded the natural rate of unemployment. The economy's equilibrating forces are too weak to lower quickly the unemployment rate to its natural rate, thereby bringing about reasonably promptly the conditions of the steady state. Under such soft economic conditions, this quasi-equilibrium has a distinctly Keynesian flavor. Of course, that impression may be tempered by recognizing that the operation of those equilibrating forces over time tragically has been impaired by overly meddlesome business regulations and government policies nurturing undue labor-market inflexibility. And fiscal excess involving an ever larger secular role for the public sector has sapped the vitality of the curtailed private sector. A sustained, though not fully permanent, situation in the labor market has resulted, in which the steady unemployment gap in reducing the inflation rate has about offset the central bank's target in elevating inflation. That rough balancing has kept inflation fairly stable, though beneath the central bank's target. During a lengthy interval, current inflation will just match lagged inflation. Setting them equal in the formula and collecting terms gives: Core consumer inflation is:

(1/alpha) [(alpha) (target inflation) – (beta) (unemployment rate – natural rate)]

Predicted inflation based on this theory can be computed readily in the United States for two six-year intervals before the worst disinflationary effects of the financial crisis and for the next four and a half years. The span from December 1996 through 2002 includes the interval after the Fed's inflation target entered the shorter-term inflation-expectations term but before the Fed's concern emerged about the "remote" chance of deflation. It began to give projections for a third year only in October 2007, which we will have to take as signaling its prior estimates of the natural rate of unemployment and implicit inflation target. The midpoint of its central tendency projection for the unemployment rate in the last quarter of 2010 was 4.8 percent, whereas the rate averaged 4.7 percent over the six years ending in 2002. Despite the recession early in the new millennium, our country evidentially varied around conditions of long-run equilibrium, unlike the persistently depressed employment in Japan. The midpoint of its 1.5–2.0 percent central tendency projection for core PCE inflation over 2010 was 1.75 percent, which we'll use for the Fed's unstated goal for this interval as it seems consistent with the discussion in Chapter 6. With stable average unemployment and inflation, along with the arbitrary but only tentative (pending more evidence) assumed values of 0.5 for alpha and 0.25 for beta, core consumer inflation is:

(1/alpha) [(alpha) (target inflation) – (beta) (unemployment rate – natural rate)]

or inflation is:

1.0 (1.75) – 0.5 (– 0.1) = 1.8 percent

Inflation in the core PCE from December 1996 through December 2002 averaged 1.6 percent.

The interval from December 2002 through 2008 comprises the six years after the Fed started to worry about deflation but before the worst disinflationary effects of the financial meltdown took place. The civilian unemployment rate averaged 5.4 percent. With the Fed's projecting ahead to 2010, we have a clue about its opinion of the natural rate of unemployment and its implicit inflation target. The midpoint of its central tendency projection for the unemployment rate in the last quarter of 2010 again was 4.8 percent, implying an observed average gap of 0.6 percent, and its central tendency projection in October 2007 for core PCE inflation over 2010 was 1.6–1.9 percent.[74] But in February 2009 the FOMC for the first time released an explicit longer-run value for PCE inflation with a central tendency of 1.7–2.0 percent. Such a targeted inflation rate probably had entered the minds of market participants previously. Thus, we'll put in an arguably more realistic 1.85 percent inflation target. Accordingly, with positive but approximately stable labor market slack in quasi-equilibrium, unemployment and inflation also will be steady. So, core consumer inflation is:

(1.0) (1.85) – 0.5 (0.6), or 1.85 – 0.3, or 1.55 percent

Inflation in the core PCE from December 2002 through December 2008 averaged 1.9 percent.

Taking both six-year periods together, the misses of – 0.2 percentage point and + 0.35 percentage point imply an average overprediction on the order of 0.1 percentage point.

The disinflationary effects of the financial meltdown mainly were felt after 2008. In January 2009 Committee participants also decided to announce their projection of the longer-run value for the unemployment rate, with a midpoint of 4.9 percent. That figure for the estimates of the meeting participants of the natural rate of unemployment increased further as time passed, reaching 5.6 percent by November 2011, where it remained until slipping off to 5.5 percent in September 2013. Over the whole period from 2009 through 2013, it averaged 5.4 percent. Since 2008 the actual civilian unemployment rate through December 2013 averaged 8.8 percent. True, including only normal declines in the rate of labor force participation, the adjusted unemployment rate excluding unusual cyclical effects would have been much closer to its peak of 10 percent in October 2009, as discussed previously. But since people leaving the labor force by definition don't look for work, they can't exert downward pressure on wages and thus prices. So it's still the measured unemployment rate relative to the unaffected natural rate that would be relevant in determining inflation. The gap of the unemployment rate above the natural rate averaged 3.4 percentage points from December 2008 through December 2013. Furthermore, the FOMC announced a 2 percent inflation target in January 2012, as markets probably thought beforehand too. Thus, core consumer inflation is:

(1/0.5) [(0.5) (target inflation) – (0.25) (unemp. rate – natural rate)],
or (1.0) (2.0) – (0.5) (3.4), or 0.3 percent

In fact, core PCE inflation ran higher over the whole period from the end of 2008 through December 2013—averaging 1.5 percent. Over just the last 12 months of that interval, core inflation slipped off to register 1.1 percent. Still, the projections of FOMC participants have called for a reversal, which was part of the justification for Chairman Bernanke's statement at the June 2013 press conference of the Committee's conditional plans for scaling back on asset purchases. "The Committee believes that the recent softness partly reflects transitory factors and with longer-term inflation expectations remaining stable, the Committee expects inflation to move back towards this 2 percent longer-term objective over time."[75]

Consider Table 9.2, which presents a simulation of this book's model of inflation. To be specific, the model of inflation to be simulated can be encapsulated in the following formula:

Core consumer inflation is:

(alpha) (target inflation) + (1 – alpha) (lagged inflation) – (beta) (unempl. rate – natural rate)

or:

1.0 + 0.5 (lagged inflation) – 0.25 (unemployment rate gap)

Use FOMC projections for unemployment released December 18, 2013, and start the simulation in late 2014. The midpoints of the central tendencies for unemployment rate reveal an anticipated gradual descent toward the natural rate through 2016. Assume that the unemployment rate thereafter stays just at the Committee's projected natural rate of 5.5 percent. The simulation for core inflation with the above equation suggests that the FOMC was a tad optimistic in projecting rising values given its prediction in late 2013 of a more elevated unemployment rate than tuned out to be the case.[76]

Table 9.2 Unemployment and Consumer Inflation (Percent or Percentage Points)

Year	*Projected Unemployment Rate*	*Projected Unemployment Gap*	*Projected Core PCE Inflation*	*Simulated Core PCE Inflation*
2013	7.05	1.55	1.15	1.15
2014	6.45	0.95	1.5	1.34
2015	5.95	0.45	1.8	1.56
2016	5.55	0.05	1.9	1.77
2017	5.5	0		1.87
2018	5.5	0		1.94
2019	5.5	0		1.97
2020	5.5	0		1.99

Source: Columns 2, 3, and 4: FOMC Press Conference on December 18, 2013; Projections Materials (released December 18, 2013, at 2:00 p.m.).

Epilogue: Implementing Policy Tightening Post-Meltdown with Massive Reserves

The procedures for policy implementation became unrecognizable after excess reserves began to mount in the autumn 2008 as a sizable Treasury deposit came to be swamped by lending activity and then the start of quantitative easing (QE). In the process, the Fed's balance sheet mushroomed from $880 billion in August 2008 to about $4-1/2 trillion by the time the Fed wound down QE3 in October 2014. The Trading Desk had long ago abandoned manipulating nonborrowed reserves in trying to influence the federal funds rate. Instead, as long as the funds rate target stayed in the *de minimus* range of zero to 25 basis points, such intended trading would be attained automatically despite the Fed's massive assets and excess reserves. That result was an outgrowth of paying 25 basis points to bank holders of Fed balances. Only the government-sponsored enterprises (GSEs) are not permitted to earn interest on Fed balances. Their lending of funds, especially by the Federal Home Loan Banks, has put just enough downward pressure on the funds rate relative to the rate paid on reserves.

The FOMC must not have intended to unwind the mammoth buildup of assets and excess reserves anytime soon, even after firming began. It already had announced in the Minutes released on July 10, 2013, its intention never to sell any of its mortgage-backed securities but instead to allow them to mature. A related signal occurred a day later. After all, if the Fed had intended to restore promptly its traditional manipulation of nonborrowed reserves, it never would have endorsed the redefinition of reserves and the monetary base that moved away from having the demands for those measures based on the structure of reserve requirements in the by-then superfluous process of reserve maintenance by depositories. But with the FOMC not envisioning a quick return of excess reserves to a frictional amount, thereby resurrecting its economic significance, surplus reserves apparently were seen likely to stay huge for the time being. On July 11 the Board decided no longer to show excess reserves explicitly anywhere on its H.3 release of data for aggregate reserves and the monetary base. (True, the amount of excess reserves still could be derived by subtracting required reserves from total reserves in Table 2 of that release.)

Moreover, the unadjusted monetary base was redefined to encompass reserve balances plus entirely contemporaneous currency in circulation. Thus, the vault cash lagged two weeks that satisfied reserve requirements was no longer used in the construction of the Board's official monetary base, despite the continued delay in reserve maintenance. If open market operations soon were to be redesigned to exercise close control over nonborrowed reserves and the funds rate, then for required and total reserves and the monetary base to reacquire economic meaning at that time would entail maintaining the long-standing practice of having all these measures both seasonally adjusted and "break adjusted" for regulatory changes in reserve requirements. But instead the Board allowed both those adjustments to lapse on that fateful day in July.

The Minutes of the July 29–30, 2014, meeting suggested that the FOMC planned to retain the funds rate as the main index of its policy stance. In addition, the FOMC would rely on the rate of interest paid on excess reserves to move the federal funds rate between the top and bottom of its range. Also, an overnight reverse repurchase facility—involving the temporary sale and later purchase of Treasury securities at the initial price plus interest—would help establish a floor for the federal funds rate.[77] But that facility would allow *all* participating lenders of funds to the Fed, including the GSEs, to earn a positive return on their balances. Such an opportunity might be considered a circumvention of the wishes of the Congress. Concern also had been expressed that in a crisis lenders could inappropriately turn away from private counterparties and advance funds via the facility instead only to the perceived safe Fed.

After final deliberations at its session in September 2014, the FOMC released a separate statement entitled "Policy Normalization Principles and Plans." Four features jumped out at me: (1) Even as the funds rate moves higher, the Committee intends to continue to aim at a *range* for trading, possibly remaining 25 basis points wide; (2) the end or gradual phase out of the reinvestment of maturing Treasury and GSE securities will only occur sometime *after* the liftoff of the funds rate; (3) Treasuries as well as MBS won't be sold outright in volume, but rather they will decline predominantly through running off at maturity; and (4) the limited overnight reverse repurchase agreement facility will be used to set a floor on the funds rate only as long as needed and then will be discontinued.

In the July Minutes the FOMC already had waxed nostalgic about ultimately restoring the bygone halcyon days of yore:

> Participants . . . believed that, in the long run, the balance sheet should be reduced to the smallest level consistent with efficient implementation of monetary policy and should consist primarily of Treasury securities in order to minimize the effect of the SOMA portfolio on the allocation of credit across sectors of the economy.[78]

At Yellen's press conference shortly after the September meeting, she expressed the intention of returning fully to normal by "the end of the decade."[79]

Part III of this book will cover related developments in the Bernanke years. Initially we'll consider fiscal issues, including a new theory of how federal debt affects real long-term rates. Then we'll turn from macroeconomics to microeconomics when Chapter 11 sees how legislation has affected the Fed's responsibilities in regulatory and supervisory policy. But first is a comparison of the Aldridge Report undergirding the structure of the Fed with the Report on the Financial Crisis that wasn't even released until after the Dodd-Frank Act was enacted. The following chapter explains the absence of criminal prosecutions after the financial meltdown. Next is the revelation of the Fed's massive emergency loans in the financial crisis. The end of that chapter examines how the Fed's unorthodox policies could affect its independence in making conventional monetary policy. Finally, Chapter 13 will address disinflation or deflation abroad.

PART III

Related Developments in Chairman Bernanke's Era: February 2006–January 2014

The predictably ill-fated Republican strategy resulting in a partial closure of the federal government as the 2014 fiscal year began reminded me of the last stanza of the poem "Rain in the Mountains," written by Australia's Henry Lawson a century-and-a-quarter ago:

> But, love, the rain will pass full soon,
> Far sooner than my sorrow,
> And in a golden afternoon
> The sun may set to-morrow.[1]

The extremely insightful Anne Applebaum used prose to encapsulate my own lasting sorrow:

> Americans are paying a high price for this week's events. The cost of shutting down the federal government, for a few days or even a few weeks, pales in comparison to the damage done to the credibility of the United States abroad—and the credibility of democracy itself.[2]

CHAPTER 10

Taxing and Spending: Taking a Closer Look at Fiscal Policymaking and Communication

The fiscal logjam in Washington brought vividly to mind the time Bill Dennis, my friend from Earlham College, asked me in early 2004 to address his class. He was teaching Washington interns, who were taking a semester with The Fund for American Studies, with the credits coming from Georgetown University. A student asked a very perceptive, skeptical question implying that the Bush tax cuts of 2001 and 2003 were ill-advised. Influenced by Keynesian orthodoxy but to my eternal shame, I responded that the first cut was appropriate under the prevailing recessionary conditions, but of course it would need to be rescinded during the ensuing phase of economic expansion. But instead another tax cut had been enacted in May 2003, despite Chairman Greenspan's protestations. The second tax cut had happened even though the recession had ceased in November 2001 according to the National Bureau of Economic Research and four years of structural federal fiscal surpluses had ended in the same year according to the Congressional Budget Office.[1] Prompted by Grover Norquest's pledge of no additional tax revenue, a large segment of Republicans later became unwilling to approve counteracting hikes in tax revenue. My answer to Bill's student has got to rank among the most naïve utterances of all time. I abjectly apologize to that student, who I bet—based on the astuteness of his question—is reading this book!

Designing a Fiscal Policy for the Ages

That woeful experience has induced me to formulate the general principle that the best counter-cyclical fiscal policy is just to establish immediately the optimal long-run environment. With the central bank's help, the private sector will adjust soon enough if that process is not stunted by unjustifiably intrusive regulations and government policies breeding undue labor-market inflexibility. And the so-called "German hypothesis" of the early 1980s may assume more importance under current circumstances. It holds that in certain circumstances fiscal austerity can impart an expansionary impulse because cutting government debt generates an improvement in confidence among households and entrepreneurs.[2] The actual as opposed to structural federal deficit still would reflect the business cycle through "automatic stabilizers."

Let's recall an historical fact, however neglected it has been since the turn of the century: During most of the final two decades of the last century, conventional wisdom actually justified such a nonresponsive fiscal arrangement because political factors were thought likely to render the real-world passage of fiscal policy too delay-ridden to be an effective counter-cyclical tool.

Recent research also bolsters the case for fiscal stringency. As John Berry has written,

> In a speech in March, Carlo Cottarelli, director of the IMF's Fiscal Affairs Department, described some of the profound impacts of a high debt/GDP ratio found in recent research by IMF economists. For instance, debt service costs tend to crowd out private investment and reduce productivity growth. "The difference in potential growth between having a debt ratio of 120 percent of GDP and a debt ratio of 60 percent of GDP is about one percentage point . . . Italy and Japan, two high debt-low growth countries, are good examples of this kind of effects," Cottarelli said.[3]

This work builds on a burgeoning empirical literature stemming from an influential 2010 paper by Carmen Reinhart and Kenneth Rogoff. Thomas Grennes, an economics professor at North Carolina State University, supplied a bibliography to which he contributed.[4] The empirical research suggested that above a tipping point, an increase in the ratio of government debt to GDP begins to impair growth in potential GDP. The data-based literature underlying that conclusion gave the requisite theory somewhat short shrift until it was sketched out in a 2013 paper by Carmen Reinhart, Vincent Reinhart, and Kenneth Rogoff:

> The standard textbook discussion of connections between public debt and economic growth emphasizes two potential channels. The first channel operates through a quantity effect on private sector investment and savings. When public debt is very high, it will tend to soak up the available investment funds and thus to crowd out private investment. If the government at the same time is imposing policies that attempt to reduce its debt burden with higher taxes, a burst of unexpected inflation, or various types of financial repression, then investment may well be discouraged further. The second channel involves a rising risk premium on the interest rates for government debt. Sufficiently high levels of public debt call into question whether the debt will be repaid in full, and can thus lead to a higher risk premia [sic] and its associated higher long-term real interest rates, which in turn has negative implications for investment as well as for consumption of durables and other interest-sensitive sectors, such as housing.[5]

Such a mounting default premium was not always confirmed by the experience assembled in the paper. But that textbook description usefully could be augmented as follows, perhaps capturing more examples. Above the threshold, people also increasingly begin to fear an associated more oppressive tax burden down the road. But that's just the issue raised by the literature on Ricardian equivalence, as analyzed in detail in the appendix to this chapter. That doctrine posits that rational, forward-looking households consider a tax cut financed new federal borrowing to be identical to a future tax hike. Accordingly, they would increase their current saving instead of their consumption. As the prospect of higher taxes in the future intrudes more and more on the consciousness of households, aggregate demand would be repressed further, as summarized by in Governor Bernanke's 2003 speech in Japan.[6]

And as that psychology sets in, supply-side factors also would begin to retard the growth of potential output. To be sure, people's willingness to work wouldn't seem to be impaired. But investors would start to have an intensifying incentive to send capital abroad rather than invest in domestic government debt or other local financial assets with returns subject to higher prospective taxes. That reaction, as the debt ratio mounts further above the threshold, also would tend to elevate progressively domestic real interest rates even abstracting from greater default risk—not only on government securities but generally. Such financial responses successively would damp investment projects and retard potential as well as actual real growth. Now we're cookin' with gas!

Later, this chapter later will take quite seriously the worrisome ultimate prospect that US financial markets could well come to view a rising ratio of federal debt to GDP with alarm and at that point will begin to evaluate potential policy actions in that context. But first let's interrupt our gaze into the future to contemplate some historical facts. Here's one that has been neglected for too long: After an initial cut in tax rates, President Reagan was forced to hike tax rates several times in order to reduce the augmented federal deficit. The reason was that "supply-side economics"—according to which tax rate reductions under then-prevailing circumstances would stimulate effort, production, and reported income while diminishing tax avoidance enough to be self-financing—failed to persuade me when it was first enunciated and remains unpersuasive today.[7] So for a variety of reasons, there will never be a better time than the present for all the Bush tax cuts to expire![8, 9]

In addition, I considered reducing both the US military presence around the globe and government health care expenditures to be desirable. Thus, given the failure of the congressional "Supercommittee" to live up to its name in mid-November 2011, you can see why I also favored triggering the automatic sequester of federal spending cuts agreed to as a "Doomsday Machine" last resort. In principle across-the-board spending cuts were much inferior to a selective, flexible approach yielding the same amount. But in practice the political realm was incapable of achieving that end, so triggering the sequester represented the only hope for curtailing federal expenditures over time. (The Congress at first pushed back the timing of its inception from year-end 2012. But two months later it allowed the automatic across-the-board restraints on spending to kick in, with the expenditure caps becoming more and more binding with each passing year.)

A compelling analysis by Ezra Klein already had appeared. Though he may not have been supportive himself, his column noted the wisdom of letting the sequester and the expiration of all the Bush tax cuts take place at the time of the original deadline:

> In August, Republicans scored what they thought was a big victory by persuading Democrats to accept a trigger that consisted only of spending cuts. The price that Republicans paid was (1) concentrating the cuts on the Pentagon while exempting Social Security, Medicaid and Medicare beneficiaries, and (2) delaying the cuts until Jan. 1, 2013. That was, they figured, a win, as it eschewed taxes. Grover Norquist's pledge remained unbroken.
>
> But 12 years earlier, George W. Bush had set a trigger of his own. To pass his tax cuts using the 51-vote sunset reconciliation process, he had agreed to let them sunset in 2010. A last-minute deal extended them through 2012.

> So now there are two triggers. One is an extremely progressive spending trigger worth $1.2 trillion that goes off Jan. 1, 2013. The other is an extremely progressive tax trigger worth $3.8 trillion that goes off . . . Jan. 1, 2013. If you count reduced interest payments, the two actions alone would reduce future deficits by about $6 trillion. That's far more than anything the "Supercommittee" came close to discussing. It is distributed far more progressively than anything the Democrats have even considered possible. And all that needs to happen for it to pass is, well, nothing.[10]

As a justification for reducing unemployment, the Keynesian logic of the Obama administration's initiatives all along was unpalatable to me. In early 2009 an ill-considered stimulus package of some $830 billion laden down with a grab-bag of pork-barrel projects was hastily ratified. Despite CBO's Keynesian-inspired estimates to the contrary, the program had little obvious macroeconomic effect beyond some direct impact on government spending and taxing. The latter ineffectiveness would be predicted by Milton Friedman's permanent income hypothesis of consumption, as noted in Chapter 9. And even the spending impact itself at best was delayed in the case of projects that were not "shovel ready." Still, the administration's faith in Keynesian orthodoxy persisted. For example, consider the alleged boost to consumption of the serial enactments of further extensions (on the heels of many years of life already) of a payroll-tax "holiday" and "emergency" unemployment insurance benefits? (Don't you just love the government's terminology? No, it wasn't coined by George Orwell.) The fact that each one was supposedly "temporary" of course would undercut any simulative spending impact.

Yet given the long-run insolvency of Social Security, a solution hardly would embody continuing a lower rate for payroll taxes. And the other component, which lengthened the duration of unemployment insurance when long-term joblessness already was way too high, had a flat-earth quality. The accepted theory of job search implies that lowering the cost of being without work will increase reservation wages, lengthen the average duration spent looking for a job, and raise the unemployment rate on average. That conventional economic theory was endorsed, if somewhat opaquely, by Chairman Bernanke in answer to a question in testimony we'll turn to soon. Vice Chair Yellen later plausibly attributed the rise in the unemployment rate relative to job vacancies to this very program.[11] Still, in supporting the initiative, Alan Blinder had called its implementation "a no-brainer."[12]

Mark Zandi of Moody's Analytics estimated the size of the extensions through year-end 2012 of the payroll tax cut and unemployment insurance (UI) adopted in February 2012:

> Keeping the 2-percentage point cut in payroll taxes in effect through the remainder of 2012 will put approximately $100 billion in workers' pockets, while extending the emergency UI program will provide $45 billion to the unemployed. Together, the benefit of these programs to American households equals almost 1% of GDP.[13]

So not only would this program end on the same day as the Bush tax cuts expired and the sequester began but each was about the same size in the first year as well. As one analyst concluded, "The upshot is that fiscal restraint in Q1 would probably be limited to less than $450bn (annualized), or about 3% of GDP."[14] Thus, my newly adopted viewpoint called for an additional fiscal drag of *only* around 3 percent of the economy at the start of 2013![15]

Sidestepping the Fiscal Cliff

Given that position, you can well imagine my reaction to Chairman Bernanke's late-February 2012 testimony to the House Financial Services Committee:

> "Under current law, on Jan. 1, 2013, there's going to be a massive fiscal cliff of large spending cuts and tax increases," Bernanke told the House Financial Services Committee. "I hope that Congress will look at that and figure out ways to achieve the same long-run fiscal improvement without having it all happen at one date."
>
> The tax hikes and spending cuts could knock GDP growth in 2013 down from 2.6 percent to 1 percent, according to Andrew Fieldhouse, a federal budget policy analyst with the liberal Economic Policy Institute.[16]

In light of that hit to projected economic growth, I could not help but think back to the attitude of the heroic Paul Volcker when the country faced an equally serious inflationary crisis rather than the current fiscal crisis. In May 1979 Volcker, still president of the New York Fed, said in an FOMC meeting that "we have to run not too scared" of a worse-than-expected recession.[17] In all fairness, Bernanke also had articulated his mantra earlier that month before the Senate's Committee on the Budget that we need a "credible plan for longer-term return to sustainability" in fiscal affairs, before he emphasized that such a lengthy horizon doesn't mean that in making decisions about the future the Congress can always "push it off mañana." Unfortunately, the two-month delay of the sequester itself to early March 2013 vividly demonstrated the political reality that the current legislature can't bind future congresses. Thus, kicking the can down the road is precisely the inevitable practical implication of Bernanke's mainstream advice. Mathew Dowd quipped on George Stephanopoulos's TV show *This Week* that when he hears someone say that they plan to "cut the grass," he doesn't believe it until he sees that the grass actually has been cut.

The appropriate approach instead is captured in this paraphrase of Senator Barry Goldwater (Republican, Arizona): "Extremism in defense of fiscal rectitude is no vice! And moderation in pursuit of a sustainable debt to GDP ratio is no virtue!" (Hmmm . . . Somehow that doesn't have the same resonance, does it? Even the original version helped cost Goldwater the 1964 election in a landslide.)[18]

Still, by the July 2012 Monetary Policy testimony, criticism from both parties of the Fed's fiscal timidity had intensified. For example, on July 17 Senator Bob Corker (Republican, Tennessee) noted that sequestration would amount to spending cuts of $1.2 trillion over the next ten years, while planned federal spending totaled $45 to $47 trillion in that period. He went on:

> *Senator Corker:* [W]e're talking about $108 billion dollars next year in reductions, half between defense and half in other mandatory reductions. You're seriously concerned that that small amount of spending reductions is something that is going to damage the economy? . . . Would you not also say that the best thing we can do to stimulate the economy, including any actions that the Fed might take, is for us to have real, balanced fiscal reform?
>
> *Chairman Bernanke:* [T]he way the current law is written, we have the maximum impact right in the very short run on January 1, 2013, and much less happening over the next decade . . . [T]he timing should be adjusted to allow the economy a little more space to continue, but to make a serious effort to improve [fiscal policy] over the next decade.

> *Senator Corker:* [R]ecommending that we simply kick the can down the road, not do sequestration, and make us look even more irresponsible to me is worse than the $108 billion that might be reduced out of the spending that the federal government's going to be doing this next year . . . I candidly wish we had a chairman of the Fed that sometimes would say, "Look. We're not doing anything else. We're pushing rope. And it's up to you to act responsibly to deal with these fiscal issues. Quit looking to us!"

Representative Michael Capuano (Democrat, Massachusetts) picked up the same cudgel the next day: "To suggest that shifting round $500 billion in an economy that's $15 trillion is going to change the dynamics of the world is a little concerning to me. If it's not going to be $500 billion, then what do you think is . . . a number that will not dramatically throw us off this cliff?" Bernanke replied, "There ought to be more gradual approach. I don't want it all to happen on one day." Representative Capuano responded that the impact won't all happen on one day, but will be spread out over a year. "This fiscal cliff thing really needs a tone of reality."

Representative Ed Royce (Republican, California) referred to two of the studies on debt to GDP discussed above, the one at the IMF and the other by Reinhart and Rogoff. Although the specific figures that he attributed to the first study sounded wrong, he correctly summarized its finding that a current decline in the ratio of debt to GDP in some foreign countries typically would be associated with a rise in economic growth, while the second work found that an increase of debt to GDP above a 90 percent cutoff would impede real growth. Bernanke gave no indication of having heard of the first study but said that he couldn't buy into the specific 90 percent figure, understandably so for today's United States, which is viewed as the best credit risk around. Needless to say, for a congressman to have a sharper interpretation of recent economic research than the Fed chairman surely would be discomforting.

In the event Vice President Joe Biden and Senate Minority Leader Mitch McConnell (Republican, Kentucky) worked out a deal that kept the less-wealthy income earners from falling off the fiscal cliff at year-end as far as taxes are concerned. The Democratic Party predominately had opposed both Bush tax cuts in his first term, appropriately defending sound federal financing. But only a decade later the administration helped to engineer a major reversal of that Democratic orthodoxy. As 2013 began it prevented a return to the higher Clinton-era tax rates for households with annual incomes below $400 thousand ($450,000 if married), though not for higher-income taxpayers. To be sure, it also allowed the 2011 tax-holiday that cut payroll taxes to expire and imposed new taxes to finance Obamacare.

The drumbeat of congressional resistance to the Fed's fiscal alarm continued into the New Year at the next monetary policy hearing:

> Last month, lawmakers dismissed Fed Chairman Ben S. Bernanke's warning to Congress that such short-term budget contractions "could create a significant headwind for the economic recovery."
>
> Congress would have "zero" credibility if lawmakers tried to "somehow postpone" the budget cuts and promise to implement them later, Republican Senator Patrick Toomey told Bernanke during the Fed chairman's Feb. 26 testimony before the Senate Banking Committee. "Our economy would respond in a very adverse way, because it would see that we have absolutely no willingness, no political ability to begin even the slightest imposition of fiscal discipline."[19]

Despite the opposition of the Fed and the administration that was partly based on the results of Keynesian-style model simulations issued by the CBO, the automatic sequester affecting federal spending did go into effect on March 1, 2013, essentially split evenly for 2013 between defense and non-defense categories. The consequent macroeconomic effects evidently proved to be much less severe than contained in the dire warnings of the Fed, the administration, and the CBO.[20]

The necessity of both a "continuing resolution" to keep the federal government open after the start of the new fiscal year on October 1 and a hike in the statutory debt ceiling came to a head at that time. As happened nearly two decades earlier, certain Republicans, in this case led by Texas Senator Ted Cruz, Nevada Senator Mike Lee, and a Tea Party-inspired block of conservatives in the House, threatened an unacceptable government shutdown. They demanded the incorporation of a series of strange and unpopular steps as part of the necessary continuing resolution to keep the government going.[21] They succeeded in late September in getting Speaker of the House John Boehner (Republican, Ohio) to include defunding all of Obamacare, then delaying all of it, then delaying just the individual mandate, which was no way to treat an innocent existing law, even a wayward one. The plan remained ill-advised despite these more-of-the-same tweaks, because the price of getting their way involved threatening to halt the government's full functioning.[22]

Anyone should have learned from the debacle of the Gingrich-Armey-induced shutdown of 1995–96 that at a bare minimum a politician who can't keep the trains running on time doesn't deserve to be entrusted with political power, however distasteful the alternative. Far superior is the traditional deliberative process in a representative democracy. That "regular order" consists of committee hearings and approval, votes in the House and Senate, conference compromises to hammer out final legislation, and then signature by the president. But the events of the last several years suggest that any such hope once again will prove to have been in vain.

The irrationality of the partial shutdown of the federal government in October 2014 certainly did not augur well for a successful resolution of the debt-ceiling debate, a much graver issue. Any initiative risking a suicidal failure to extend the debt limit implied non-payment of preexisting government obligations, even if a narrow "default" on interest and principal for Treasury debt were to be avoided. Such an outcome is unthinkable, despite the Panglossian reassurances by some Republicans (and their media allies such as the normally more sensible commentators on Fox News Charles Krauthammer, Brit Hume, and George Will) about the soundness of a strategy that could lead to "prioritizing" payments in the event that the threat of a binding debt constraint were realized.

The president and congressional Democrats also suffered in the public relations battle, though less than their political adversaries. That downtrend in public opinion picked up steam when the administration encouraged the National Park Service to barricade the outdoor World War II memorial on the National Mall, thereby proving that stupidity wasn't a monopoly of the GOP. American veterans of what the Russians call "The Great Patriotic War," who were often octogenarians in wheelchairs, successfully stormed the barricades, likening their action to the Normandy invasion. And the opening of the computerized health-care exchanges for individuals as October began was beset by fundamental design and programming problems that limited the number people who actually could sign up for mandated insurance even if many more wanted to do so. (The public relations impact of this ominous substantive disaster at first was muted by the Republican's newsworthy shenanigans.) Then, Savannah Guthrie, moderating *Meet the Press*, remarked that "the president's stance is 'I Won't Negotiate!' And even if there is a host of reasons why that is a responsible position, as a bumper sticker, it's not the greatest, is it?"[23]

At the last minute, Senate Majority Leader Harry Reid brokered a simple deal with Minority Leader Mitch McConnell to avert a more momentous self-inflicted catastrophe. After a 16-day shutdown, the government was reopened on January 15, 2014, the debt ceiling was suspended until February 7, and a bi-partisan budget committee was instructed to report by December 13.[24] The pact also retained the increasingly constrained levels for baseline spending in the sequester legislation that had produced outright cuts for two straight years. But the budget committee reached a deal that reduced those automatic sequester cuts in the next two fiscal years, though paying for the higher discretionary spending with lower federal and military pensions and higher fees for airline security. The Congress thus punted on longer-term deficit reduction.

Analyzing How Quantitative Easing Alters Fiscal Policy's Effect

Let's now try to understand the interaction of QE3 with the prevailing fiscal policy that has featured huge federal deficits and an explosion of overall governmental debt. The president and the Congress to date have been incapable of enacting a program to scale back promised entitlements after another decade by enough to prevent the assent of the ratio of gross government debt to GNP. Reducing the prospective growth rate of total federal debt enough to approximate that of the country's trend rate of expansion of national income measured in current dollars would be needed. The Fed's augmentation of QE3 to encompass large-scale Fed purchases of longer-term Treasuries in December 2012 thereafter did finance a significant part of federal deficit. So, while of course not affecting overall gross debt, the Fed's unorthodox approach after year-end 2012 did appreciably retard the expansion of a measure of Federal government debt *excluding* the holdings of the Federal Reserve—that is, federal debt in the hands only of the true public. That effect has been especially noticeable for the *ratio* of that net debt measure relative to national income.

The analysis in the appendix to this chapter covers the interactions between monetary and fiscal policy and the changing significance of different debt concepts in varying states of the world. It concludes that if no households are forward-looking enough to consider that future taxes may have to rise to pay off the enlargement of federal debt, no concept of Treasury debt would matter one bit to consumption. But once some taxpayers start to worry about their future tax burden, so-called Ricardian equivalence between federal borrowing and current tax hikes in financing deficit spending would begin to apply. With historically sterile reserves, in the range beyond the threshold the relevant concept of net debt would *exclude* the holdings of *all* government agencies, which of course would encompass the Federal Reserve. Thus, the conventional measure of net governmental debt would *not include* the Fed's ownership.

But the passage of the Emergency Economic Stabilization Act of 2008 was absolutely consequential in this regard because that bill also accelerated the effective date of possible interest on reserves to October 1 of that year. Afterwards, the present value of the expected extra payments on excess reserves created by quantitative easing effectively would fully offset the comparable measure of the expected extra interest income on the new bonds acquired by the Fed. It presumably would keep the interest rate on excess reserves closely aligned with its intended funds rate. So the expectations theory of the term structure would indicate that market expectations of the weighted average of the succession of interest payments on the added excess reserves would match the anticipated future interest return on the additional holdings of bonds (apart from a term premium). That correspondence would imply that the present value of the Fed's expected remittances to the Treasury would be unaffected, so the need for higher future taxes would not be curtailed by central bank purchases of longer-term Treasury securities.

Another implication of this analysis is that after the inception of interest on reserves, the measure of debt "in the hands of the public" that *includes* the Fed's holdings of Treasury securities would be what is relevant above the threshold. The name I have given to this concept consolidating the holdings of Treasury securities across the agencies of the government *other than* the central bank is "net* debt." In contrast to 2013's decline in the conventional net government debt ratio, the ratio of net* debt to income has not fallen in the last decade. Once the ratio starts to rise appreciably again in about a decade and the public later begins to become forward-looking, the underlying problem will get ever more acute regardless of whether the Fed augments, maintains, ceases, or reverses its program of quantitative easing.

Thus, since interest on reserves became effective in 2008, governmental net* debt relative to income would have been relevant in the United States in determining the threshold above which the growth of potential output would start to be repressed. But Tom Grennes informed me in mid-2012, "On empirical grounds, all the cross country studies, including ours, use gross debt because it is the only measure available on a consistent basis."[25] Still, the gross debt and net* debt constructs no doubt would continue to be positively correlated over time. That observation would be the case not only below the threshold where the distinction between the two debt measures doesn't matter, but also above the threshold where it would matter in practice, unlike the delimited theoretical results of the appendix that abstract from the trust funds. So even the inadequate international evidence relied on in those previous studies could have been interpreted to suggest indirectly that in the United States it would be the ratio of net* debt to GDP that above some tipping point would begin to impair the growth of potential output.

Yet until any taxpaying households start to worry about the future tax burden and bond vigilantes become concerned about potential default and begin to bid up real market bond rates, no measure of debt would matter a whit to real bond rates, consumption, or actual or potential economic growth. And with Treasury debt still considered the safest available investment in the world, I would assert that such a situation continues to apply. As yet, this country evidently has not reached the point where higher future taxes have become a concern and bond vigilantes have sprung into action out of worry about potential governmental default. But with current fiscal trends this complacency can't go on evermore. Someday those economic agents will start to become fully forward-looking and, in economist's jargon, "rational." At that point the debt threshold will be breached. And unless the looming fiscal problem is addressed successfully at that point, the situation will only worsen progressively. Still, as that happens, because reserves bear interest the Fed's hands will be tied regardless of its posture regarding quantitative easing. The Fed's practice in 2013 of open-ended large-scale Fed purchases of government debt did not postpone that day made inevitable by the prospective overly large deficits. Indeed, any Fed decision of whether to expand, retain, cease, or unwind its policy of quantitative easing, despite a temporary impact on long rates, will not affect the timing of the eventual reckoning.

Seven months after I received Grennes's bibliographic email, which was reproduced earlier, a stimulating pager dealing with some of the same issues by David Greenlaw, James D. Hamilton, Peter Hooper, and Frederic S. Mishkin became available.[26] It attempted to quantify the historical effects in many countries of how much rising overall government debt relative to national income had raised longer-term interest rates. But I would criticize not only their paper but also of the existing literature on this subject as well, based on the theory in the appendix to Chapter 10. The appendix's theoretical analysis explained previous statistical results for the sudden emergence of an increasing retardation on potential output above a tipping point for debt by contending that Ricardian equivalence starts to apply as the public begins to worry both about an oppressive future tax burden and the risk of a governmental default on existing obligations for interest and principal. With sterile reserves the measure of net governmental debt should exclude central bank holdings, but after the authorization of interest-earning reserves, those holdings instead should be included. The authors don't refer to that important distinction. Of course, Ricardian equivalence does not hold at low levels of the ratio of debt to GDP, so over that lower range, no measure of debt would have mattered at all.

Thus, isolating this impact of debt on real rates would require looking for a threshold effect, which their paper didn't do. The approach still could identify a conventional "crowding-out effect" on real interest rates, though one might expect that the *increase* in debt associated with deficit finance would matter more than the *level.* That said, they wrote on p. 16, "The general findings in Gale and Orszag (2003), Reinhart and Sack (2000), Kinoshita (2006), Laubach (2009), and Baldacci and Kumar (2010) are that a one-percentage-point increase in the actual or projected debt-to-GDP ratio raises the long rate by 3–7 basis points."[27] Their own research, which found similar impacts, distinguished between the separate effects of gross and the conventional definition of net debt that presumably excludes central bank holdings.

In CBO's February 2014 forecast, the ratio of the federal debt including Fed holdings relative to nominal income was seen as reaching 74 percent at the end of calendar 2014—the highest since 1950 when the WWII bulge was dissipating.[28] A mounting overage of that figure was in prospect within a decade, even with optimistic current-law fiscal policies, once the ratio dipped to 72 percent in the next few years. If the Fed maintains the administered rate on the excess reserves created by its purchases of securities in line with its intended funds rate, the appendix indicates that such an approach would prevent decisions about quantitative easing from stopping households from starting to worry that a more oppressive tax burden will be needed to keep public finances whole. Then consumption increasingly would become damped by concerns about government default on the interest and principle. Such an eventuality would induce investment funds progressively to shift abroad, pressuring domestic real bond rates ever higher.

The fact that federal spending now is financed by borrowing at a low interest cost is not really important. What is important is that the fundamental problem would not be alleviated by quantitative easing even though much of the substantial borrowing by the Treasury in effect is financed by the Fed purchases in the secondary market. To be sure, the public never will have to repay the interest and principle as it comes due on the portion of the national debt owned by the Fed. Instead, all the extra payments of interest and principal on the new Fed purchases of government bonds now will go to the central bank, which will return every penny (after an adjustment for its capital gains or losses) to the Treasury. But higher anticipated interest payments on the enlarging bank excess reserves would keep the present value of the expected Treasury remittances from rising at all, apart from any influence of a term premium. So the eventual fiscal problem would come ever nearer despite the Fed's QE decisions.

When the Fed buys MBS, it is not loading up on literal Treasury debt. But the government's guarantee through Fannie and Freddie of the payments underlying these securities makes the fiscal impact of such Fed acquisitions essentially identical to overt purchases of Treasury debt. And the banks similarly gain more interest-earning excess reserves, again offsetting any fundamental augmentation of Treasury remittances. The eventual effects on market and consumer sentiment are virtually the same as if the Fed were buying Treasuries.

The appendix now will show why, given interest-earning reserves, decisions about QE won't affect the timing of any emergent concerns about future taxes or government default on its debt. It sets the stage by analyzing a 2003 speech by Governor Bernanke in Tokyo.

CHAPTER 10 APPENDIX

Understanding from the Ground Up How Monetary and Fiscal Policies Interact

In May 2003 then Governor Ben Bernanke presented a momentous speech in Tokyo on the appropriate monetary policy by the Bank of Japan (BOJ) to a group of monetary economists:

> My thesis here is that cooperation between the monetary and fiscal authorities in Japan could help solve the problems that each policymaker faces on its own. Consider for example a tax cut for households and businesses that is explicitly coupled with incremental BOJ purchases of government debt—so that the tax cut is in effect financed by money creation. . . .
>
> [T]he government's concerns about its outstanding stock of debt are mitigated because increases in its debt are purchased by the BOJ rather than sold to the private sector. Moreover, consumers and businesses should be willing to spend rather than save the bulk of their tax cut: They have extra cash on hand, but—because the BOJ purchased government debt in the amount of the tax cut—no current or future debt service burden has been created to imply increased future taxes. Essentially, monetary and fiscal policies together have increased the nominal wealth of the household sector, which will increase nominal spending and hence prices. . . .
>
> Potential roles for monetary-fiscal cooperation are not limited to BOJ support of tax cuts. BOJ purchases of government debt could also support spending programs, to facilitate industrial restructuring, for example. The BOJ's purchases would mitigate the effect of the new spending on the burden of debt and future interest payments perceived by households, which should reduce the offset from decreased consumption. More generally, by replacing interest-bearing debt with money, BOJ purchases of government debt lower current deficits and interest burdens and thus the public's expectations of future tax obligations.[1]

Setting the Analytical Stage for Assessing Governor Bernanke's 2003 Japan Speech

Those words offered a novel prescription for handling the threat posed by the zero bound on the short-term interest rate used to conduct monetary policy. In examining the speech's content, one should emphasize at the outset that his analysis of monetary policy was exceptionally lucid in principle and prophetic as well. His treatment of its influence under the disinflationary or even deflationary conditions of the zero bound as opposed to a normal situation was spot on, unlike the later inflationary concerns in our country of monetarists and some other conservative economists.

Governor Bernanke's speech did conclude correctly that with the state of the world prevailing in Japan and then in the United States of sterile excess reserves, the central bank's security purchases in fact would eliminate the subsequent elevation of the debt service burden perhaps requiring higher future taxes. The central bank's action would mean the Treasury's payment of interest and principal on the securities no longer held by the public would go to the central bank. Absent capital gains or losses, the central bank soon would return those payments to the Treasury. Expectations of that effect with rational economic agents would raise household wealth, offsetting fully the drop in consumption otherwise caused by expectations of higher future taxes. Bernanke noted too that the sellers of newly issued government debt would receive additional cash to replace their prior holdings of an interest-bearing asset. In response to the lower taxes and boost to wealth, consumption would rise. At the lower bound, large-scale central bank purchases of government securities with rational actors thus would have had a crucial effect under the actual conditions of sterile reserves that always has prevailed in Japan and at that time applied to the United States as well.

This appendix will look in more detail at the speech's examination of the fiscal impact of a cooperative strategy. Constraints on complexity and space in his oral speech meant that Bernanke understandably could not have tried to cover all the bases. By contrast, a written appendix in a book empowers the author to attempt to be comprehensive, despite the inevitable complications. This appendix therefore will conduct a guided tour of all the cases capturing the possible permutations of three alternative states of the world: (1) bank reserves that lie idle versus earning interest; (2) households, businesses, taxpayers, and bond-market participants that are naïve and backward-looking versus rational and forward-looking; and (3) a central bank that conducts only orthodox open market operations versus quantitative easing via large-scale purchases of government securities. There are eight permutations of these three states of the world either one way or another (2 × 2 × 2).

We shall see how altering the combination of those three states of the world would affect the meaning of three different measures of debt: (a) gross debt that encompasses all forms of government debt; (b) net debt held only by the true public sector that deducts government debt held by *all* agencies of the government, including the central bank; and (c) net* debt that *includes* debt held the central bank but deducts *only* the government debt held by all other government agencies. New federal borrowing initially would have increased gross government debt and net* debt by a like amount. Net debt would stay unchanged rather than rising comparably only if the central bank via quantitative easing buys all the newly issued securities from the true public.

We'll always consider a borrowing-financed tax cut. We'll see that the academic notion of Ricardian equivalence is relevant. It's a concept named for David Ricardo, the British economist who lived from 1772 to 1823, but resuscitated in 1989 by Robert Barro.[2] It posits that rational households foresee that a future tax hike is the same as today's deficit spending financed by borrowing. Thus, they consider today's borrowing as equivalent to a tax increase. Anytime Ricardian equivalence holds fully, all households, businesses, taxpayers, and investors have become rational, so we are

Table 10.A1 The Interaction of Monetary and Fiscal Policies with a Deficit-Financed Tax Cut

	Public	*Central Bank*	*Public*	*Central Bank*
	1. Ricardian	Traditional	2. Ricardian	QE
Reserves	All debt up		Net debt same	
Sterile	Wealth same		Wealth up	
	Consumption same		Consumption up	
	3. Naïve	Traditional	4. Naïve	QE
Reserves	All debt up		Net debt same	
Sterile	Wealth impact ignored		Wealth impact ignored	
	Consumption up		Consumption up	
	5. Ricardian	Traditional	6. Ricardian	QE
Reserves	All debt up		Net* debt up	
Earn Interest	Wealth same		Wealth same	
	Consumption same		Consumption same	
	7. Naïve	Traditional	8. Naïve	QE
Reserves	All debt up		Net debt same	
Earn Interest	Wealth impact ignored		Wealth impact ignored	
	Consumption up		Consumption up	

way above the debt threshold where that circumstance has just started to emerge. Under those conditions, as Bernanke correctly claimed given sterile reserves, the central bank's asset acquisitions would augment wealth and consumption by preventing households from anticipating that the new tax cut would imply a heightened prospect of more burdensome future taxes. Those perceptions otherwise would embody a more probable risk of government default and enlarged incentives to invest abroad, which would induce bond vigilantes to elevate further the term premiums on real interest rates. Higher real rates would erode the growth of potential output. But with interest-bearing reserves, this appendix will cast doubt on Bernanke's contention that with Ricardian actors, security purchases by the central bank would forestall those developments and increase the public's wealth and consumption.

I learned the hard way that the human brain simply is incapable of keeping straight all the various cases with the different combinations. So I was forced to construct Table 10.A1.

Trekking on a Guided Tour of Varying States of the World and Roles for Government Debt

At last we are ready to begin an orderly excursion through the eight possible cases. In the first case, reserves are sterile and Ricardian equivalence holds but the central bank conducts no large-scale security purchases. With all the new government debt being held only by the true public, both net and net* debt measures also would have risen. (Recall that net debt is gross debt minus debt owned by *all* government agencies like the Social Security trust fund in the United States *as well as* the central bank. Net* debt subtracts only the debt owned by government agencies *other than* the central bank.)

The rational public would have realized that the current increase in all three measures of gross, net, and net* debt ultimately would have to be paid off via an equally sized future hike in taxes. The addition to household wealth caused by the tax cut would have been just offset by the prospect of higher future taxes, leaving household wealth unchanged. Rational households voluntarily would have been induced to have saved just the amount of that ultimate tax increase—equal in size to the current tax cut—by having reduced their consumption from its level otherwise. Completely rational consumers, whom Ricardo himself doubted existed, willingly would have used the proceeds of their higher saving to have fully financed their purchases of all the newly issued government securities.

The increment to current government borrowing and to all the debt concepts in this way would have tended to depress consumption by an amount comparable to the effect of a hypothetical same-sized boost in taxes. The full offset to the simulative effect of the current tax cut would imply that on balance consumption would have remained unchanged. That constancy in this case also would have occurred if no net change in taxes had occurred at all. The increases in the two measures of net debt would have equaled the rise in gross debt, also correctly signaling the stability in household spending.

Obviously, Ricardian equivalence means that the economy would have reached a point way above the aforementioned debt threshold because all agents already would have become concerned about the burden of future taxes and the probability of default. The prospect of enlarged taxes may have raised the odds on eventual government default, in which case bond vigilantes may have boosted real interest rates as the perceived term premium has risen.

Now consider the second case that seems consistent with Bernanke's conclusions. A borrowing-financed tax cut again is combined with sterile reserves and Ricardian equivalence but now with comparably sized central bank purchases of government securities. Net debt held by the true nongovernmental public, which excludes the holdings of *all* government agencies, would not have changed despite the enlarged gross debt. But net* debt, which instead *includes* the new ownership by the central bank, would have risen along with gross debt.

The central bank would have planned on having all the new interest and principal payments simply take a round trip, since all new Fed revenue (apart from capital gains or losses) would have been returned automatically to the Treasury. So now, even in the presence of Ricardian equivalence, the public no longer would have expected higher future taxes, and perceived wealth would have increased with the permanent current tax cut. The public would have had more cash in exchange for the previous interest-bearing asset, and consumption would have risen in response to the current tax cut. In this second case with Ricardian equivalence, the central bank's large-scale asset purchases would have mattered by boosting consumption.

Moreover, unlike the first case, overall consumption would have gone up despite the increase only in gross and net* debt, as the cut in taxes would not have augmented the now relevant measure of net debt. In this second case the stability of the true public's holdings of net debt would have correctly signaled the higher consumption, while enlarged gross and net*debt measures would have given misleading signals. Household spending would have gone up even though all those rational households already would have been situated way beyond the threshold where only a few of them have begun to take account of possible future tax hikes in their consumption decisions. Still, the central bank's QE has forestalled any higher future taxes.

But Ricardo himself doubted whether the government's debt actually would ever have to be paid off, which seems justified, at least at low ratios of net debt to GDP. Such an attitude severely questions the correctness of Ricardian equivalence. If the extreme third case where everyone shared this skeptical view were true, any implications of the present tax cut financed by government borrowing for future taxes would have been completely ignored, so Ricardian equivalence wouldn't have applied. The current tax cut financed by government borrowing as always would have induced a rise in gross debt, but in the third case no central bank purchases occur. So with no deduction for any new bond holdings by any government agencies, the two net debt measures also would have climbed. That universal debt increase implies that they all would have sent a misleading signal about the rise in consumption. Also, the unaltered perception of future taxes would imply that the public's expectation of the eventual day of reckoning where the threshold debt ratio would be breached would not have been advanced. Of course, the mounting levels of all three debt measures owing to the financing of the tax cut would mean that in fact the time of the start of heightened concern about an eventual tax hike or government default would have been brought nearer. At that advanced time, those concerns would start to engender a rising term premium that would show through in the real market bond rate.

As a fourth scenario let's look at the case with neither reserve remuneration nor Ricardian equivalence but with central bank security purchases. The central bank would have bought all the added debt, so net* debt would have been augmented along with the increase in gross debt, but net debt held by the true public would have remained the same. The constancy of this net debt measure would have correctly signaled the elevation in consumption, which would have picked up as in the third case. Because the public would ignore any implications of higher future taxes for perceptions of its wealth, the central bank's actions whether or not to buy debt wouldn't have mattered to the enlarged consumption in this case where Ricardian equivalence didn't apply. Higher overall consumption still would have emerged from the current tax cut that would have augmented gross and net* debt this time, just as in the second case.

Absent any cognizance by agents of a rise in future taxes that would heighten the chance of a government default, the perception of the eventual day of reckoning when the threshold debt ratio would be breached again would have remained unaffected. But in contrast to the previous case, importantly in this fourth case, the stability of net debt, despite the fact that the tax cut would have raised gross and net* debt, correctly would have implied that the central bank's purchases in fact would have prevented the prospect of eventual government default from being advanced in time despite the current tax cut.

Bernanke himself seemed to suggest that his 2003 speech in Japan had held up well in the interim when he concluded his presentation a decade later at Jackson Hole by referring to it:

> Early in my tenure as a member of the Board of Governors, I gave a speech that considered options for monetary policy when the short-term policy interest rate is close to its effective lower bound. I was reacting to common assertions at the time that monetary policymakers would be "out of ammunition" as the federal funds rate came closer to zero. I argued that, to the contrary, policy could still be effective near the lower bound. Now, with several years of experience with nontraditional policies both in the United States and in other advanced economies, we know more about how such policies work. It seems clear, based on this experience, that such policies can be effective, and that, in their absence, the 2007–2009 recession would have been deeper and the current recovery would have been slower than has actually occurred.[3]

But in fact the Fed's prompt exercise of the authority to pay interest on bank reserves in October 2008 had altered the appropriate analysis. After all, since then the banks have earned an administered interest return of 25 basis points on the extra excess reserves created by any Fed incremental purchases of securities.[4] And when the Fed eventually firms, it surely will keep that administered rate aligned with its rising funds rate target. That outcome is particularly likely because that approach represents the only reliable way for the actual funds rate to move up in the face of still massive amounts of surplus reserves. So let's redo our above analysis of Ricardian equivalence and central bank large-scale security purchases in light of this new reality.

As a fifth scenario, consider the case of a borrowing-financed tax cut with interest-bearing excess reserves and Ricardian equivalence but without central bank purchases of Treasury securities. The prior analysis in the first case still holds. Gross government debt of course would be pushed up by the new federal borrowing. And without central bank involvement, both net debt and net* debt also would have risen because all the new government debt would have been acquired only by the true public sector. Despite lower taxes, no change would have occurred in that sector's perceived wealth, since the rational public would have realized that the current bulge in all the debt measures ultimately would have to be paid off through an equal-sized hike in taxes. The rise in expected future taxes to pay interest and principal on the new government borrowing would have induced a fall in consumption, other things equal, that would have been comparable to the effect of a hypothetical same-sized current boost in taxes. So on balance the simulative effect on household spending of the actual current tax cut would have been fully offset, and consumption at the end of the day would have been unaffected. Again, it would be as if no overall decline in taxes had occurred at all. The higher levels of all three debt measures would have provided a valid identical indication of the unaltered consumption.

Now consider the sixth case of a borrowing-financed tax cut with the following three states of the world: interest-being excess reserves, Ricardian equivalence, and comparable central bank purchases in the secondary bond market. In case six, central bank purchases again have yielded higher gross and net* debt, while having left net debt unchanged. Let's keep in mind the observed fact that levels of currency in the hands of the public, vault cash, and all deposits have stayed completely unaffected by the Fed's large-scale operations, while the volume of excess reserves would have risen commensurately. Thus, we may as well assume for simplicity but without loss of generality that the Fed has dealt only with banks that exchange interest-bearing Treasury bonds for excess reserves. And after interest on reserves in the United States, their interest return would always closely follow the Fed's intended funds rate. According to the expectations theory of the term structure, in this case the future interest payments on the bonds (apart from a term premium) would equal the weighted average of the expected succession of interest payments on the new excess reserves. So once the Fed started paying interest on bank reserves, the expected return that banks would receive over time on their extra excess reserves (apart from the term premium) would exactly counterbalance their expected loss resulting from the interest payments on the Fed's newly acquired bonds. Private wealth simply would have remained the same.

It follows that, even with the central bank's purchases of government debt, in case six the public still would have expected a hike in future tax liabilities as time passes, as in the fifth case just examined. Similarity, any boost to consumption on balance is again prevented. But the outcome in the sixth case starkly contrasts with that of the second case in the pre-October 2008 world when central bank purchases would have lifted consumption. The same rise in net* debt, unlike the flat net debt, now has correctly signaled that consumption wouldn't have risen despite the tax cut. Notice that even with Ricardian equivalence, Fed purchases in the sixth case wouldn't have stopped the ratios of gross- and net* debt-to-income from moving further above the threshold with the greater odds of a tax hike or governmental default, unlike the situation before interest on excess reserves.

In the pre-October 2008 state of affairs of the earlier first case without central bank purchases but with Ricardian equivalence, the tax cut implied lower future tax revenue and a resultant boost to taxes that would have retarded current consumption. But in the second case the central bank rather than the banks had received a similar stream of added interest income on holdings of Treasuries, abstracting from the term premium. In that second case, the Fed actually would have returned automatically to the Treasury its higher incremental interest payments, so taxes wouldn't have to rise. In contrast, in the present sixth case the expected Fed remuneration to the Treasury no longer would have been boosted by the Fed's security acquisitions because of its implied payments of interest on excess reserves. That's the reason for the conclusion in this case that, other things equal, the expected stream of future taxes wouldn't have been lowered by the central bank's asset purchases at all. In other words, the future expected payments on excess reserves would just have equaled the public's reduced interest income on its relinquished bonds. Now interest on excess reserves has prevented an augmentation of the Fed's remittances despite the central bank purchases.

With the sixth case's Ricardian equivalence and interest on excess reserves, the central bank's decision whether or not to engage in large-scale asset purchases wouldn't have mattered to consumption, which would have been unchanged in any event. Moreover, it is now the rise in net* debt but not the constancy of net debt that would have provided a reliable signal. And like the fifth case without purchases by the central bank, consumption with them now wouldn't have risen in the presence of the tax cut but stability in net debt. Also, unlike the pre-October 2008 situation in the second case, large-scale central bank purchases of government securities now no longer would have kept the bond vigilantes from reacting to more probable tax increases or prospective government default by elevating real bond rates further. The reason is that large-scale asset acquisitions by the central bank no longer would have reduced the public's expected future tax burden or the associated risk of default.

Next consider the seventh case with interest on excess reserves but without either Ricardian equivalence or central bank security purchases. The current tax cut financed by government borrowing as always would have produced a rise in gross debt, but in the seventh case, as in the third, the central bank refrains from quantitative easing. So again no government agencies take on any new debt to deduct, and the two net debt measures also would have increased. The public again would have ignored any implication of the current deficit-financed tax cut for higher future taxes, although in fact there may have been some such effect. In response they would have lifted their consumption. A current deficit-financed tax cut also had generated a rise in gross debt and in both net debt measures in the case-three world with sterile reserves but without forward-looking households. As in that case, all three enlarged debt measures rather misleadingly would accompany the higher consumption in this instance as well.

The expected and actual breaching of the threshold debt-to-income ratio is identical to that third case as well. Absent the recognition of a more probable rise in future taxes that would enhance the chance of a government default, the public would have ignored its reduced wealth. Also, its expectation of the day of reckoning when the threshold debt ratio would be breached is no closer than before. By contrast, of course, the more rapidly mounting levels of all three debt measures caused by the current tax cut actually would have advanced the time when economic agents start to worry about a potential default and begin to require a higher real bond rate.

Finally, we have arrived on our trek to the eighth case with interest on excess reserves and central bank security purchases but without Ricardian equivalence. Along with the increase in gross debt, the central bank's new assets would have bolstered net* debt, though net debt held by the true public would have recorded no change. Once again, as in the seventh case, naïve, backward-looking households would have consumed more out of the current tax cut, again implying that the signal having come from the rise in gross and net* debt still is misleading.

As noted in the previous seventh case, backward-looking households would have ignored completely any hike in future taxes. But unlike the seventh case, by happenstance they now in one sense would have been correct to have ignored the central bank's purchases, since in reality the purchases, unlike the forth case, would have implied no lessening whatsoever of the need for higher future taxes. Thus, also unlike the fourth case, naïve bond vigilantes in that sense inadvertently would have correctly presumed that the chance of a future hike in taxes or heightened risk of ultimate default would not have been reduced by large-scale purchases. But the naïve vigilantes are wrong in another sense, because in fact central bank purchases no longer would have kept the expected future tax burden or the risk of default from rising. This conclusion holds even though net debt in the hands of the true public is unchanged in this case. Thus, an important consequence of this eighth case is that the central bank's purchases, unlike cases two and four but like case six, would not have prevented an actual advance of the eventual day of reckoning where the threshold debt ratio would be breached.

Comparing cases seven and eight in one sense is similar to a comparison of cases five and six that also assumed interest on excess reserves but instead posited the Ricardian equivalence that would have kept consumption unchanged. In all four cases, the central bank's decision whether or not to buy long-term government debt also wouldn't have affected consumption. A difference from the earlier comparison is that in cases seven and eight the current tax cut elevates consumption without Ricardian equivalence regardless of the central bank's strategy.

In sum, gross and net* debt always would have moved in concert for all the combinations of interest on excess reserves, Ricardian equivalence, and central bank purchases. In all eight cases, no distinction between gross and net* debt affects the signal of the behavior of consumption, which sometimes is correct and sometimes not. To make sense of the signal, the analysis suggests three general inferences. First, absent forward-looking households to impart Ricardian equivalence to household decisions, as in cases three, four, seven and eight, the behavior of none of gross, net, nor net* Treasury debt matters one bit to consumption. But second, switching the assumption to Ricardian equivalence but without central bank purchases, assuming either sterile or remunerative excess reserves, as in the first and fifth cases, still implies that the rise in both net debt and net* debt correctly signals the unchanged consumption. Third, let's finally consider the crucial factor of whether excess reserves are sterile or not. Assuming Ricardian equivalence and central bank purchases, while positing sterile excess reserves, as in the second case, means that it is the stability of net debt rather the increase of net* debt that provides the accurate signal of the boost to consumption. Importantly, however, again assuming Ricardian equivalence and central bank purchases but instead converting to the assumption of interest-bearing excess reserves, as in case six, causes a radical transformation. Now it is the rise in net*debt not the stability in net debt that offers the correct signal of unaltered consumption. Given the reality of interest on reserves under the Fed's authority in the TARP package in 2008 as well as the likely emergence of Ricardian equivalence, this analytical conclusion vindicates the CBO's otherwise strange (and unstated) inclusion of the Fed's ownership of government securities in its only measure of debt "held by the public" in February 2013.[5]

In terms of practice as opposed to theory, I would argue strongly that Ricardian equivalence even in part evidently has yet to take hold in the real-world United States. Investors still consider Treasury debt to be the safest asset in the world. That fact implies that federal debt to date can be ignored in assessing the outlook. However, Chapter 10 showed that international evidence suggested that above some threshold, different for each country, further increases in the ratio of debt to GDP increasingly would retard potential economic growth. That chapter argued that the reason is that Ricardian equivalence at some point will start to come into its own.

The above discussion of government debt indicates that paying interest on excess reserves was truly consequential. As a result of such payments, the Fed's later augmentation of QE3 in December 2012 also augmented the false optimism created in September. The resulting Fed purchases of Treasuries have appreciably reduced net debt held by the true public, especially relative to national income. But the Fed's massive acquisitions of Treasury debt have not prevented the ultimately more relevant measure of net* debt, which includes Fed holdings, from maintaining its previous steep uptrend. We saw the mounting problem in case eight with backward-looking taxpayers in the absence of Ricardian equivalence.

The problem would become more acute after Ricardian equivalence sets in, as has already happened in the sixth case. It captured the extreme situation when everyone, having reacted to the worsening fiscal situation by turning rational and forward-looking, would worry obsessively about a potential government default. Then Fed retention or expansion of its unorthodox policy strategy similarly would provide no solace, as the growing problem would be correctly signaled by the continued rapid ascent of net* debt, by then the relevant measure. QE couldn't keep the real interest rate from moving up ever more sharply. Today's case eight threatens at some stage to transmogrify into the far worse case six. Our nation has moved beyond the point at which actions by the well-intentioned Fed can substitute for a significant turn to much more responsible fiscal decisions by the less well-intentioned elected politicians.[6]

Now let's move from macroeconomics to microeconomics in Chapter 11. We'll see how recent legislation has affected the Fed's supervision and regulation. But first we'll compare the Aldridge Report issued *before* the Fed's creation with the report of the Financial Crisis Inquiry Commission that wasn't finished until *after* the Dodd-Frank bill.

CHAPTER 11

Strengthening Financial Regulations

In the spring of 2009 I received a prescient message from Philip Wellons, who had recently retired from Harvard Law School, where he had been deputy director at the Program on International Financial Systems. He correctly saw that new legislation would be required to facilitate an orderly resolution of insolvent but interconnected financial firms other than commercial banks:

> On financial regulation: we need to improve the regulatory structure. I would like to see a comprehensive approach across financial markets, including insurance. We can't simply go back to reliance on capital adequacy regulation. Too many of us can't gauge risk well—Basel II was a complex mess built on rating agencies. But I don't see shifting to general principles as the alternative—they only work with homogeneous populations (think Bank of England and London 40 years ago), and world finance is diverse. I don't see us going back to the 1980s' idea of segregating (and thoroughly regulating) the deposit takers, while freeing all other financial activities. Now non-deposit takers, and relations among all financial entities, are too large and complex. I end up thinking we need to address the "too big" part of "too big to fail." Go after the big guys with scalpels and cleavers. Insure deposits and some other liabilities, but let the weak fail.
>
> People who accept the need for deposit insurance and special regulation and supervision for banks have a conceptual disconnect now. They said in the past that we treat deposit-taking banks as special because politics will force the government to bail the banks out to forestall runs. Now it looks as though the collapse of certain non-banks could also bring the financial system to its knees. It was the complexity of Lehman's counterparty relationships that scared people, raising the worries about systemic effects . . . The threat last fall was not the same as a run on banks because last fall no one knew what each contract gave counterparties in a default. The fear is that the consequences would be at least as devastating as a bank run.
>
> The game changed when U.S. government bailed out non-banks. Now that we all know politicians will step in, financial regulators better anticipate and try to reduce the potential exposure over non-banks, as regulators now do with deposit takers . . . The genie is out of the bottle. S/he ran off with the cow as it left the barn.[1]

Comparing the Report Creating the Fed with the Report on the Financial Crisis

This chapter opens by comparing the final report of the National Monetary Commission published in early 1912 with the report of the Financial Crisis Inquiry Commission published in early 2011.[2] As summarized in the introductory chapter, the first commission was a bipartisan study group formed in response to the panic of 1907. It was created by the Aldrich-Vreeland Act of 1908, named for Senator Nelson W. Aldrich (Republican, Rhode Island) and Representative Edward Vreeland (Republican, New York). In the spring of 2008 Aldrich led a team of experts on a fact-finding tour of major European capitals. The National Monetary Commission thoroughly and objectively investigated the US and foreign history of commercial and central banking, financial crises, and banking panics. The commission hired a large staff of economists and published a shelf-full of background studies in 1910 and 1911.

But in Aldrich's mind the results weren't coalescing into a coherent set of proposals. So he sponsored intense deliberations in a secret ten-day conference of experts on Jekyll Island off coastal Georgia in November 1910. For the ostensible "duck hunt,"

> Aldrich invited men he knew and trusted, or at least men of influence who he felt could work together. They included Abram Piatt Andrew, assistant secretary of the Treasury; Henry P. Davison, a business partner of Morgan's; Charles D. Norton, president of the First National Bank of New York; Benjamin Strong, another Morgan friend and the head of Bankers Trust; Frank A. Vanderlip, president of the National City Bank; and Paul M. Warburg, a partner in Kuhn, Loeb & Co. and a German citizen.[3]

Only after the National Monetary Commission assimilated the results of those deliberations could the so-called Aldrich Plan be designed and released as its final report containing the specifics of a bill to create a central bank. "Announced in January of 1912 after four years of formulation, the Aldrich plan was the end product of a monetary inquiry to end all monetary inquiries."[4]

But the Aldrich Plan wouldn't end up being legislated because the election that fall gave Democrats a majority in the Senate to go along with an existing one in the House. That party also took over the White House. The newly elected president, Woodrow Wilson, consulted extensively during 1913 with Representative Carter Glass and Senator Robert Owen Jr., among many others. Considerable further reflection and debate, including full-scale Senate hearings, also transpired. President Wilson finally got the Christmas present he had sought. On December 23, 1913, he signed into law the official act creating the Federal Reserve.[5]

The report of the Financial Crisis Inquiry Commission (FCIC) stands in notable contrast. The Congress created the commission in May 2009, mandating its report by December 2010. California Democrat Phil Angelides, who was appointed by Speaker of the House Nancy Pelosi (Democrat, California), directed the commission. It did not want for status, resources, time, and effort, being "a prestigious bipartisan committee of 10 experts with subpoena power who deliberated for 18 months, interviewed some 700 witnesses, and held 19 days of public hearings."[6] The report's conclusions are worth quoting in two parts, with my ordering (emphasis in the original):

> [T]o pin this crisis on mortal flaws like greed and hubris would be simplistic. It was the failure to account for human weakness that is relevant to this crisis. (pp. xxvi and xxvii.)
>
> **We conclude dramatic failures of corporate governance and risk management at many systematically important financial institutions were a key cause of this crisis.** (p. xviii.)
>
> **We conclude widespread failures in regulation and supervision proved devastating to the stability of the nation's financial markets.** (p. xviii.)

The report thus attacked the system's failure to "account for human weaknesses" (as though market arrangements upon entering the new millennium suddenly became more indulging than constraining of human frailty). Central among such weaknesses was Gordon Gekko-type "greed" (as though that feature of behavior was not more of a given of human nature than a consequence of financial market competition).[7] Also central was the "hubris" of Wall Street financial institutions (as though their behavior was not more a symptom than a cause of the fundamental problem). The conclusions further fault lax supervision and regulation (as though such oversight, though well intentioned, is not often more harmful than helpful reflecting suboptimal bureaucratic incentives).

The report's conclusions continued by turning to housing policy, including the roles of Fannie Mae and Freddie Mac, government-sponsored enterprises (GSEs) (emphasis in the original):

> We conclude that these two entities contributed to the crisis, but were not a primary cause. (p. xxvi.)
>
> We also studied at length how the Department of Housing and Urban Development's (HUD's) affordable housing goals for the GSEs affected their investments in risky mortgages. Based on the evidence and interviews with dozens of individuals involved with this subject area, we determined these goals only contributed marginally to Fannie's and Freddie's participation in these mortgages. (pp. xxvi and xxvii.)
>
> **We conclude collapsing mortgage-lending standards and the mortgage securitization pipeline lit and spread the flame of contagion and crisis.** (p. xxiii.)

The report thus got the causation exactly backwards (as though the problem was a kind of perverse Say's law—supply creates its own demand—in which malfunctioning mortgage supply chains induced the demand for defective housing finance more than the opposite). The report minimized the role of government-mandated affordable housing requirements in creating the demand, especially by Fannie Mae and Freddie Mac, for securitized mortgage products based on subprime-type loans. It was this demand that fostered the severe relaxation of lending standards in the first place, which in turn augmented the granting of such credit and inflated the bubble. The report in effect contained an apologia for the previous governmental housing policy (as though the ever enlarging mandates for low-income accommodation did not more distort than foster rational outcomes.)[8] Fortunately, Peter J. Wallison, Arthur F. Burns Fellow in Financial Policy Studies at the American Enterprise Institute, was a member of the FCIC. He filed a dissent that correctly identified the actual forces at work.[9] Arguably even worse than hewing to an excessively rigid ideological line that misidentified the sources of the crisis and minimized the role of the housing mandates, the FCIC report was published in January 2011, six months *after* the Dodd-Frank Act became law.

Evaluating the Dodd-Frank Act

In his recent book on the financial meltdown, Alan Blinder astutely saw Treasury impatience, which first surfaced in its issuing a recommended framework for regulatory reform on March 26, 2009, as what lay behind that peculiar order:

> [T]he U.S. Treasury could not wait for the FCIC report. Just one month *after* the FCIC was authorized by law, long before the commission could do anything substantive, the Treasury was out with its blueprint for financial reform—a document that kicked the policy debate into high gear.
>
> The order seemed fundamentally illogical. The cure was being prescribed long before the diagnosis was in. But the Treasury believed it had a good idea about what had caused the debacle. More important, Treasury Secretary Geithner, Federal Reserve Chairman Bernanke, and others perceived an urgent need to get at least some aspects of financial reform in place promptly—especially new resolution authority. What would happen, they worried, if we faced another Lehman-like situation with no more legal authority than the Fed and the Treasury had in September 2008? With the scars sill fresh, neither Geithner nor Bernanke wanted to find out.[10]

The Treasury's follow-up 88-page white paper set the boundaries for deliberation of financial reform.[11] Ironically, however, the Treasury did not in fact have, in Blinder's words, "a good idea about what had caused the debacle." It failed to recognize that because the real cause was governmental housing policy that boosted Fannie and Freddie's demand for squirrely subprime and similar mortgages and induced a collapse of standards for home loans, the solution logically had to address the fundamental problems of housing finance as related to the ultimate fate of the government sponsored enterprises. Instead, the Treasury's report minimized these most crucial issues, and the eventual legislation did not solve the basic housing problem at all.[12]

Blinder well describes how the ensuing process of evaluating, refining, lobbying, and compromising transformed the Treasury's report into the final law. On July 21, 2010, President Obama signed the "Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010," named after the chairmen of the Senate Banking Committee and the House Financial Services Committee, Chris Dodd and Barney Frank. It was the most far-reaching financial reform since the Great Depression. Its main planks: (1) created in the FDIC an "Orderly Liquidation Authority" for large nonbanks outside of bankruptcy to forestall the bailout of a "too-big-to-fail" institution after the fact of its insolvency; (2) required large banking or systemically important nonbanking institutions to provide "living wills" with a road map for how each can be quickly liquidated in bankruptcy proceedings; (3) formed a "systemic risk" panel of regulators, headed by the Treasury, that would address threats to the financial system as a whole not only by setting capital and liquidity standards for big banks but also by recommending an orderly liquidation of any large, very troubled financial firm before the fact of its bankruptcy, which otherwise could infect other creditors, perhaps starting a cascade of failures; (4) established a consumer protection bureau within the Federal Reserve but with independent powers to prohibit, among other things, unfair mortgage and credit-card products and other predatory lending; (5) routed standard "derivatives"—a security whose value depends on a specified event or an external price of something else, such as a set of mortgages, a commodity, or a currency—through supervised clearinghouses and required trading them on safer and more transparent organized exchanges; (6) required banks to spin off their riskiest trading of non-traditional derivative "swaps" to separately capitalized affiliates; (7) set new fee ceilings on the public's debit card transactions, to prevent banks from price gouging; (8) implemented the Volcker rule, by outlawing most speculative "proprietary" trading by banks using their own capital, as opposed to employing the funds of their customers, as well as significant ownership of hedge and private-equity funds; (9) made permanent a $250 thousand limit on deposit insurance after the prevailing $100 thousand cap had been suspended during the worst of the financial disruption; (10) eliminated the Office of Thrift Supervision by transferring oversight of thrift institutions to the Comptroller of the Currency, and (11) imposed a "risk retention" rule on issuers of asset-backed securities to retain at least 5 percent of the credit risk except for "qualified residential mortgages."

At Jackson Hole in August 2012 Andrew G. Haldane and Vasileios Madouros wrote:

> Contrast the legislative responses in the US to the two largest financial crises of the past century—the Great Depression and the Great Recession. The single most important legislative response to the Great Depression was the Glass-Steagall Act of 1933. Indeed, this may have been the single most influential piece of financial legislation of the 20th century. Yet it ran to a mere 37 pages.
>
> The legislative response to this time's crisis, culminating in the Dodd-Frank Act of 2010, could not have been more different. On its own, the Act runs to 848 pages—more than 20 Glass-Steagalls. That is just the starting point. For implementation, Dodd-Frank requires an additional almost 400 pieces of detailed rule-making by a variety of US regulatory agencies. . . .
>
> [O]nce completed Dodd-Frank could comprise 30,000 pages of rulemaking. That is roughly a thousand times larger than its closest legislative cousin, Glass-Steagall. Dodd-Frank makes Glass-Steagall look like throat clearing.[13]

On the day the bill passed the conference committee, Senator Dodd remarked that "no one will know until this is actually in place how it works."[14] After its passage, the legislation received decidedly mixed reviews. Chairman Bernanke was favorably disposed:

> The financial reform legislation approved by the Congress today represents a welcome and far-reaching step toward preventing a replay of the recent financial crisis. It strengthens the consolidated supervision of systemically important financial institutions, gives the government an important additional tool to safely wind down failing financial firms, creates an interagency council to detect and deter emerging threats to the financial system, and enhances the transparency of the Federal Reserve while preserving the political independence that is crucial to monetary policymaking.[15]

Sheila Bair, the experienced former chair of the Federal Deposit Insurance Corporation, also had a favorable overall take on the legislation in her later book.[16] On the other side, a representative of the legal interests of the big banks was less complementary: "Ernie Patrikis, a partner in the banking-advisory practice at White & Case LLP and a former general counsel for the Federal Reserve Bank of New York, said, 'I view the legislation as starting out being horrendous. Now it's merely very horrible.' "[17]

Law professor David Skeel offered a more balanced appraisal. He lauded the consumer protection bureau as potentially offsetting some of the power of the big banks.[18] Skeel added, “If bank regulators monitor the new clearinghouses effectively and if they implement the new bank capital requirements vigorously, the financial system will be much less risky and crisis prone than it was before the financial crisis.” But he also contended that:

> [T]he new approach has very pronounced dark sides. The largest financial institutions will be able to borrow money more cheaply than their smaller competitors . . . The government-bank partnership also depends heavily on regulatory competence. But . . . regulatory competence is a serious issue.[19]

As noted, the law had charged the regulatory agencies with writing the detailed regulations to realize the intents of the act. But from a public policy perspective, Chairman Bernanke’s comment before the House Banking Committee in early February 2011 was rather bizarre. He reported that the number of Fed staff members that were drafting regulations called for by the Dodd-Frank bill amounted to more than 300! Bernanke explained to Representative Shelly Moore Capito (Republican, West Virginia) that he wanted to do it “right” but also “quickly!” A year later, the Fed still had “250 separate rule-writing projects underway.”[20]

The implementation of the Dodd-Frank bill obviously was imposing intrusive and expensive financial regulations. Lobbyists have had a field day! William Cohen reported this:

> In June [2011], Jamie Dimon, chief executive officer of JPMorgan Chase & Co., expressed his concerns to Federal Reserve Chairman Ben S. Bernanke: “I have this great fear that someone’s going to write a book in 10 or 20 years, and the book is going to talk about all the things that we did in the middle of a crisis that actually slowed down recovery,” he said.[21]

Dimon expressed is frustration about the overall social cost of the coming rules to Bernanke in September 2011. “Has anyone bothered to study the cumulative effect of all these things?”[22] Dimon later asked whether Bernanke “has a fear like I do” that overzealous regulation “will be the reason it took so long that our banks, our credit, our businesses and most importantly job creation to start going again.”[23]

At Chairman Bernanke’s Monetary Policy Testimony before the House Financial Services Committee on February 29, 2012, Representative Randy Neugebauer (Republican, Texas) said that the committee had estimated that for the private sector to comply with only the first 140 regulations out of the 400 specified by the Dodd-Frank Act would require 22 million person-hours.[24] That seemed to him like an excessive burden. Chairman Bernanke replied that the Fed was trying to “minimize those costs” but that the new regulations were trying to prevent the recurrence of the 2008 financial disaster, which itself was incredibly expensive.

With the prolonged implementation delays, Obama finally appeared to have reached the end of his tether.

> On Monday, President Obama summoned top financial regulators to the White house and told them to get busy finishing implementation of the 2010 Dodd-Frank financial reform law. Mr. Obama’s impatience is understandable. Dodd-Frank is the centerpiece

of his efforts to prevent another financial meltdown like the one in 2008. Yet as of July 15, regulators have finalized only 158 of 398 rules called for in the legislation . . . Regulators have missed 172 of 279 rule-making deadlines.[25]

While the Dodd-Frank Act represented the Democratic Party's attempt to address the sources of the financial meltdown, unfortunately much of the bill erroneously assumed that the prime mover originated in inadequate restraints on the excesses both of the greed induced by financial market competition and the risky behavior of large financial institutions. Moreover, the Obama administration articulated this position. And, as just noted, the narrative of the FCIC report also would be based in part on that faulty premise.

In stark contrast, the more recent opinions of Michael Bloomberg, Paul Volcker, David Brooks, and Edward Pinto followed up on Peter Wallison's dissent to the FCIC report:

> Mayor Michael Bloomberg said this morning that if there is anyone to blame for the mortgage crisis that led the collapse of the financial industry, it's not the "big banks," but Congress.
>
> Mayor Bloomberg was asked what he thought of the Occupy Wall Street protesters.
>
> "I hear your complaints," Bloomberg said. "Some of them are totally unfounded. It was not the banks that created the mortgage crisis. It was, plain and simple, Congress who forced everybody to go and give mortgages to people who were on the cusp."[26]

Paul Volcker observed,

> One very large part of American capital markets—indeed the dominant part—is the market for residential mortgages. The financial breakdown was directly related to, and abetted by, lax, government-tolerated underwriting standards for those mortgages. The origination and huge volume of so-called "sub-prime" mortgages, typically securitized in large CMOs and CDOs (collateralized mortgage and debt obligations), supported the unsustainable rise in prices of homes and the housing bubble. So far the calls for large-scale structural change have not resulted in legislation, but the need for reform and the direction of change is clear.[27]

And David Brooks in reviewing *Reckless Endangerment* wrote that:

> [T]he Fannie Mae scandal is the most important political scandal since Watergate. It helped sink the American economy. It has cost taxpayers about $153 billion, so far. It indicts patterns of behavior that are considered normal and respectable in Washington . . .
>
> Only two of the characters in this tale come off as egregiously immoral. [James] Johnson made $100 million while supposedly helping the poor. Representative Barney Frank, whose partner at the time worked for Fannie, was arrogantly dismissive when anybody raised doubts about the stability of the whole arrangement. Most of the people were simply doing what reputable figures do in service to a supposedly good cause. Johnson roped in some of the most respected establishment names: Bill Daley, Tom Donilon, Joseph Stiglitz, Dianne Feinstein, Kit Bond, Franklin Raines, Larry Summers, Robert Zoellick, Ken Starr, and so on. Of course, it all came undone. Underneath, Fannie was a cancer that helped spread risky behavior and low standards across the housing industry. We all know what happened next.[28]

What set Brooks off about Frank? Consider what Elizabeth MacDonald has written:

> It was Rep. Frank who famously said in 2003: "I do not want the same kind of focus on safety and soundness [in the regulation of Fannie Mae and Freddie Mac] that we have in the Office of the Comptroller of the Currency and the Office of Thrift Supervision. I want to roll the dice a little bit more in this situation towards subsidized housing."[29]

Edward Pinto, former chief credit officer of Fannie Mae and then Resident Fellow at the American Enterprise Institute, well summed it up: "Government housing policies and the toxic mortgages they spawned were the sine qua non of the financial crisis."[30] He later elaborated,

> [L]enders, following Fannie and Freddie's aggressive and convincing loosening of their "narrow" underwriting standards, responded by loosening their formerly conservative standards. This premeditated assault on the prime mortgage led to the largest housing bubble in our history followed by the largest bust. The perpetrators were Fannie, Freddie, community groups, Congress, and HUD.[31]

The United States is the only developed economy with a major government role in housing. Today nine out of ten mortgages are guaranteed by federal government agencies, including not only Fannie and Freddie but also the Federal Housing Administration. It insures the lenders against losses on one in five residential homes—with down payments as low as 3-1/2 percent. In late-September 2013 the agency was forced to draw $1.7 billion from the Treasury.[32]

The only permanent fix is to remove the state completely from housing finance, including eliminating government guarantees and affordable housing requirements, in contrast to the stopgap measures in the Board's white paper to be discussed in Chapter 12.[33] The fees charged by Fannie and Freddie as well as the Federal Housing Administration to insure mortgage loans gradually but inexorably should be raised to prohibitive levels. The process of raising those GSE fees already has begun, so much so that by early September 2013 the interest rate on conforming mortgages briefly exceeded the rate on "jumbo" mortgages larger than the $417,000 limit for agency backing.[34] Another proposed change also should be carried gradually to extremes: That limit for the size of home mortgage loans eligible for backing by Fannie and Freddie should be lowered inexorably to zero.[35] And all the mortgage-backed securities held as assets by the housing agencies should be sold on a fixed schedule, perhaps by establishing an agency like the Resolution Trust Corporation.[36] The Fed similarly should slowly sell all its existing holdings of MBS.[37] Those policies would allow equilibrating forces in the private housing market to bring about a rational allocation of resources in the sector. As the housing market evolves over time, the participants themselves would be able to evaluate the appropriate scope for securitizing home loans, as a government role there would have ended. Similarly, free-market forces should be left alone to determine themselves, unencumbered by misguided governmental pressure, whether the continuation of 30-year fixed-rate mortgages that is subject to refinancing only if rates decline even makes sense. Certainly around the world such contracts are exceedingly rare.

This general approach is the vision pursued by Representative Jeb Hensarling (Republican, Texas), chairman of the House Committee on Financial Services, in a bill introduced on July 11, 2013. Another vision was embodied in comprehensive legislation on June 25, 2013 by Senators Mark Warner (Democrat, Virginia) and Bob Corker (Republican, Tennessee), as refined on March 11, 2014, in legislation authored by Senators Tim Johnson (Democrat, South Dakota) and Mike Crapo (Republican, Idaho). The last two bills would wind down the Federal Housing Finance Agency (the regulator and conservator of Fannie and Freddie) along with Fannie and Freddie themselves, while the third bill, like its predecessor, but unlike the first one, would preserve a back-stop role for federal mortgage guarantees (to be financed by private fees) but only once private lenders have lost a maximum 10-percent amount. This approach gained administration support. On March 27, Representative Maxine Waters (Democrat, California) sponsored legislation with an explicit government guarantee and flexible credit-risk sharing.[38]

In mid-December 2011 the Securities and Exchange Commission (SEC) announced that it was bringing a civil lawsuit against ex-Fannie Mae and Freddie Mac defendants that, if successful in court, would certainly place them among the primary perpetrators of the financial crisis. The case, which had been in preparation for three years, alleged that two former CEOs and four other top executives at the government sponsored enterprises had committed securities fraud. The agency charged them with deceiving investors by underreporting the quantity of risky subprime or Alt-A mortgage securities in their credit guarantee portfolio by a factor of more than 50. For example, as of June 30, 2008, Fannie and Freddie together had disclosed to investors only $14 billion in subprime-like mortgage-related securities when the actual figure exceeded $750 billion. But since the two companies were willing to cooperate in the prosecution, the SEC was not pursuing charges against them.[39] The SEC's evidence about actual substandard mortgages verified a succession of published findings starting three years earlier by Pinto.[40]

In contrast to these attributions of the housing bubble to government housing policies that created the demand from Fannie and Freddie for low-quality mortgages, any root explanation for the emergence of the bubble early in this century in Alan Blinder's book is conspicuous by its absence. Blinder seemed in effect to fall back on the observation that "It just happened." Still, he referred to the opposing case as flimsy: "I mentioned earlier the attempts by some arch-conservatives to lay blame for the financial crisis at the doorsteps of Fannie Mae and Freddie Mac. Though a thin case, it was made often."[41] Exemplifying Blinder's point about frequency, another voice recently affirmed this notorious arch-conservative position:

> [Former chairman of the House Financial Services Committee Barney] Frank dropped several unexpected bombshells in response to questioning by the moderator, CNBC anchor Steve Liesman.
>
> Asked about the government's affordable housing goals compelling Fannie Mae and Freddie Mac before the crisis to devote more than half their portfolios to riskier nonprime mortgages for low-income borrowers, Frank blurted out: "No more goals, no more telling the private sector" how to invest in the housing market. "Barney," Liesman asked, "are you suggesting that the goals of Fannie Mae and Freddie Mac, the concept of promoting homeownership, was something that contributed to the crisis?" "Yes, it

> was, very much so—and Bill Clinton did it, and George Bush did it, everybody did it," Frank said.[42]

Shortly after the *New York Times* selected Blinder's volume as one of the top five nonfiction books of 2013, similar positions found expression in the arch-conservative outlet the *New York Review of Books* in an article by a US District Court Judge Jed S. Rakoff. (Keep his important name in mind as we'll come in Chapter 12 to a crucial ruling of his in 2011.)

> [T]he government, writ large, had a part in creating the conditions that encouraged the approval of dubious mortgages. Even before the start of the housing boom, it was the government, in the form of Congress, that repealed the Glass-Steagall Act, thus allowing certain banks that had previously viewed mortgages as a source of interest income to become instead deeply involved in securitizing pools of mortgages in order to obtain the much greater profits available from trading. It was the government, in the form of both the executive and the legislature, that encouraged deregulation, thus weakening the power and oversight not only of the SEC but also of such diverse banking overseers as the Office of Thrift Supervision and the Office of the Comptroller of the Currency, both in the Treasury Department. It was the government, in the form of the Federal Reserve, that kept interest rates low, in part to encourage mortgages. It was the government, in the form of the executive, that strongly encouraged banks to make loans to individuals with low incomes who might have previously been regarded as too risky to warrant a mortgage.
>
> Thus, in the year 2000, HUD Secretary Andrew Cuomo increased to 50 percent the percentage of low-income mortgages that the government-sponsored entities known as Fannie Mae and Freddie Mac were required to purchase, helping to create the conditions that resulted in over half of all mortgages being subprime at the time the housing market began to collapse in 2007.
>
> It was the government, pretty much across the board, that acquiesced in the ever-greater tendency not to require meaningful documentation as a condition of obtaining a mortgage, often preempting in this regard state regulations designed to assure greater mortgage quality and a borrower's ability to repay. Indeed, in the year 2000, the Office of Thrift Supervision, having just finished a successful campaign to preempt state regulation of thrift underwriting, terminated its own underwriting regulations entirely.
>
> The result of all this was the mortgages that later became known as "liars' loans." They were increasingly risky; but what did the banks care, since they were making their money from the securitizations. And what did the government care, since it was helping to create a boom in the economy and helping voters to realize their dream of owning a home?[43]

To his credit, Greenspan during his chairmanship had warned in speeches and testimony about the dangers that Fannie and Freddie posed to the financial system, but to no avail.[44] To add further irony, Senator Chris Dodd joined Representative Barney Frank among the prominent supporters of the ill-considered housing policies affecting Fannie Mae and Freddie Mac that was the fundamental source of the financial meltdown.

The Treasury, the Dodd-Frank bill, and the FCIC, in contrast to misdiagnosing the basic source of the crisis, as well as underemphasizing the moral hazard that helped foster the bankruptcy of Lehman Brothers, were correct to stress the potential knock-on effects of that sudden event. Indeed, some critics of that analysis incorrectly played down the significance of potential systemic effects of Lehman's bankruptcy.[45]

Still, whether the Dodd-Frank Act's effort to counter systemic risk in advance will actually work as intended is another matter. It empowered the US Financial Stability Oversight Council (FSOC), a panel of regulators headed by the Treasury, to monitor "Systemically Important Financial Institutions" and recommend "heightened prudential supervision" by the Federal Reserve to counter potential systemic risk. In early April 2012 it approved a final rule establishing the criteria identifying which nonbanks may be systemically important:

> Under the rule, regulators will evaluate non-bank financial companies with more than $50 billion in assets if they meet one or more of the following thresholds: a 15-to-1 leverage ratio; $3.5 billion in liabilities on derivatives contracts; $20 billion of loans borrowed and bonds issued; $30 billion in notional credit default swaps outstanding; or a 10 percent ratio of short-term debt to assets.[46]

The FSOC surely will have comprehensive, up-to-date data to accompany the best of intentions, and I sure hope that it will be able to peer into the future with some accuracy, but I must admit the persistence of nagging doubt. Chairman Bernanke has discussed "some ways in which the Federal Reserve, since the crisis, has reoriented itself from being (in its financial regulatory capacity) primarily a supervisor of a specific set of financial institutions toward being an agency with a broader focus on systemic stability as well."[47] But the related track records of even the more limited practice of supervising individual institutions don't always inspire much confidence. Paul Volcker noted, "I can't remember any banks that didn't have a clean auditing statement, sometimes as little as two weeks before they failed."[48] *The Squam Lake Report*, though supporting the establishment of a systemic risk regulator, provided a more extreme recent example. "The Securities and Exchange Commission, Bear Stearns' main regulator, was not up to the task of supervising the firm. The SEC Chairman infamously announced that all was fine with the company just 48 hours before it failed."[49] The Office of Thrift Supervision, AIG's primary supervisor then housed within the Treasury, completely missed the mammoth problems brewing at the London office of the insurance company until the necessity of a bailout became evident in September 2008.[50] And HUD's affordable housing standards didn't pan out too well.

As for the post-crisis attempt to apply several "macroprudential" regulations to big entities in an effort to control systemic risk, a paper at a conference to honor former Vice Chairman Donald Kohn made the arresting claim that "it is easy to produce combinations of regulation that look sensible but when combined have adverse effects on the economy."[51] And several Board staffers noted in their influential paper on monetary policy and housing that "research on macroprudential regulation and its potential macroeconomic impact remains at a very early stage, and it would be premature to conclude that such policies will prove as effective or as well targeted as desired in limiting the business cycle implications of asset price bubbles."[52] Furthermore, Hester Peirce, echoing David Skeel, has raised some profound public-choice-type issues about the Dodd-Frank regime: "[R]ather than giving us a more resilient financial system, Dodd-Frank, once it is fully implemented, will give us a financial system more dependent than ever on Washington regulators, and thus vulnerable to their whims and weaknesses."[53]

In view of all these and other considerations, I think that only the seeds of a far sounder approach were contained in the Volcker rule, because the ideal legal restrictions would be even more radical. In principle the Volcker rule would establish stricter guidelines for commercial banks, because they benefit from insured deposits, the safety net, and detailed supervision and regulation, than for other financial institutions, which would be allowed to be more fully subject to the market forces of profit and loss. Paul Volcker has explained:

> Financial institutions not undertaking commercial banking should be able to continue a full range of trading and investment banking activities, and even could continue links with commercial or industrial firms. When deemed "systemically significant," they will be subject to capital requirements and greater surveillance than in the past. However, for such institutions there should be no presumption of official support—access to the Federal Reserve, to deposit insurance, or otherwise. Presumably, for them, failure will be more likely than in the case of regulated commercial banks protected by the government safety net. Therefore, it is important that a new process for resolving the problems of risk and failure be available and promptly brought into play.[54]

Although Dimon had argued against the ban on proprietary trading under the Volcker rule, the bank's own loans to European companies came back to haunt it. In fact, I thought on August 10, 2011, that Dimon was whistling past the graveyard when he told a CNBC interviewer, "We're not going to cut and run where Europe is concerned."[55] But later he must have changed his mind. At his direction, the firm acted to protect itself against losses on the commercial loans it had extended through 2011 by buying securities to insure against defaults by European, US, and other corporations, thereby establishing a net short position. Then the bank, like most, erroneously came to think that Europe's improved prospects would be sustained into 2012. In the first quarter, the bank loaded up on more-than-offsetting long credit derivatives. The Frenchman Bruno Iksil made such massive trades that he was called the "London Whale."

When the Euro-zone's problems resurfaced in April and May, JPMorgan's huge purchases were proving to have been significantly misguided. But although the cost to JPMorgan was soaring, it was slow to cut its losses by unwinding the positions. Early on, Dimon even famously referred to growing public alarm about potential losses from the bets gone wrong on synthetic derivative securities as "a tempest in a teapot." But later, as the extent of the problem sunk in, Dimon was forced to admit, "The portfolio has proved to be riskier, more volatile and less effective as an economic hedge than we thought."[56] Todd Petzel, Chief Investment Officer at Offit Capital, put the general point succinctly: "[H]edging is an important, but imprecise, market activity. If you are lucky enough to be in London this month for the Olympics, take some extra time and visit the countryside. You will only find a perfect hedge in an English garden."[57]

By March 2013 the loss had cumulated to $6.2 billion. The Senate Permanent Subcommittee on Investigations under Carl Levin (Democrat, Michigan) released on March 14 a damning 300-page report, which Matt Levine thought well described what had developed,[58] and held a riveting hearing with bank and OCC staff the next day:

> [T]he report raises questions about whether it will ever be possible to keep a big bank from committing foolish mistakes as long as the people working for the bank—starting

> with the CEO—are determined to do things their way. The panel makes six serious accusations against JPMorgan, saying it increased risk without notice to regulators, mischaracterized high-risk trading as hedging, hid massive losses, disregarded risk, dodged OCC oversight, and mischaracterized the portfolio.[59]

Sheila Bair was quite critical of the bank's behavior two weeks later in an op-ed column:

> The recent Senate report on the J.P. Morgan Chase "London Whale" trading debacle revealed emails, telephone conversations and other evidence of how Chase managers manipulated their internal risk models to boost the bank's regulatory capital ratios. Risk models are common and certainly not illegal. Nevertheless, their use in bolstering a bank's capital ratios can give the public a false sense of security about the stability of the nation's largest financial institutions.[60]

Later evidence suggested that three traders allegedly had falsified information to hide the extent of the losses on the plummeting market value of the bank's sales of these derivatives. Because the erroneous estimates were used internally as well as externally, the bank's tardy reaction to signs of trouble became somewhat more explicable. To avoid being charged himself, Iksil cooperated with prosecutors. In mid-August 2013 criminal charges were brought against two of his former coworkers.

Unfortunately, the London Whale episode didn't lend support to defenders of the Volcker rule as first written. The trading activity at JPMorgan Chase was related to "portfolio hedging," which actually would have been permissible under the Volcker rule that was embodied in the Dodd-Frank Act. Still, the JPMorgan hedging disaster raised a valid question about the inherent impossibility of drawing a line distinguishing hedging from proprietary trading. I perceive that the same problem arises with market making and customer trading as well. No wonder the specific proposals for implementing the Volcker rule by the financial agencies induced such massive lobbying efforts, ended up adding so much complexity, and induced such prolonged delays. "'It's ridiculous,' said Paul Volcker, the former Federal Reserve chairman for whom the rule is named. He said there is 'no reason why the Volcker rule should take three years' to write."[61] Actually, Volcker was wrong here, as the task is impossible. I'd have gone much further than Volcker.

According to his original idea in the Volcker rule, the prohibition of proprietary trading with a commercial bank's own capital, combined with deposit insurance, the safety net, and detailed supervision and regulation, should apply only to narrow banks because of their direct taxpayer exposure. (Of course, the restrictions of the Volcker rule logically shouldn't apply to Goldman Sachs, which as *de facto* investment bank does not accept retail deposits. Still, having acquired a commercial bank charter during the crisis, it would have been covered *de jure* anyway.[62] And now given that the regulators would judge it to be systemically important in any event, the Volcker rule still would be applicable.) Volcker thought that the orderly resolution of big and interconnected nonbanks would allow them to go belly up if they got in serious trouble. But drawing appropriate lines to distinguish proprietary trading from other activity has proven to be impossible.

I think this problem can be solved only by more rigorous exclusions to simplify narrow banking further by severely delimiting the market making, customer trading, and hedging activity permitted narrow banks. In fact, I'd advocate restoring most of the original Glass-Steagall Act, which would have the desirable side-effect of reducing the size of the largest banks, but doing indirectly in a far superior manner to imposing a direct, but arbitrary, size constraint on the currently permitted structure. True, less financial market liquidity would accompany this re-imposition of the old Glass-Steagall constraints, but so be it. If the world were appropriately designed, that's how it would work. Vladimir Lenin contended, "If you want to make an omelet, you have to be willing to break a few eggs." I'm instead all for unscrambling today's omelet.[63]

Despite being unaware of my reasoned arguments, the five regulatory agencies on December 10, 2013, traveled partway there. They agreed on a revised specification of the Volcker rule that then outlawed broad portfolio hedging so as to try to prevent episodes like the London Whale while still allowing hedges against specific documentable risks.

Before the crisis, mortgage companies, including fly-by-night ones, increasingly had extended loans without adequate down payments, and then bank sellers of structured mortgage-backed securities were able to unload to the unwary buyers all risk of default on the newly created products. The *Washington Post* editorialized about certain features of Dodd-Frank:

> To the bill's authors, a key cause of the financial crisis was that Wall Street packaged and sold securities backed by subprime, "no-doc" and other questionable mortgages. Not having to retain any of the default risk themselves, the banks fobbed off the bonds onto investors and went off in search of more loans, any loans, to package and sell. Dodd-Frank tried to discourage this business model by requiring future mortgage securitizers to put their own capital at risk . . . The legislation's co- author, former Rep. Barney Frank (D-Mass.), said this was his bill's "most important" provision.[64]

"But when the final rule was adopted this week," wrote Floyd Norris more than a year later in the *New York Times*, "that idea was dropped." He continued:

> "The loophole has eaten the rule, and there is no residential mortgage risk retention," said Barney Frank, the former chairman of the House Financial Services Committee and the Frank in Dodd-Frank.[65]

Alan Blinder had explained that the effectiveness of the Dodd-Frank Act was being eviscerated because it contained an exception, which the regulators were turning into a generalized out:

> The 5% requirement does not apply to "qualified residential mortgages" (QRMs)—a term left to regulators to define, but intended to exempt safe, plain-vanilla mortgages with negligible default risk . . .
>
> Just days ago, the regulators issued yet another notice of proposed rulemaking, soliciting comments on (among many other things) two ways to define QRMs. The lighter-touch option would exempt almost 95% of all mortgages from the skin-in-the-game requirement. The "tougher" option would exempt almost 75%. Does anyone doubt which option will be favored by interested commentators? After that, what will be left of the Dodd-Frank requirement?[66]

The *Post*'s editorial also had gone on to decry a related relaxation:

> Two years ago, federal banking regulators proposed to require a 20 percent down payment as one of the criteria of qualified loans. This was consistent with the intent of Dodd-Frank, and with the economic literature, much of which identifies low equity as a reliable predictor of homeowner default. But the requirement was quite inconsistent with the interests of a wide range of lobbies—from real estate agents to low-income-housing advocates—which protested that the rule would unduly limit access to credit and kill the housing recovery. The groups swarmed the regulators; hundreds of members of Congress from both parties wrote in support of them. And so, in the dog days of August . . . the regulators backed down, offering a revised rule that requires no down payment at all.[67]

The false narrative of the meltdown, liberal but bipartisan ideology, misguided housing activists, and excessive policymaker concern about short-run cyclical weakness as opposed to rational resource allocation over time all had combined to help provide a public-spirited cover for the shocking triumph of a lobbying effort by housing-related special interests engaged in "rent-seeking" that was recreating the very fundamental flaws that had spawned the financial crisis in the first place. A story in the *Wall Street Journal* in mid-2014 captured only some aspects of what had happened:

> The original proposal three years ago sparked a backlash housing-industry, affordable-housing, and civil-rights groups, who banded together over shared concerns that a 20% down-payment requirement would end the dream of home-ownership for many Americans.[68]

The Basel II rules on capital adequacy also have been singled out by some analysts as a source of the crisis.[69] Sheila Bair explained some drawbacks to the Basel rules.

> Capital ratios (also called capital adequacy ratios) reflect the percentage of a bank's assets that are funded with equity and are a key barometer of the institution's financial strength—they measure the bank's ability to absorb losses and still remain solvent. This should be a simple measure, but it isn't. That's because regulators allow banks to use a process called "risk weighting," which allows them to raise their capital ratios by characterizing the assets they hold as "low risk."
>
> As we learned during the financial crisis that financial models can be unreliable: their assumptions about the low risk of steep declines in housing prices were fatally flawed, causing catastrophic drops in the value of mortgage-backed securities. And now the London Whale episode has shown how capital regulations create incentives for even legitimate models to be manipulated.[70]

But by then the Fed long before (in late 2011) had released for comment the first round of draft regulations implementing that part of the Dodd-Frank Act in rough conformity with the formal release of full-blown international capital standards under the recent package of reforms developed by the Basel Committee on Financial Regulation (Basel III).[71] Jamie Dimon had been particularly incensed about the new capital standards the Fed was planning to apply to JPMorgan Chase, which he called "anti-US."[72] Much to Dimon's expressed chagrin, the final rule in July 2013 proposed a surcharge of 2-1/2 percentage points on the regulatory minimum ratio of capital to risk-weighted assets on systemically important banking organizations with assets greater than $50 billion.

Notice that the Fed's all-or-nothing variant less closely followed Gary Becker's original recommendation that minimum capital standards as a percent of assets rise with the size of the banking entity than did the graduated capital surcharge of 1–2.5 percent under Basel III. But under the Fed's proposal the surcharge in principle would be just large enough to offset the expected cost imposed by systemic risk. That is, it did attempt to approximate the "equal impact" rationale that the enhanced capital standards on a systemically important banking organization should be just high enough to lower the expected costs associated with systemic contagion plus those arising from its individual failure into equality with the expected costs of individual failure alone of an institution just below the size at which it becomes systemically important.[73]

True, both the Dodd-Frank Act and Basel III standards also mandated that a simple minimal "leverage" ratio of capital to unweighted total assets supplement the other, more complicated capital standards. In his aforementioned speech at Jackson Hole in August 2012, Andrew Haldane defended with theory and evidence a constant leverage ratio alone as a better regulatory approach for large, interconnected banking institutions than augmenting it with the vast array of complicated capital requirements embodied in the new law and revised international standards.[74] But his simple approach ignored the documented externalities of a collapse of one large systemically important institution. It is precisely an attempt to address the possibility of a cascade of interrelated failures (in part through capital surcharges for large banking institutions) that underlies much of the complexity of the Dodd-Frank Act and Basel III.

Of course, other factors contributed to the financial disaster as well. "Ben Bernanke . . . told the Commission 'a "perfect storm" had occurred.'"[75] Another observer made a similar claim, "I think what caused the last collapse was a convergence, almost akin to a perfect storm, of many elements in our economy and regulatory structure."[76] A third analyst, this one on the opposite side of the political spectrum, also used the same analogy, "The U.S. financial system, which had grown far too complex and far too fragile for its own good—and had far too little regulation for the public good—experienced a perfect storm during the years 2007–2009."[77]

Despite all the new rules and regulations, MF Global, a small futures broker that the New York Fed had recently made a counterparty as a primary dealer, bit the dust in late October 2011. The customers providing financing panicked upon learning that it had bet more than $6 billion on the health of European sovereign securities. As its funding dried up,

> the firm "borrowed" money from the accounts of its customers to try and salvage its own losses. Most of the blame for those trades fell on its CEO (and ex-New Jersey governor) Jon Corzine, and while his reputation and firm are ruined, it seems he will escape any legal sanction. He could still face massive civil lawsuits or fines from regulators who have a lower standard than a criminal prosecution, but jail isn't in the cards.[78]

Some $1.6 billion in customer funds disappeared in the chaotic days before the firm collapsed, presumably because the US regulations of customer accounts, which are much looser than those of the UK and Canada, proved completely inadequate.

But as of this writing, even though many of its creditors had pulled the plug, none of the enterprise's European investments themselves in fact had gone bad.[79]

A scandal involving the legitimacy of the reported London Interbank Offered Rate erupted on June 26, 2012.[80] The Commodity Futures Trading Commission, the Justice Department, and the UK's Financial Services Authority imposed a $450 million fine on the UK bank Barclays for dishonest submissions to the British Bankers Association of its estimated borrowing costs from 2005 to 2009. Beyond civil and criminal charges for the Libor fiasco, related official fines ultimately could cost global banks almost $50 billion (with unrelated fees for currency manipulation adding another $25 billion).[81] Even apart from the evident skullduggery, the behavior meant that Libor calculations for unsecured (uncollateralized) lending longer than overnight maturities, such as the widely used 3-month maturity, had been constructed entirely from whole cloth.[82] In the New York Fed's dry words, during the crisis Libor had become "increasingly hypothetical."[83] A considerably more colorful description originated across the pond. In November 2008, Governor Mervyn King had testified that Libor was "the rate at which banks do not lend to each other, and it is not clear that it either should or does have significant operational content."[84]

The Bank of England's Deputy Governor, Paul Tucker, had engaged in a conversation with Barclays's CEO Robert B. Diamond Jr. on October 29, 2008. Diamond's typed notes raised a possibility that Tucker had instructed the bank to avoid contributing to the impression of a weakened condition by not continuing to submit well above-average, and thus persistently discarded estimates of its borrowing costs. Only non-extreme submissions were included in the Libor average and made public. Tucker vociferously denied any such intent on his part, and Diamond denied that he inferred any such suggestion. To be sure, Diamond's subordinate did interpret the notes and associated conversations as instructions from the Bank or England, and the rate that Barclays submitted went down the next day.[85] At the time the scandal broke, Tucker was a leading contender to replace Sir Mervyn King as governor, but ultimately the job instead went to the sitting Governor of the Bank of Canada, Mark Carney.

In mid-March 2012, as mandated by the Dodd-Frank Act, the banking regulators conducted the third annual stress test of the large bank holding companies using very severe counterfactual assumptions. Although four of the 19 were not allowed to pay dividends or buy back shares, in another sense, at the time of the test, all of them passed:

> No banks were forced to immediately raise capital, suggesting that banks in the U.S. are generally healthier than those in Europe, which have been shedding assets and pulling back from key business to shore up their balance sheets . . . [In] the first round of tests in 2009 . . . giant lenders were required to raise $75 billion.[86]

But the following assessment of the content of the stress test can only be described as critical of at least part of the approach embodied in the Dodd-Frank Act.

> A day before the results were released, Neil Barofsky, former special inspector general for the Troubled Asset Relief Program, said the size of the banks was still a problem.
>
> "We haven't dealt with the too-big-to-fail problem, and the one way to mitigate that is to have really thick capital barriers," said Barofsky.[87]

The Obama administration, as well as its congressional supporters, certainly intended the Dodd-Frank Act to end the too-big-to-fail problem. As Andrew Ross Sorkin observed:

> Here's Timothy Geithner, the former Treasury secretary, with the administration's official line at a hearing in 2010 right before the Dodd-Frank bill passed: "The reforms will end too-big-to-fail," he said unequivocally. "The federal government will have the authority to close large failing financial firms in an orderly and fair way, without putting taxpayers and the economy at risk."[88]

On July 3, 2012, nine of the largest global banks implicitly endorsed an aspect of the Dodd-Frank's approach to ending the too-big-to-fail problem. Their living wills provided plans for a possible orderly wind down in bankruptcy. The American Bankers Association later went even further by arguing that the Dodd-Frank law ought to be given a chance to avoid a government bailout in an emergency. ABA President and CEO Frank Keating wrote the following defense of current law in a letter.

> "Before we add another layer of new restrictions and corporate restructurings, it's important to consider what Dodd-Frank actually instructs regulators—including the Fed—to do," Keating said.
>
> He listed several changes mandated by the reform law that target too-big-to-fail, including more stringent capital and liquidity rules, annual stress tests, living wills and creation of the Financial Stability Oversight Council . . . Let's implement the mandates Congress enacted to end too-big-to-fail and enhance our financial system—not destroy it.[89]

In July 2013 the Fed, along with the FDIC and Comptroller of the Currency, took another in a series of steps to attenuate the too-big-to-fail problem through implementing the Basel III capital standards. They approved a final rule with strengthened minimum requirements for the "quantity and quality" of capital held by banking organizations. In addition, for the eight largest, internationally active banking organizations, the final rule proposed a "new minimum supplementary leverage ratio that takes into account off-balance sheet exposures."[90] For them it proposed a minimum leverage ratio of 5 percent for the holding company and 6 percent for their banking subsidiaries, as opposed to 3 percent for smaller entities. The Fed augmented the capital standards in late October with a new proposal to require the biggest banks to hold 30-days-worth of liquid assets to tide them over an episode of distressed financial conditions.[91] Some smaller banks would have to cover 21 days of turmoil. The rules were mandated by the Dodd-Frank Act.

In Bernanke's monetary policy testimony of February 26, 2013, he interestingly claimed in response to a forceful question from Senator Elizabeth Warren (Democrat, Massachusetts) that financial markets were "wrong" to provide a funding subsidy for big banks because Dodd-Frank really had ended "too big to fail." Three weeks later, though, he expressed second thoughts. In his press conference on March 20, he softened his claim that Dodd-Frank had rendered future bailouts of large financial firms impossible. But he did reiterate that reforms to lessen its chances were ongoing. In this regard, the higher capital, leverage, and liquidly standards implied by Dodd-Frank realistically can't always prevent the rare instance when a big institution runs into serious financial trouble. And former Chairman Greenspan asserted at Brookings in the spring of 2010 that "the notion of an effective 'systemic regulator' as part of a regulatory reform package is ill-advised."[92] He didn't think even a collection of informed regulators always could tell reliably whether a financial institution really posed systemic risk that would call for remedial actions, despite the provisions of the Dodd-Frank Act to the contrary. This feature contrasts with the act's Orderly Liquidation Authority for large nonbank as well as bank institutions upon insolvency, which makes sense. But here too, Greenspan sounded a cautionary note: "[T]he notion that risks can be identified in a sufficiently timely manner to enable the liquidation of a large failing bank with minimum loss proved untenable during this crisis, and I suspect will prove untenable in future crises as well."[93] Whether the FDIC always can arrange a resolution, especially of a global organization whose liquidation would require international cooperation, even when the host country takes control of the holding company of the failing entity under the FDIC's "single-point-of-entry" approach, in time by tapping fees on other institutions, stock and bond investors, and uninsured depositors without the infusion of taxpayer funds is unclear. Financial reforms also will be implemented in the real political world, not in the minds of theorists. At an earlier Brookings conference in late March 2009, Vince Reinhart pointed out the difficulty of aligning the incentives of financial supervisors with the interests of society. He coined the phrase "the tyranny of the event study," in which a supervisor naturally would judge that the noticeable short-term costs of a financial panic would outweigh the hidden long-run costs of "bailouts." The latter costs include "moral hazard" effects, in which institutions assume more risk if someone else pays the price if things don't pan out. These four observations raise legitimate doubts about whether the Dodd-Frank Act, despite the greater role for the Fed, actually will end too big to fail.

In sum, at least these four questions can be advanced that leave room for skepticism that too big to fail will never reoccur: (1) Can any realistic new capital, leverage, and liquidity requirements ever be high enough to always prevent the kind of mistakes in extremis that would cause financial disaster for at least one entity? (2) Can even a collection of regulators always predict in advance the individual financial woes of every single big guy let alone systemic risks regarding all future shocks to the whole system? (3) Can orderly liquidation, especially the resolution of a global organization that would involve international cooperation, always occur before mounting losses require an infusion of taxpayer funds to supplement those of stock and bond investors, uninsured depositors, and fees on other institutions? And (4) Can the new law always eliminate the political incentives to use a bailout to avoid the financial disruption induced even by an orderly liquidation?

Now Chapter 12 first explains the remarkable lack of criminal prosecutions associated with the financial meltdown. Then it judges the revelation by *Bloomberg News* of the individual borrowers' identity in the Fed's huge emergency lending during that crisis. Finally, it warns that a political reaction to the Fed actions during the crisis, many of which proved to be effective in warding off disaster, as well as the episodic but less efficacious later quantitative easings, together with the mandate under the Dodd-Frank Act to engage in newly conceived macroprudential policies even for certain nonbanks, may turn out to have endangered the Fed's future independence in conducting orthodox monetary policy per se.

CHAPTER 12

Prosecuting the Guilty, Revealing Crisis Lending, and Endangering Fed Independence

"Is there any point to which you would wish to draw my attention?"
"To the curious incident of the dog in the night-time."
"The dog did nothing in the night-time."
"That was the curious incident," remarked Sherlock Holmes.

The absence of criminal charges after the financial crisis naturally brought to mind the lack of a dog's nocturnal barking, which Holmes noted in that interchange with Dr. Watson in "Silver Blaze" by Sir Arthur Conan Doyle.[1] This chapter initially examines that subject in some detail.

Explaining the Lack of Criminal Prosecutions after the Financial Meltdown

Bank profits came under threat in 2011 especially. Even before suffering a rash of investor lawsuits, Bank of America's capital had been under downward pressure because of increasingly delinquent real-estate loans acquired in an ill-fated merger with Countrywide Financial. In what I mistakenly thought at the time was the apex of chutzpa, that bank was accused of fraud over losses on mortgage bonds by none other than American International Group Inc. (AIG), the previous private seller of numerous suspect collateralized debt obligations but by then majority-owned by the Treasury. Yet in September 2011 in an even greater degree of audacity, the Federal Housing Finance Agency (FHFA), the conservator of Fannie Mae and Freddie Mac, brought on behalf of its two wards a civil suit against 17 domestic and foreign banks, including Bank of America. It accused them of intentionally selling mortgages of allegedly poor quality to the naïve government-sponsored agencies—that of course were actually sophisticated buyers fully capable of conducting due diligence themselves, though typically they didn't do so, instead relying only on the sellers' word—in the lead-up to the financial crisis. It demanded that the banks buy back many of the ones that eventually became worthless.[2]

The suits occurred even though it was the ever-rising HUD requirements setting affordable-housing goals for the GSEs, in order to effectuate an unwise but bi-partisan policy of excessively augmenting homeownership, that forced Fannie and Freddie to acquire in some form or guarantee more and more subprime-style mortgage loans of increasingly doubtful credit quality. It was just such GSE activity—by helping to provide an assured demand for the rotten residential housing loans—that partly though significantly accounted for the lowering of standards in the shadow banking sector, in turn encouraging those questionable loans in the first place. These civil lawsuits piled on top of others brought against the bank sellers of housing-related instruments by roughly a dozen other investors and federal government agencies that decided to try to recoup the losses resulting from plummeting prices on their voluntary investments in mortgage-related securities. (So much for the propriety of what Harvard philosopher Robert Nozick called "capitalist acts between consenting adults.")

A slap in the face of prosecutors on November 28, 2011, was the rejection by the aforementioned US District Court Judge Jed S. Rakoff of the SEC's proposed $285 million settlement of civil charges with Citigroup:

> In his ruling the New York judge denounced as "pocket change" a penalty agreed to by Citigroup as part of the settlement, claiming it was paltry compared with losses of more than $700 million in a $1 billion deal called Class V Funding III.
>
> Judge Rakoff also attacked the boilerplate language used in many SEC settlements, where defendants neither admit nor deny wrongdoing . . .
>
> The vast majority of enforcement actions filled by the SEC are resolved before coming to trial. In the past year, the SEC went to trial in 19 cases, while filing a record-high 735 enforcement actions.[3]

Although the ruling was right, the reasoning can be questioned. To be sure, emails at the time from some staff at Citigroup demonstrated both a derogatory opinion of the mortgage-backed securities and doubts about whether the bank should be pushing them with customers.[4] But most of Citigroup's clients in this area were not naïve rubes open to deceitful advice that soon would part them from their money. Rather they were "big boys"—sophisticated investors—who simply were hiring the investment bank for its market-making services and couldn't care less about who constructed the contractual arrangements or the bank's own internal outlook for such investments. Now, I'm not suggesting that caveat emptor (let the buyer beware) should apply to "little people" like you or me. But it's a different story for them. In any event most of the big commercial banks retained as investments on their books a lot of those ill-starred and insufficiently hedged securities—perhaps demonstrating stupidity but not evil intent toward customers. The judge's conclusion was correct because no regulator should deprive a person or corporation of property without either admission of guilt or due process of law.

Even so, in a development fraught with ominous portents, the administration established the Residential Mortgage-Backed Securities Working Group in January 2012 to investigate misconduct involving the "pooling and sale of risky mortgages in the run-up to the 2008 financial crisis."[5] A relevant government website describes this initiative as:

> a collaborative effort by the Securities and Exchange Commission, the Department of Justice (including many United States Attorneys' Offices), the New York State Attorney General's Office, and others to investigate RMBS misconduct. The Group is looking for evidence of false or misleading statements, deception, or other misconduct by market participants (such as loan originators, sponsors, underwriters, trustees, and others) in the creation, packaging, and sale of mortgage-backed securities.[6]

In addition, 49 state attorneys general after year-long negotiations arranged in February 2012 a $25 billion civil settlement with five banks who admitted no culpability for what the *Washington Post* called the "notorious 'robo-signing'" of documents for loan modifications and foreclosures.[7] But the newspaper editorialized in the same issue that "no one has produced evidence that large numbers of homeowners who were current on their mortgages were cast out of their homes because of bank misconduct. This looks like a case of spectacular wrongdoing with hardly any victims."[8] The banks had resisted initial government proposals that they absorb the hit for write-downs of loans held by investors for which the banks just collected payments. They argued that it amounted to transfers of wealth to the GSEs and the investors in RMBS.

> The mix of remedies in the settlement highlights the central tension behind the discussions: Should the deal be structured primarily to punish banks, or should it use allegations of wrongdoing to pressure banks to provide relief that would keep more borrowers in their homes?[9]

In light of the various legal assaults on banks, Jamie Dimon astutely concluded that the repercussions would be widespread, in that "it could be 'three to 10 years' before the industry emerged from lawsuits brought by investors looking for compensation for the losses incurred on structured products underpinned by bad mortgages."[10] Here's an estimate as of August 2013 of recent legal expenses for JPMorgan Chase alone:

$1.8 billion (2012–2013): two settlements related to mortgage-foreclosure settlements;
$410 million (2013): settlement of allegations of energy market manipulation;
$296.9 million (2012): settlement of claims concerning mortgage-backed securities;
$228 million (2011): settlement of allegations the bank manipulated bidding process for municipal securities.[11]

In September the bank reached a $920 billion agreement with three US agencies and one UK agency for civil negligence related to the London Whale episode and made another $300 million refund to credit-card customers combined with $80 million in fines. In the next month Dimon entered negotiations with Attorney General Eric Holder on behalf of four federal agencies and five state attorneys general to settle alleged civil misdeeds related to pre-crisis sales of RMBS mainly by Bear Stearns and WaMu. Recall that in 2008 JPMorgan had acceded to Treasury's requests for it to acquire these errant entities in an attempt to resist the spread of contagion. But the recent persecution of the bank didn't show much gratitude, as the government's attitude had turned vindictive, apparently in response to criticism on the left of the supposedly deceitful behavior of big banks in selling RMBS. The Department of

Justice countered a $3 billion offer from JPMorgan with a proposed total fee of $13 billion. The terms would not halt the ongoing federal criminal investigation centered in Sacramento, California, of mortgage-related activity by the firm or individual employees. The new effort had to rely on the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA), which "lets the government sue people or groups, rather than charge them with a crime, for fraud that affects a federally insured financial institution."[12] The act contained not only a lower hurdle for proof and a broad subpoena power but also a ten-year statute of limitations.

It's hard to find fault with this editorial in the *Washington Post*:

> The problem is that our legal system is supposed to hold people accountable for specific violations of specific rules. That's not what happened to JPMorgan. The government's case rests not only on a sweeping assertion that the bank deliberately hoodwinked mortgage experts at Fannie Mae and Freddie Mac but also on a novel interpretation of a previously obscure 1989 law that enabled Justice to sue after the usual five-year statute of limitations had passed . . .
>
> This is what happens when the government comes under populist pressure to nail Wall Street hides to the wall. The populist narrative casts the crisis as a crime consciously perpetrated by greedy financiers on an unsuspecting public. This version of events does not allow for the possibility that everyone, from Wall Street to Main Street to Washington, acted on widely held economic beliefs that turned out not to be true—the most important of which was that house prices would never come down and could therefore offset the risk of default on home mortgages. The remedy for bubbles and panics, if any, lies in systemic reform, an objective that the case against JPMorgan and other big banks hardly advances at all.[13]

The Federal Housing Finance Agency was too impatient to wait for the resolution of these broader negotiations, in which the bank refused to admit to wrongdoing. The agency foreswore any bank mea culpa by accepting on October 25 JPMorgan's offer to compensate the GSEs for a fraction of the pre-crisis sales both of private-label RMBS and mortgages that the GSEs then packaged into RMBS. One editorial board wasn't pleased:

> The government assault on J.P. Morgan Chase is an injustice for many reasons, but the case has now reached tragicomic heights with the bank's agreement on Friday to pay $5.1 billion for supposedly conning Fannie Mae and Fannie Mae. So the government-favored mortgage giants that did as much as anyone to foment the housing bubble and bust are now presented as victims.
>
> The premise of the allegations settled on Friday is that while it may appear that Fan and Fred were recklessly gambling on the housing market for years before the crisis, they were duped by Morgan and other banks into buying risky mortgage-backed securities that they did not understand. This is the Little Orphan Fannie defense.
>
> Even the partisan Financial Crisis Inquiry Commission, created by the 2009 Pelosi Congress and chaired by a former state Democratic Party chairman, didn't try to sell that line.[14]

That settlement brought to $8 billion the amount that the bank has tapped of the $28 billion that it had reserved since 2010 to cover legal expenses.[15] Shortly after mid-November, the bank finally put the civil charges behind it by reaching a $13 billion overall out-of-court settlement with the Justice Department. The bank conceded no wrongdoing let alone illegality in constructing and selling mortgage-backed securities before the meltdown, though it acknowledged a "statement of facts" that described the loans as risky and not always complying with the bank's own guidelines. The proceeds of the fine were to be distributed widely. The authorities considered the agreement a template for other large US banks, the top five of which at that point already had shelled out some $85 billion in legal expenses since the crisis.

Late in the year, JPMorgan Chase expended another $2.6 billion in civil charges to cover its involvement in the Bernie Madoff affair. (Don't ask if the far guiltier SEC faced any fines.) In 2013 alone, the bank agreed to pay more than $22 billion to resolve governmental probes and civil suits, of which it actually paid out about half in that year.

As for criminal prosecutions, Andrew Ross Sorkin presented the conventional view of the lack of criminal charges after the meltdown before recounting Attorney General Eric Holder's second theory for letting large financial organizations, as opposed to individuals, off the hook.

> In the aftermath of the financial crisis, the prevailing view is that nobody on Wall Street was held accountable for the damage caused to the economy and millions of Americans. But the fact that prosecutors have not claimed a big-time scalp in the financial crisis obscures the issue of prosecuting companies themselves and the complications such prosecutions raise.[16]

Holder's second explanation involving prosecutorial worries about knock-on effects occurred in testimony before the Senate Judiciary Committee in March 2013.

> "I am concerned that the size of some of these institutions becomes so large that it does become difficult for us to prosecute them," Mr. Holder told lawmakers. Prosecutors, he said, must confront the problem that "if you do prosecute, if you do bring a criminal charge, it will have a negative impact on the national economy, perhaps even the world economy. And I think that is a function of the fact that some of these institutions have become too large."
>
> Mr. Holder continued, acknowledging that the size of banks "has an inhibiting influence." He said that it affects "our ability to bring resolutions that I think would be more appropriate."[17]

Now consider a third view to explain the lack of criminal prosecutions. It is this view that is the one being offered as valid in this part of the chapter. In November 2009 government prosecutors lost the first criminal case brought in response to the financial crisis, as a jury acquitted two Bear Stearns hedge fund managers of the charge of lying to investors. The prior granting of dodgy mortgage credit in some instances involved criminal fraud. Neil Barofsky, the special inspector general in charge of oversight of TARP, provided ample documentation.[18] But subsequent cases of criminality during the collapse are hard to find. "Some financial executives have said it is unfair to punish them for what is nothing more than their failure to predict the financial crisis. Many legal experts have said much of the most controversial behavior likely was a product of poor judgment, not criminal wrongdoing."[19] Michael Lewis, author of *The Big Short* and himself critical of allowing proprietary trading to mix with advice to clients, indicated in a CNBC interview on May 3, 2012, that his research had uncovered no criminality.[20]

Consistent with such an observation, the following news broke on August 10, 2012:

> Goldman Sachs has come into a run of luck—or so it seems.
>
> The SEC has dropped its investigation into the bank's disclosures related to the sale of subprime mortgages. And the DOJ has dropped its criminal probe into allegations stemming from a 635-page Congressional report that described how Goldman profited by betting against clients and appeared to have misled customers.[21]

Charles Lane later put the matter perceptively in an op-ed piece:

> As Lanny Breuer, then the chief of the Justice Department's criminal division, explained in an interview with PBS's "Frontline" last year, it's one thing to say, in hindsight, that bankers knowingly sold their victims shoddy securities and quite another to prove, beyond a reasonable doubt, "that you had the specific intent to defraud" and "that the counterparty, the other side of the transaction, relied on your misrepresentation."
>
> Having reviewed the facts, Breuer concluded not only that he couldn't bring many criminal fraud cases but also that illegal conduct did not cause the crash.
>
> The real scandal is the counterproductive behavior that was perfectly legal: Americans' shared, erroneous belief in ever-rising housing prices and corresponding mania to profit from them . . .
>
> It is human nature, perhaps, to reduce complex historical processes to the machinations of an evil few. The rule of law exists to control that dangerous tendency.[22]

A knowledgeable observer usefully summarized this explanation:

> Barney Frank, who recently retired as the top Democrat on the House Financial Services Committee, said past convictions were an unfair standard to use when considering the government's success in reforming the financial sector.
>
> "People don't fully understand. One of the reasons we had to pass a lot of new laws is a lot of bad things weren't illegal. It will be fair to judge going forward," Frank said.[23]

We'll rely on the editorial board of the *Wall Street Journal* to draw an overall conclusion. After reviewing the analysis presented above, their words somehow seem driven less by ideology and more by evidence:

> [T]he 2008 crisis wasn't the result of bank fraud, despite liberal mythologizing. It was a classic credit panic caused by bad government policy coinciding with the rational exuberance of bankers who were responding to the incentives for excessive risk-taking that government created.[24]

Releasing Information about Fed Lending in the Crisis

After the financial disaster hit, the Fed was exemplary in describing publicly the detailed structure of all its new innovative programs as well as releasing each week the total amount of reserve funds extended in each program. In addition, the Fed disclosed every month each program's borrowing stratified by the top five banks, the next five, and the rest. But the Fed had no wish to subject individual borrowers to any stigma in financial markets by starting to reveal the identity of each institution—just as it had never done so for regular discount window loans. Had it made the names public, banks could only avoid losing counterparties by shunning discount credit just when society needed them to borrow.

However, because the Fed's emergency programs substituted for fiscal policy responsibilities, the Congress could not stand idle. At the instigation of Senator Bernie Sanders (Independent, Vermont), the Dodd-Frank law enacted in July 2010 gave the Government Accountability Office—as the General Accounting Office was renamed in 2004—authority to carry out a one-time audit of the Fed's emergency programs during the crisis. The Board released in early December 2010 the "detailed information on more than 21,000 individual credit and other transactions conducted to stabilize markets during the financial crisis."[25] The Dodd-Frank legislation also required the Fed on an ongoing basis to disclose with a two-year lag the identity of banks that tap the window for regular discount credit.

Furthermore, the Dodd-Frank bill curtailed Fed independence. Not only did the Treasury—rather than a politically independent body, which would have been preferable—get new authority to head up the group of regulators monitoring of systemic risk. But also the bill disallowed the Fed from granting discount credit only to specific individual nonfinancial companies in "unusual and exigent circumstances," which previously could have been extended under Section 13(3) of the earlier Federal Reserve Act. The Dodd-Frank Act instead permitted only programs for "broad-based" industry-wide emergency Fed lending with the Treasury Secretary's approval. Unfortunately, as Don Kohn has emphasized, the Fed must supply the name of any nonbank borrower at the discount window to the Congress within a week. Because the Fed's request for confidentiality may not be honored, the implied deterrence from tapping the window is obvious.

At the height of the crisis, *Bloomberg News* had gone to court to get more detailed information about the *individual institutions* borrowing all regular as well as emergency discount window credit at the time:

> On November 7, 2008, Bloomberg filed a Freedom of Information Act suit in U.S. District Court in New York. In it, Bloomberg claimed the documents it sought "are central to understanding and assessing the government's response to the most cataclysmic financial crisis in America since the Great Depression". . .
>
> After the filing, Bloomberg News carried stories with headlines such as, "Fed Defies Transparency Aim in Refusal to Identify Bank Loans." The story said, "Americans have no idea where their money is going or what securities the banks are pledging in return."
>
> Another story noted that the Bloomberg suit asserted, "The Federal Reserve should identify U.S. banks funded by its emergency lending because taxpayers are 'involuntary investors' who need to know the risks."
>
> Of course, that is the real issue involved concerning detailed disclosure of the loans. Bloomberg essentially argued that the risk that the Fed and thus taxpayers would lose money on some of the loans was more important than the risk that disclosure could disrupt the Fed's herculean effort to prevent a collapse of the financial system.[26]

In April 2011 *Bloomberg* won its Freedom of Information case, as did *Fox Business Network*, which had filed a similar suit. The court forced the Fed to make public the details of its massive extension of regular and emergency window lending during the crisis. The specifics encompassed identities of the individual borrowing institutions, including some foreign banks through their American branches and agencies, along with the exact amounts borrowed. On November 28, 2011, *Bloomberg* published a news account based on these FOIA requests for Fed documents on its lending during the meltdown.[27] The next day a synopsis of the story appeared in the *Washington Post*.[28] Judy Woodruff interviewed Bob Ivry, the story's main author, on PBS's *The NewsHour*. After the story broke, Chairman Bernanke vociferously denied most of the accusations in various accounts, making an accusation of his own of "egregious errors." He wrote a cover letter for a four-page a staff analysis that went to the ranking members of the House financial services committee and Senate banking committee.

The following initial part of the *Bloomberg* story contended that shaky banks borrowed "secretly" and made hypocritical public statements and lobbying efforts:

> The Federal Reserve and the big banks fought for more than two years to keep details of the largest bailout in U.S. history a secret. Now the rest of the world can see what it was missing.
>
> The Fed didn't tell anyone which banks were in trouble so deep they required a combined \$1.2 trillion on Dec. 5, 2008, their single neediest day. Bankers didn't mention that they took tens of billions of emergency loans at the same time they were assuring investors their firms were healthy. And no one calculated until now that banks reaped an estimated \$13 billion of income by taking advantage of below-market rates . . .
>
> Saved by the bailout, bankers lobbied against government regulations, a job made easier by the Fed, which never disclosed the detail of the rescue to lawmakers even as Congress doled out more money and debated new rules aimed at preventing the next crisis.[29]

Two *Bloomberg* employees appeared on the *Bloomberg* TV channel to defend the story's content and to deny that it ever described the banks as "insolvent," as the Fed staff had claimed (p. 3). The employees noted that they couldn't have proven such a charge anyway because the Fed kept bank supervisory reports confidential.

What incredible distortions in both the *Bloomberg* story itself and the personal apologia, which definitively cast doubt on the news organ's objectivity and believability, at least in this matter. In point of fact, most of the largest banks were not "in trouble so deep they required" a bailout. Indeed, the Treasury initially had to coerce most of them into accepting unneeded TARP funds, precisely *because* they were so "healthy." Nor were they subsequently "saved by the bailout." The sound banks rather saw a profitable opportunity to borrow from the central bank at an interest rate charged by the Fed in the relevant program that the Fed had set below private rates prevailing at the time financial markets were so distorted.

Emergency discount lending in a financial crisis certainly is justified, as noted in a quote from the FOMC Secretary in the original story:

> "Supporting financial-market stability in times of extreme market stress is a core function of central banks," says Bill English, director of the Fed's Division of Monetary Affairs. "Our lending programs served to prevent a collapse of the financial system and to keep credit flowing to American families and businesses."[30]

But whether banks would have availed themselves of discount facilities knowing that their identity would eventually become public knowledge is another question.

> "The fact that we have never taken any money from the government has made us, from a reputation point of view, so attractive with so many clients in the world that we would be very reluctant to give that up," said Josef Ackermann, Deutsche Bank's chief executive, explaining to analysts last week why the German lender didn't borrow from the ECB.
>
> Mr. Ackermann said Deutsche Bank still is scarred from its experience borrowing from the Federal Reserve in the first phase of the financial crisis in 2008. U.S. regulators encouraged banks to borrow under the cloak of promised confidentiality, but when the banks' identities were subsequently disclosed by the Fed, the recipients were dubbed bailout recipients. "We learned our lesson," Mr. Ackermann said.[31]

Regarding the rates charged, parts of the last paragraph in the four-page Fed staff memo were somewhat vague in quantitative terms:

> Finally, one article incorrectly asserted that "banks reaped an estimated $13 billion of income by taking advantage of the Fed's below-market rates." Most of the Federal Reserve's lending facilities were priced at a *penalty* over normal market rates so that borrowers had economic incentives to exit the facilities as market conditions normalized, and the rates that the Federal Reserve charged on its lending programs did not provide a subsidy to borrowers.

Still, the Fed's statement really left open only this question: *Should* the Fed have set the official lending rates below at least some private market rates at the time of financial distress? *Bloomberg*'s rebuttal concluded that the Fed's rates became cheaper when borrowing costs surged during the financial crisis. *Bloomberg*'s November 28 story contained the following paragraph, "The Fed says it typically makes emergency loans more expensive than those available in the marketplace to discourage banks from abusing the privilege. During the crisis Fed loans were among the cheapest around, with funding available for as low as 0.01 percent in December 2008, according to data from the central bank and money market rates tracked by *Bloomberg*."[32]

But were the Fed's procedures inconsistent with Walter Bagehot's admonition that the central bank should make emergency loans only at a high rate to prevent most opportunistic activity? It turns out that Bagehot wouldn't have frowned on the Fed's lending rates. Charles Goodhart's exegesis of Bagehot's writings proved that Bagehot never claimed that the central bank's rate should be at a penalty (nor did he ever use that word) relative to private rates prevailing at the time of a banking crisis: "Certainly the rate should be above that in effect in the market prior to the panic, but not necessarily above the contemporaneous market rate."[33] That's just what the Fed had done![34, 35]

Yet the Fed may not have reacted positively to *Bloomberg*'s revelation on November 28 of the temporary subsidy rates on the Fed's emergency loans during the financial crisis, which might explain why the Fed underplayed the subsidy rate that was part of the new central bank liquidity swap arrangement announced two days later on November 30, 2011. True, the program's details had been worked out by the Fed and five other central banks on Thanksgiving, November 24. At that time dollar borrowing from the ECB had been running about $1-3/4 billion.[36] They agreed to supplement a liberalization of dollar swaps made two-and-one-half months earlier by reducing the interest rate imposed by the Fed on foreign central banks by 1/2 percentage point.[37] The ECB, as always, passed that charge through fully to any private European bank borrowing in dollars.

The *Wall Street Journal* later wrote: "The move by central banks last week brought down the ECB's rate to about 0.58 percentage points, well below the market rate [of 1.16 percent]."[38] And the action reduced that private rate by only 40 basis points, thereby enhancing by 10 basis points the relative advantage of dollar borrowing from the ECB.

The effect of that altered incentive appeared in a story by the same reporter a day later:

> The European Central Bank lent $52.29 billion in U.S. dollars to European banks, a surge over recent levels but well below those seen during the 2008 financial crisis . . .
>
> The demand appeared to be more a case of bargain-hunting than of panic.
>
> "I don't think [the volume] is necessarily a sign of funding difficulties, it's just a sign that the facility is more attractive," said Peter Chatwell, an analyst at Credit Agricole CIB.

A chart on page 37 of the Board's late February 2012 *Monetary Policy Report* showed that the stresses induced by the European financial crisis had caused the official lending rate to become a subsidy after early September 2011 relative to the cost of borrowing dollars in private markets for foreign exchange swaps. But as Bagehot had foreseen, crisis conditions can cause what normally is a penalty official rate appropriately to become a temporary subsidy. Even so, the Fed did not advertise this subsidy-lending rate to foreign central banks.[39, 40]

Imperiling Federal Reserve Independence

The Fed's sequential programs of doubtful lasting macroeconomic efficacy involving massive purchases of securities, together with the earlier unorthodox lending initiatives that were economically effective, ended up endangering its independence. That threat didn't arise because the explosion of the monetary base per se risked engendering inflation, which won't occur despite the worries of some prominent conservatives inside and outside the System. Instead, eventual policy tightening is capable of preventing any potential inflationary pressure because the Congress in October 2008 gave the Fed authority to pay interest on depository reserves. The Fed thus has the authority to control the all-important funds rate even in the face of humongous amounts of excess reserves. From the perspective of policy effectiveness, that authority has rendered in my view all the talk of an "exit strategy" to reduce its balance sheet a waste of breath.

A potentially more telling issue is that, through various programs, the Fed has endangered its political independence by infringing on what should have been the prerogatives solely of the Congress and the Treasury. At the height of the 2008 financial crisis, an appropriate framework for a governmental bailout or resolution of an interconnected but insolvent nonbanking entity was unavailable. In the circumstances, the Fed acceded to Treasury pressure to extend its own credit in the Bear Stearns and

AIG episodes. Fed lending to the associated Maiden Lane facilities contributed to the unusual surge in its balance sheet. Kenneth Kuttner, though, rightly cautioned:

> Saddling the Fed with bailout duties obscures its core objectives, unnecessarily linking monetary policy to the rescue of failing institutions . . . In view of these concerns, it would be desirable to return to Bagehot's narrower conception of the LOLR [lender of last resort] function, and turn over to the Treasury the rescue of troubled institutions, as this inevitably involves a significant contingent commitment of public funds.[41]

Indeed, Allan Meltzer went so far as to claim this:

> The change to an independent policy did not survive the 2007–9 crisis . . .
>
> Chairman Ben Bernanke seemed willing to sacrifice much of the independence that Paul Volcker restored in the 1980s. He worked closely with the Treasury and yielded to pressures from the chairs of the House and Senate Banking Committees and others in Congress . . .
>
> After the Treasury supported General Motors and Chrysler with what will be a growing bailout of automotive companies, the Federal Reserve accepted General Motors Acceptance Corporation (GMAC) as a bank, enabling GMAC to borrow at the discount window. GMAC at once began to offer zero interest rate loans for up to five years to borrowers with below median credit ratings. This appears to be a response to pressure from prominent members of Congress, a further sacrifice of independence. Many members of Congress want the Federal Reserve to allocate credit to borrowers that they favor. This avoids the legislative and budget process just as Fannie Mae and Freddy Mac did. It subverts the principles of an independent central bank.[42]

The passages of TARP in October 2008 followed by the Dodd-Frank Act of July 2010 essentially extricated the Fed's balance sheet from the whole issue of bailouts versus resolution of insolvent institutions, a big step in preserving its political independence. Already in May 2010, Chairman Bernanke had emphasized the importance of central bank independence within government. He bolstered his case by quoting David Ricardo:

> Additionally, in some situations, a government that controls the central bank may face a strong temptation to abuse the central bank's money-printing powers to help finance its budget deficit. Nearly two centuries ago, the economist David Ricardo argued: "It is said that Government could not be safely entrusted with the power of issuing paper money; that it would most certainly abuse it . . . There would, I confess, be great danger of this, if Government—that is to say, the ministers—were themselves to be entrusted with the power of issuing paper money." Abuse by the government of the power to issue money as a means of financing its spending inevitably leads to high inflation and interest rates and a volatile economy.[43]

But he didn't mention another Ricardo quote that by implication criticized on those very grounds the Fed's large-scale purchases of Treasury debt. As Richard H. Timberlake wrote:

> David Ricardo had observed a Bank of England operating in the mode anticipated for the Bank of the United States. His perceptive comment on the relationship of a central

> bank to its government stands as a caution for all time. "It may be considered," he remarked, "whether a bank lending many millions more to Government than its capital and savings can be called independent of that Government."[44]

In his aforementioned presentation in Japan, Bernanke allowed for such cooperation with the government by an allegedly independent central bank under certain conditions.

> The Bank of Japan became fully independent only in 1998, and it has guarded independence carefully, as is appropriate. Economically, however, it is important to recognize that the role of an independent central bank is different in inflationary and deflationary environments. In the face of inflation, which is often associated with excessive monetization of government debt, the virtue of an independent central bank is its ability to say "no" to the government. With protracted deflation, however, excessive money creation is unlikely to be the problem, and a more cooperative stance on the part of the central bank may be called for. Under the current circumstances, greater cooperation for a time between the Bank of Japan and the fiscal authorities is in no way inconsistent with the independence of the central bank, any more than cooperation between two independent nations in pursuit of a common objective is inconsistent with the principle of national sovereignty.[45]

Not surprisingly, Fed bashing by Democrats, Independents, and Republicans alike started to become a parlor sport in the course of Bernanke's time as chairman. Representative Barney Frank resuscitated a proposal to remove Reserve bank presidents from voting on the FOMC. As we have seen, the Democratic-sponsored Dodd-Frank Act required that the emergency Fed lending that had been justified by "unusual and exigent circumstances" henceforth be generalized programs broadly available that also get Treasury approval. Independent socialist Senator Bernie Sanders successfully sponsored a plank in the act that mandated identifying publicly the individual recipients of such credit during the financial crisis. Sanders and Republican libertarian Representative Ron Paul stumped anew for ongoing disclosure of the parties getting the Fed's regular discount lending and for Fed audits by the Government Accountability Office (GAO). In addition, Paul on his own reiterated his desire ultimately to "end the Fed" and return gold to its rightful place.

Other Republican presidential candidates joined the fray. Rick Perry in August 2011 claimed that Bernanke was "almost treacherous—or treasonous in my opinion." In a series of debates, Mitt Romney, Rick Santorum, Herman Cain, and Newt Gingrich all indicated that they would not reappoint Bernanke to another term. Gingrich, easily the most intemperate, exhibited some difficulty keeping his facts about the Fed straight. Readers of this book know that an amendment to the Federal Reserve Act in 1977 created the Fed's dual mandate and that the Humphrey-Hawkins Act passed the next year affected only its reporting requirements. But Gingrich asserted that "I would prepare legislation to eliminate the Humphrey-Hawkins Act, which has totally confused the Fed."[46] No, it wasn't the Fed that was confused. Recall that "Newt Gingrich made between \$1.6 million and \$1.8 million in consulting fees from two contracts with mortgage company Freddie Mac, according to two people familiar with the arrangement."[47] Gingrich explained in a presidential debate that Freddie Mac paid him so much for his services as an "historian." If so, that GSE obviously was short-changed.

At a hearing in February 2012, Representative Scott Garrett took umbrage at the Board's distribution to the Congress of an advocacy piece on housing policy. The Fed no doubt forwarded the study in the belief that the transmission of mortgage rates—that were supposedly lower than otherwise owing to its unconventional monetary policies—had been impaired. Elevated unemployment implied that many existing and potential homeowners were unable to afford mortgage payments and couldn't service outstanding mortgage debt. Furthermore, because of declines in house prices, a mounting and worrisome share of mortgage holders were in foreclosure and numerous others were underwater and unable to refinance. On top of that, much higher underwriting standards and down payments for granting mortgages lessened their availability and meant that many potential new home buyers couldn't get financing to buy homes. According to the Fed's white paper, these conditions had prevented lower mortgage rates from having a bigger simulative effect on homebuilding. The white paper included the following text:

> In many of the policy areas discussed in this paper—such as loan modifications, mortgage refinancing, and the disposition of foreclosed properties—there is bound to be some tension between minimizing the GSEs' near-term losses and risk exposure and taking actions that might promote a faster recovery in the housing market. Nonetheless, some actions that cause greater losses to be sustained by the GSEs in the near term might be in the interest of taxpayers to pursue if those actions result in a quicker and more vigorous economic recovery.[48]

In other words, the government needed to help the Fed by strengthening the bite of monetary policy regardless of the heightened impairment to the GSE's finances and risk to the taxpayer. (Now that's keeping one's priorities straight!)

According to an analysis in the *Washington Post*,

> Many of the white paper's ideas to help the housing market echo Obama administration proposals, such as helping homeowners refinance into more affordable mortgages and selling foreclosed buildings for use as rental properties . . .
>
> "We have to be really careful because of our special independence," Jeffery Lacker, president of the Federal Reserve Bank of Richmond, said last month on CNBC. "And when the central bank strays into fiscal policy, it gets itself entangled in politics, and that can threaten our independence" . . .
>
> Garrett said that "the Congress has a lot of interest in monetary policy. I guess the comparable would be for us to do a House resolution with regard to monetary policy. Is this an invitation now to Congress that we should be issuing resolutions to what the monetary policy [is] that the Fed should be doing?
>
> "It was not the intent of that white paper to provide a set of recommendations," Bernanke replied. "I know you're skeptical, but we are trying very hard to avoid encroaching on Congress's fiscal responsibilities . . . I apologize if it was misinterpreted."[49]

Even after Bernanke's apology, Senator Orrin Hatch (Republican, Utah) piled on:

> Your staff's white paper contains a number of conjectures and proposes consideration of a number of policies that are clearly in the province of fiscal policy, including policies that would directly allocate losses to innocent taxpayers, even though those taxpayers did not undertake the risks that led to the losses."[50]

Despite the white paper's extensive advice, the Fed actually hasn't pointed out the ultimate steps necessary to solve fundamentally housing's woes. In stark contrast, Paul Volcker had done so:

> There is one very large part of American capital markets calling for massive structural change that so far has not been touched by legislation. The mortgage market in the United States is dominated by a few government agencies or quasi-governmental organizations. The financial breakdown was in fact triggered by extremely lax, government-tolerated underwriting standards, an important ingredient in the housing bubble. The need for reform is self-evident and the direction of change is clear.
>
> We simply should not countenance a residential mortgage market, the largest part of our capital market, dominated by so-called Government Sponsored Enterprises.
>
> Collectively, Fannie Mae, Freddie Mac and the Home Loan Banks had securities and guarantees outstanding that exceed the amount of marketable U.S. Treasury securities. The interest rates on GSE securities have been close to those on government obligations.[51]

Republicans also voiced a stream of criticisms about many of the Fed's actual policies. The four top Republican leaders of the House and Senate wrote to Bernanke in September 2011, recommending that the FOMC "resist further extraordinary intervention in the U.S. economy." The letter went on to say, "It is not clear that the recent round of quantitative easing undertaken by the Federal Reserve has facilitated economic growth or reduced the unemployment rate."[52]

Not quite a year later, presidential candidate Mitt Romney opined similarly,

> I don't think a massive new QE3 is going to help this economy . . . The Fed's first action, quantitative easing, was effective to a certain degree. But I believe that the QE2, the second round of easing, I don't think it had the impact that they were hoping for."[53]

Some other Republicans had worried that the associated "money creation" would generate escalating inflation.

> More than a year after Republicans from House Speaker John Boehner of Ohio to presidential candidate Ron Paul of Texas warned that the Fed's second round of asset purchases risked a sharp acceleration in prices, the surge has failed to materialize . . .
>
> Gingrich said in September that Bernanke was "the most inflationary, dangerous and power-centered chairman" in the central bank's history.[54]

Rather than Bernanke's inflationary record, the last statement actually reflected Gingrich's inflated rhetoric.

Republicans in March 2012 introduced bills in the Congress that limited the Fed's mandate to an inflation goal alone, restricted its portfolio to Treasury securities, repos, and reverse repos, except in emergencies, and expanded the voting authority of Reserve bank presidents. Representative Kevin Brady (Republican, Texas) introduced the Sound Dollar Act in the House and Senator Mike Lee (Republican, Utah) did the same for a companion bill in the Senate. Stanford economics professor John Taylor testified in support of the entire bill. His defense of a *single* goal for monetary policy was inexplicable in light of the *two* components of the Taylor rule. But his testimony went on to assert more understandably that

> [T]here is already considerable chatter and speculation in the markets about the circumstances under which the Fed would start buying mortgage backed securities again. The fact that the Fed can, if it chooses, intervene without limit into any credit market—not only mortgage backed securities but also securities backed by automobile loans, or even student loans—raises more uncertainty, and of course raises questions about why an independent agency of government should have such power.[55]

William Poole of the Cato Institute and the University of Delaware agreed on instituting a single inflation goal and constraining the Fed's portfolio but disagreed on changing the rotating vote of most presidents. Laurence Meyer of Macroeconomics Advisors opposed all the features of the bill. He added, "Please recognize that the greatest threat to the stability of long-term inflation expectations is an assault on the independence of the Fed's monetary policy decisions."[56]

In an effort to burnish its image as an inflation fighter in the face of worries on the right about excessive creation of the monetary base and recommendations on the left to raise its inflation goal, the FOMC had announced after its January 2012 meeting a long-run inflation objective of 2 percent for the PCE. Despite the press briefing that placidly revealed the unavoidable delay in attaining that objective in the event of an inadvertent miss, in testimony about a week later on February 2 Bernanke ran into a buzz saw of criticism from Representative Paul Ryan, chairman of the House Budget Committee:

> "My interpretation is that the Fed is willing to accept higher levels of inflation than your preferred rate in order to chase your employment mandate," Mr. Ryan said.
>
> "I wouldn't say that's correct," Mr. Bernanke replied. "We will not actively seek to raise inflation or to move away from our [2%] target," Bernanke said. "We're always trying to bring inflation back to the target."[57]

Only a couple of minor facts can be advanced in Ryan's defense. In December 2012, the whole Committee released guideposts for eventual funds-rate firming that included an acceptable rate of consumer inflation for the extended period of economic weakness of as much as 2-1/2 percent. And previously, Vice Chair Yellen in April expressed a preference for an outcome that minimized the welfare loss in optimal-control simulations of the Board's econometric model by pushing inflation a little above 2 percent for an extended period. The purpose was to gain a faster decline to the natural rate of unemployment, which would require a minor overshoot of actual unemployment below its natural rate for a couple of years.[58] Even so, in his fifth press conference Bernanke did correctly observe that those simulations "still involve inflation staying quite close to 2 percent."[59] Bernanke was reemphasizing the hard-won gains for central bank credibility by using the simulated proximity of inflation to 2 percent to counter the arguments of liberal economists that the Fed should permit the medium-term inflation gap to widen more.[60]

On July 24, 2012, the House of Representatives, to honor Representative Ron Paul (Republican, Texas), passed by a lopsided 327 to 98 vote his bill to have the GAO audit the Fed's monetary policy and foreign currency functions, in addition to its existing Fed audits. Bernanke had called the bill "a nightmare scenario."[61] Although it was destined to bite the dust in the Senate, presidential candidate Mitt Romney in mid-August pushed to incorporate the idea into the party platform. In doing so he personified the word "oxymoron."

> "I would like to see the Fed audited," Romney said today. Still, he cautioned that Congress shouldn't be given the authority to run the central bank. "I want to keep it independent," he said. "There are very few groups that I would not want to give the keys to. One of them is Congress."[62]

The Republican Party also must have wished to recognize Paul's efforts in a more obvious lost cause, as its platform included a plank recommending a new Gold Commission. That side of the aisle also opposed pursuing large-scale asset purchases for a third time.

After the decision to implement QE3, the reaction of Republican Party spokesmen was vociferous. For example, Tennessee Senator Bob Corker said, "I'm disappointed in the Federal Reserve's actions today and truly believe Chairman Bernanke is beginning to do serious damage to the Fed as an institution."[63]

St Louis Bank president James Bullard expressed a similar concern. "What I'm worried about is this creeping politicization," said Mr. Bullard. Pressure from politicians is often for central bankers to do more.[64]

John Cochrane of the University of Chicago's Booth School echoed the concerns about the practical threat to the Fed's autonomy in an op-ed piece. He summarized how, by becoming a "financial czar," the Fed was exceeding its legitimate democratic role and as a consequence understandably endangering its independence.

> [T]he Fed has crossed a bright line. Open-market operations do not have direct fiscal consequences, or directly allocate credit. That was the price of the Fed's independence, allowing it to do one thing—conduct monetary policy—without short-term political pressure. But an agency that allocates credit to specific markets and institutions, or buys assets that expose taxpayers to risks, cannot stay independent of elected, and accountable, officials.[65]

He also saw dangers to the Fed's political independence in the Dodd-Frank mandate for it to monitor systemic risk. Officials had asserted that the elevation of financial stability rendered macroprudential policy the Fed's first line of defense against imbalances such as bubbles. Note that "macroprudential policy" was defined as follows by Tobias Adrian and Nellie Liang, senior staffers of the New York Fed and the Board, respectively:

> Macroprudential policies—both structural through-the-cycle and cyclical time-varying—are usually viewed as the primary tools to mitigate vulnerabilities and promote financial stability. These regulatory and supervisory tools, such as bank capital requirements or sector-specific loan-to-value ratios, can shore up the resilience of the financial system to possible adverse shocks.[66]

But in another op-ed, Cochrane said that in carrying out its new responsibilities, it should tread carefully. He recommended three qualities of an ideal version of macroprudential policy:

> Humility. Fine-tuning a poorly understood system goes quickly awry. The science of 'bubble' management is, so far, imaginary.
>
> Follow rules. Monetary policy works a lot better when it is transparent, predictable and keeps to well-established traditions and limitations, than if the Fed shoots from the hip following the passions of the day.
>
> Limited power is the price of political independence. Once the Fed manipulates prices and credit flows throughout the financial system, it will be whipsawed by interest groups and their representatives.[67]

Still, the attractiveness of macroprudential policy to central bankers is understandable. (This point would be even more obvious if Chapter 2 in this book is correct in identifying the real source of the Great Depression. Recall that chapter claimed that traditional monetary policy conduct in the form of the Fed-sponsored near doubling of the Treasury bill rate in the two years ending in mid-1929 together with the organization's laggard unwinding of the elevated bill rate because of inadequate reserve injections in the early 1930s were responsible.) According to *Bloomberg*,

> "It is a brave central banker who would deliberately induce a recession in order to head off the mere risk of a future financial correction," Bank of England Deputy Governor Charlie Bean said in a May 20 speech. "That explains the interest in deploying additional policy instruments."
>
> Fed officials have raised financial-stability concerns at meetings in recent months. Among assets that have drawn the gaze of officials in speeches and minutes of meetings are premiums on longer-term debt, price-earnings ratios on some small capitalization stocks, declining credit quality on some high yield loans, and farmland values . . .
>
> Success for so-called macroprudential regulation would see policy makers deflate potential excesses by limiting access to credit, protecting economic expansions from burst bubbles or blunt interest-rate increases. The trouble is, the track record of such tools is at best mixed.
>
> "Central banks are doing a lot on macropru right now," said Gavyn Davies, chairman of London-based hedge fund firm Fulcrum Asset Management LLP. "The basic lesson from past attempts is, they haven't worked for very long and they haven't worked very well, so we have to do better than we have in the past."[68]

Actually, although I certainly advocate applying a sufficiently strict but unchanging regulatory and supervisory regime to nonbank financial institutions—both those who are not Systemically Important Financial Institutions as well as those that are—I dissent from imposing a time-varying, discretionary macroprudential policy on any nonbanks. My opposition is not so much rooted in its possible ineffectiveness, though I share that concern. Rather, I contend that in this country applying to certain large nonbanks the Orderly Liquidation Authority for Systemically Important Financial Institutions mandated by Dodd-Frank, which Chapter 11 of this book supported, will prove to be fairly effective, though not infallible. That prospect would render any macroprudential policy imposed on them mostly superfluous. If the authorities recognize soon enough when interconnected nonbanking institutions are entering insolvency and immediately shut them down, then no significant hits to creditors should occur and contagion thus should be avoided. But another crucial consideration for me is even more important: discretionary macroprudential policy clearly would excessively impair the predictability of economic arrangements. Well-intentioned but highly fallible bureaucrats, acting to avoid an unreliable impression of threatening systemic risks, should not be taking it upon themselves to alter judgmentally the maneuvering room of nonbank economic agents over time. Such a discretionary approach is no way to promote the flowering of human ingenuity and progress through the rule of law not regulators.

Wait a minute—didn't the discussion of Weber's ideal types in Chapter 7 contain the following text:

> Second is the case of a . . . 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 . . . [Still,] in some circumstances imposing on nonbanks as well as 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.

Don't those words mean that I've already contended that at times a judicious discretionary adjustment to macroprudential policy even for nonbanking institutions, assuming it's appropriately designed, would be efficacious in putting a stop to certain lesser emerging financial imbalances that could impair overall stability despite adherence to an adjusted Taylor rule? Yes, but . . . Just because a given policy initiative *would be effective* doesn't necessarily mean that it *should be adopted*. Although many parallels don't hold in the following analogy, I submit that the essential one that I'm now invoking does directly relate: It's arguably true that dropping atomic bombs on Hiroshima and Nagasaki *was effective* in shortening the duration of World War II and saving American lives. Even so, as a political judgement based on overall humanitarian considerations, I nevertheless *would have opposed* President Truman's decision to use nuclear weapons. Analogously, in the case of discretionary alterations of macroprudentiaI policies for nonbanks, I assert that in the end it's better to stray occasionally from optimal economic outcomes if the benefit is the opportunity to continue pursuing policies that are justifiable ethically.

But based on his practical experience in the United Kingdom, my old boss Don Kohn has offered a much more reassuring take on discretionary macroprudential policy for nonbanks than I just did. After a four-decade career in various aspects of monetary policy at the Fed, he became an external member of the Financial Policy Committee (FPC) at the Bank of England as well as a Senior Fellow at Brookings. By way of introduction, he explained that unlike monetary goals, the macroprudential objective "cannot be defined numerically." Instead,

> the authorities must identify risks to financial stability that could arise in different ways: for example, from excessive leverage, dangerous exposure to runs, mispricing of risks, or concentrated or poorly understood distribution of risks in the financial system. And the FPC will act to mitigate these risks using a broad set of tools.

> Many of these are forms of old tools—capital standards, liquidity requirements, supervisory oversight—that have been, and still are, used as part of microprudential regulation. But now we propose also to deploy them in a new way—by varying them over the cycle or changing them in response to specific risks; by considering the system as a whole; by setting standards so that market participants internalize, that is take into account, the wider costs or externalities, of financial instability; and by paying special attention to protecting against tail risk, like runs and fire sales that threaten to disrupt intermediation and to feedback on economic activity.[69]

In personal correspondence, Kohn elaborated:

> In concept, [macroprudential policy] addresses externalities—stuff not appropriately priced by the market. Among those externalities would be the huge cost for innocent bystanders from financial crises. You can see this of course in recent years in the US but also think about the Asian financial crisis of 1997–98. And the response to the crisis has created moral hazard, which is only partly addressed by the Orderly Liquidation Authority, which in my view does not address the externalities sufficiently. It does allow orderly liquidation of Systemically Important Financial Institutions, but SIFI failure wasn't the only source of problems; Lehman did make everything worse but the economy was dropping pretty rapidly before that and was headed for a deep recession in any event.[70]

As to recent practice, in late June 2014 the United Kingdom subjectively imposed a high mortgage-to-income limit only on banks issuing retail deposits—commercial banks and building societies. And as Kohn privately noted as well "the interest rate stress does apply to all lenders, but . . . [i]n the UK, unlike the US before the crisis, almost all the mortgage lending is through the banks; the nonbank securitization market is very limited. Our intent is that under the most likely path for the UK housing market our restraints [wouldn't act to] change current practices, but only to protect against a deterioration in credit quality."[71]

But shortly afterward, a devastatingly convincing critique of the current practices used in the United States to apply macroprudential policies to nonbanks appeared in an otherwise generally unconvincing overall review of the Dodd-Frank Act by the staff of the Republican majority of the House Committee on Financial Services.[72] It identified numerous conceptual and actual flaws of having the Financial Stability Oversight Council designate some nonbanks, especially insurance companies, to be Systemically Important Financial Institutions. The report prompted the Committee's former chairman, Barney Frank, to lead off his testimony on July 24, "I was pleasantly surprised by the bipartisan tone of the Republican Staff report."[73] The Q & A session featured a "[l]ittle dust-up between Rep. Scott Garrett of New Jersey and Frank: Frank says he was skeptical of designating non-bank institutions as systemically important institutions."[74]

Macroprudential policies inevitably add to the scope of the central bank's responsibilities and obviously enter areas that require coordination—even control—by other organs of a democratic government. But early in the New Year, Kohn also expressed profound worries about whether the Fed's unorthodox monetary policies during and after the financial meltdown could pose an unusual threat even to its traditional political independence in conducting monetary policy per se. That danger would be particularly ominous after the time arrives to start firming its policy. Kohn's words well capture my own concerns, warranting an extended quote:

> A number of the actions the Federal Reserve took during and after the crisis straddled the line between fiscal and monetary policies. They involved taking some limited fiscal risk onto the central bank's balance sheet, and they entailed close cooperation between the monetary and fiscal authorities . . .
>
> Just as the distinctions between liquidity and solvency problems become much less sharp in a crisis, so, too, do the distinctions between fiscal and monetary policies designed to limit the scope of the crisis.
>
> The Federal Reserve did not expect to take losses on any of these facilities—and all those loans were indeed repaid without any losses to the Federal Reserve or the taxpayers. And the very act of making those loans helped to limit the extent and duration of the crisis—fulfilling one of the principal rationales for the founding of the Federal Reserve 100 years ago. But had the financial panics continued and deepened and many more borrowers failed, the taxpayer could have suffered losses.[75]

Kohn already had led off his paper with his disquieting conclusion. It perfectly summarizes the entire last part of the chapter on political threats to the Fed's independence that is absolutely necessary for an ideal setting of monetary-policy instruments. Kohn said,

> Naturally, understandably, and appropriately, these circumstances have increased the scrutiny of central banks and raised questions about the goals, governance, and accountability of these institutions. The issue before us is whether we should worry that this scrutiny will result in an erosion of their independence from the elected government. We should be concerned about the potential for reduced independence: evidence over time and across countries indicates that less independence is correlated with higher inflation. To foreshadow my answer: the actions that the Federal Reserve and other central banks took should not and need not lead to a loss of monetary policy independence, but we need to be vigilant. The risks and threats to independence have increased. (p. 1.)

The next chapter interrupts our provincial concentration by casting our net far and wide around the globe. We'll first offer an explanation of the Bank of Japan's inability to prevent mild but stable deflation in comparison with our attainment of a low but positive inflation rate, albeit one below the Fed's 2 percent target. Next, we'll turn to the Bank of England's implementation of inflation targeting, quantitative easing, and forward guidance. Finally, the chapter examines the trembling in the Euro-zone after Greece came clean about the extent of its deficit and debt problems, causing the currency crisis to erupt, as well as the ameliorative actions undertaken by the ECB. In all three cases, we'll apply quantitatively the novel theory of inflation advanced in Chapter 5 and adopted to explain our domestic inflationary experience in Chapter 9. Though much technical research remains to be done, perhaps the suggestive results offered in the following chapter will serve to stimulate such future work. The rough and preliminary foreign experience about to be introduced in Chapter 13 does seem to me to offer promising support for the new theory. But you can judge for yourself.

CHAPTER 13

Experiencing Deflation or Disinflation around the World

Masaaki Shirakawa spent 39 years at the Bank of Japan, becoming its governor in April 2008. Exactly six years earlier, as adviser to the governor, he evaluated the experience of the first year of QE in a prophetic paper. He drew a skeptical tentative conclusion about the efficacy of the initiative, emphasizing the difficulty for a central bank to provide stimulus once the economy had begun to experience the zero bound on short rates. At the time he understandably focused on the buildup of excess reserves at banks:

> [T]he author would like to again emphasize the importance of the fact that Japan's economy is confronting zero interest rates . . . Based on this, in a situation where there is little room for a further decline in short-term interest rates, the effects of monetary easing will necessarily be limited. The fact that economic activity has not been stimulated despite an aggressive increase in reserves since March 2001 seems to be consistent with what such standard theory predicts. This kind of conclusion may frustrate readers who seek to find a monetary policy solution. Some may argue that, without other options, the Bank of Japan should try unconventional monetary policy even if the effects are not certain. However, given the difficulty of the problems facing Japan's economy, before jumping to such conclusion, economists are expected to present sober analysis of the situation fully utilizing all the information and knowledge available.[1]

Despite such skepticism, Governor Shirakawa responded to overwhelming public and political pressure by overseeing the renewed establishment of quantitative easing in November 2010. Yet Japan's extended deflation continued. In late 2012 Shinzo Abe was appointed Prime Minister. He deemed Shirakawa's monetary policy to have been insufficiently forceful. Abe successfully pressured the BOJ early in 2013 to double its existing 1 percent inflation target. He also appointed Haruhiko Kuroda to take over the BOJ and pursue much more substantial QE.

On March 19, 2013, the last day of his five-year term, Shirakawa delivered his swan song at a press conference; this chapter, though, shows that a crucial part of his analysis was in error:

> A lack of cash isn't what's keeping companies from increasing capital expenditure . . . If there was a single thing that would have cleared the fog and solved all problems, Japan wouldn't have been in this situation for 15 years . . . What may be desirable for market participants may not necessarily be the same as what is desirable for the economy in the long run . . . I feel it is dangerous to believe that central banks can freely control market moves with words.[2]
>
> Powerful monetary easing by the central bank is necessary to overcome deflation. Meanwhile, a wide range of efforts from the government to enhance competitiveness and growth are required.[3]
>
> With the easing of the yen and the rising of stock prices, I believe a chance is here.[4]

Shirakawa Failing to Relieve Deflation in Japan and Kuroda Taking Over

The two "lost decades" in Japan occurred despite the initiation of quantitative easing in March 2001 for a half decade that resumed in the fall of 2010 before being expanded later.[5] But had its effectiveness really been impaired, as Bernanke has contended, by the BOJ's self-imposed restrictions on its scale and scope, limiting it mainly to shorter-term government securities? Kazuo Ueda has examined the deflationary situation in Japan. He wrote an instructive description:

> The rate of change in the ex-energy-food component of Japan's Consumer Price Index (henceforth, CPI) fell below zero in early 1999 and has been negative since then with only minor exceptions. During this period the BOJ has used many so-called nontraditional monetary policy measures in an attempt to stop the deflation. The attempt however, has so far not succeeded clearly. This episode is interesting in itself, but also in light of the current disinflationary tendencies of the developed economies and central banks' attempts, especially those of the Fed, to stop them. Many of the measures central banks are currently using are those that were used by the BOJ earlier.[6]

Chapter 9 interpreted the theory of inflation in Chapter 5 as core consumer inflation is:

(unity)(shorter-term expected inflation) – (beta) (unemployment rate – natural rate)

or:

(alpha) (targeted inflation) + (1 – alpha) (lagged inflation) – (beta) (unempl. rate – natural rate)

A steady level of the real short rate and hence the unemployment and inflation gaps allows us to derive this formula. Core consumer inflation is:

(1/alpha) [(alpha) (targeted inflation) – (beta) (unemployment rate – natural rate)]

During the five years of QE from March 2001 to March 2006, the Bank of Japan was aiming at zero inflation. (Ueda: "[T]he BOJ committed itself to maintaining the provision of ample liquidity until the rate of change of the CPI became zero percent or higher on a sustained basis.")[7] During that time, the unemployment rate also averaged around 4.5 percent. Suppose that the natural rate was 3.0 percent, a little above its average until shortly before the bursting of the bubble in the early 1990s, for a gap of 1.5 percentage points. Posit too that the values that I tentatively assumed in Chapter 9 for the United States after the mid-1990s of 0.5 for alpha and 0.25 for beta applied to Japan as well early in the last decade. (Of course, established Bayesian methods imply that when econometricians confront these theoretical priors with Japanese data to arrive at posterior values, changes no doubt will occur.) But using the assumed figures for now gives this result. Core consumer inflation is:

(1/0.5) [(0.5) (targeted inflation) – (0.25) (unemployment rate – natural rate)]

or:

(1.0) (0.0) – 0.5 (1.5) = – 0.75 percent

Not seasonally adjusted 12-month inflation of the CPI excluding food and energy in Japan over the five years from March 2002 through March 2006 averaged –0.4 percent at an annual rate.

The emergence of renewed deflationary pressures induced the BOJ in November 2010 to adopt another program of QE with asset purchases of one-fifth the size of the economy. For two years after the program started, the unemployment rate continued to average about 4.5 percent while the natural rate arguably rose to 3.5 percent. But this time the BOJ raised the targeted inflation rate to 1 percent. (Ueda wrote, "In the December [19, 2009] meeting, the BOJ announced that the mid-point of the [0–2] range, 1 percent was the most preferred inflation rate.")[8] Thus, on the assumption of no change in the coefficient values, now we have for the second episode: Core consumer inflation is:

(1.0) (1.0) – 0.5 (1.0) = 0.5 percent

For two years after the second round of QE started, the change in core prices did move higher, though staying well below the prediction. Not seasonally adjusted core CPI 12-month inflation rose from its November 2010 reading of –1.3 percent to a figure of –0.5 by December 2012.

Newly appointed Shinzo Abe became Prime Minister in late 2012. He appointed Haruhiko Kuroda to succeed Shirakawa. Kuroda vowed to expand quantitative easing enough to double the monetary base, extend the maturity of government debt purchases, and enlarge the buying of private debt, even including Real Estate Investment Trusts. And he followed through. As in the United States, speculative forces depressed long-term yields, at least for the time being:

> "Investors in Japan assume that the BOJ will continue to buy JGBs vigilantly next year and the year after," said Makoto Yamashita, the chief Japan rates strategist at Deutsche

> Securities, a primary dealer. "They take it for granted they can sell those bonds bought expensively to the BOJ as more and more notes disappear from the secondary market. It's too frightening to think what might happen when the BOJ tapers."[9]

Under pressure from Abe, the BOJ was forced in January 2013 once again to raise its target for consumer inflation—this time from 1 to 2 percent. Kuroda vowed to attain success in two years.

The theory of inflation just advanced together with no change in labor-market slack or in the assumed coefficient values implies that core consumer inflation indeed should rise over time to 1.5 percent. By December 2013 the 12-month trend of core consumer inflation *had* climbed already to 0.7 percent, but *also* auspiciously the unemployment rate had slipped off to 3.7 percent from 4 percent in November. Conceivably, the BOJ's goal of hitting 2 percent consumer inflation in two years' time is approachable after all. But that result would not demonstrate the effectiveness of QE; rather, it would show the power of the specification of the inflation target itself.

An alternative interpretation of the facts in Japan has been offered by Kenzo Yamamoto:

> Since Prime Minister Abe took office, the Japanese government implemented an expansionary fiscal policy including an increase in public investment. The size of the fiscal deficit has amounted to 8 percent of GDP. Aggressive fiscal policy, combined with the aggressive purchase of Japanese Government Bonds by the BOJ, has contributed to filling the gap between the actual unemployment rate and the natural rate and to changing the inflationary expectation of the public.
>
> No one denies that an extraordinary fiscal expansion with underwriting or aggressive purchasing of government bonds by a central bank will boost the economy, at least temporarily. From this point of view, it can be concluded that the effectiveness of fiscal expansion has been demonstrated in Japan. The power of the specification of the inflation target as well as the effectiveness of QE, however, has not been demonstrated yet.[10]

Obviously, Yamamoto has advanced a very plausible theory of the recent inflation experience in Japan, one consistent with the successful Japanese experience with the combination of fiscal and monetary stimulus in the 1930s.[11] Although much more research remains to be done, I still initially would reply that my own theory seems to be more general because, even ignoring fiscal policy, it better accounts for US inflation, as already seen in Chapter 9, as well as UK and Euro-zone inflation, as will be addressed next. Indeed, another crude initial observation is that taking all four areas around the globe together, fiscal stimulus even may be negatively related to inflation.

Living Long with the King of Threadneedle Street

Mervyn King, despite humble origins, had so much innate ability that he quickly ascended England's social hierarchy. He started out as an academic, sharing an office with Ben Bernanke when both taught at MIT in the early 1980s. He was appointed chief economist of the Bank of England (BOE) in 1991, becoming deputy governor in 1998 and governor five years later.[12] He served in that capacity until June 2013. By then he had been knighted by the Queen, which took place in 2011.

Governor King in 1994 characterized his policy as inflation targeting, "The use of an inflation target does not mean that there is no intermediate target. Rather the intermediate target is the expected level of inflation at some future date chosen to allow for the lag between changes in interest rates and the resulting changes in inflation. In practice, we use a forecasting horizon of two years."[13] Charles Goodhart conducted research that estimated that the Bank of England, after it started inflation targeting in 1992 but before it switched in 1998 to assuming that its policy setting would follow the path implied by forward interest rates, acted as if it had done so to the letter.[14]

Under Governor King's tutelage, a scenario involving quantitative easing similar to the United States played out in the United Kingdom from March 5, 2009, to May 31, 2010. Charles Bean, deputy governor for monetary policy and member of the Monetary Policy Committee (MPC), wrote in August:

> The initial responses in the United Kingdom to these measures have been moderately encouraging. Government bond yields fell significantly on the commencement of the programme of asset purchases, and yields appear to be some 50–75 basis points lower than they would otherwise be. And there are also signs of beneficial effects on conditions in the relevant corporate credit markets. Meier (2009) provides a full assessment. But it is very early to draw conclusions on the efficiency of these measures, as the transmission lags to nominal spending are likely to be long. Moreover, even in some years' time, it will still be difficult to draw conclusions, as the counterfactual is bound to be uncertain. But it will certainly provide fertile grounds for future PhD theses.[15]

Despite Bean's caveats, on September 19, 2011, the news broke that a central bank staff study of quantitative easing in the United Kingdom had indeed found appreciable effects:

> The Bank of England's purchase of £200 billion ($316 billion) of assets in 2009 and early 2010 may have increased the U.K.'s gross domestic product by 1.5% to 2% and boosted inflation by as much as 1.5 percentage points, new analysis by the central bank shows.
>
> An analysis of the BOE's program of quantitative easing in the bank's quarterly bulletin concluded it had an effect equivalent to a cut in the bank's benchmark rate of between 1.5 and three percentage points.[16]

The BOE study did leave that impression, attributing a decline in the long-term gilt rate of from 100 to 125 basis points to the announcements related to the Bank of England's program of government security purchases. Only a careful reader of Table B would have discerned that the *yield* on 10-year gilts (misleadingly called the "asset price" in that table's title) actually *rose* on balance by 30 basis points from March 4, 2009 to May 31, 2010, no doubt partly reflecting the wearing off of announcement effects.[17] The paper, though, merely asserted the following:

> But comparing their levels at the end of May 2010 to where they were before the start of QE suggests little net change at most maturities. However, net changes over the period are unlikely to provide a good measure of the overall impact of QE on gilt yields, given the amount of other news there has been over the period, including on the likely scale of future gilt issuance by the UK Government.[18]

In September 2011 Adam Posen, an independent member of the Monetary Policy Committee of the Bank of England before being appointed president of the Peterson Institute for International Economics beginning January 1, 2013, cast his twelfth consecutive dissent for more QE. Finally, on October 6, 2011, the BOE took his advice to implement more QE of its own, enlarging the size of its Asset Purchase Facility Fund.[19] The Bank of International Settlements released that December a supportive study of the experience with asset purchases in England and the United States. "[W]e estimate that the lasting reduction in bond supply via central bank asset purchases lowered government bond yields significantly. The effect is largely similar."[20]

Still, its additional rounds of quantitative easing evidently couldn't offset fiscal austerity. British statisticians announced in late April 2012 that the country in the first quarter had entered a double-dip recession, which was to last two more quarters. In a perverse but predictable public reaction, debate erupted over whether such central bank action should be extended rather than suspended as had previously seemed imminent. Undeterred by evident ineffectiveness, the BOE augmented its asset purchases in July 2012 to reach a total of £375 billion or a quarter of nominal GDP. Still, the economy, after a brief recovery, again took a nosedive in the fourth quarter.

In March 2013, UK Chancellor of the Exchequer George Osborne softened the government's instruction to the BOE to conduct inflation targeting in light of the current weakness in production as well as a five-year string of frequent upside inflation misses.

> The new remit permits the BOE to allow inflation to stray from its 2% target if the economy is in trouble, provided the MPC clearly sets out the arguments for doing so and how quickly it intends to get inflation back to target.
>
> More significantly, the new mandate gives the MPC the power to deploy whatever tools and policies it sees fit to meet its inflation objective, including policies aimed at easing the flow of credit to the private sector, and making use of Fed-style guidance on the future path of interest rates and the size and pace of its efforts to stimulate growth through bond purchases.[21]

Governor King and two other members of the MPC voted to resume quantitative easing for the fifth consecutive time at his final meeting in June 2013, but six others voted nay. In that light, his remark was surprising in a previous interview with a former student published on the same day in April that new statistics indicated that meager UK expansion in the first quarter had narrowly avoided a triple-dip recession. "In a remarkable admission for a central banker, he said events have shown that 'purely monetary stimulus will not be enough … Monetary policy is pushing on a string. It has some effect but less than we might have thought.'"[22]

Mark Carney replaced the retiring Mervin King on July 1, the first foreigner to head the Bank of England. As the former Governor of the Bank of Canada, in 2009 he had introduced forward guidance in the form of an explicit mid-2010 date for anticipated continued ease. (In the event, the Bank of Canada was surprised by economic strengthening and began an earlier firming in June of that year.) Chancellor of the Exchequer George Osborne in March 2013 had directed the BOE to assess the introduction of forward guidance in the United Kingdom. The MPC planned to announce its conclusions on August 7. But as early as the July 4 meeting, the MPC stated that the recent "rise in the expected future path of Bank Rate was not warranted." That judgment came in the context of the MPC's unanimous vote to maintain the Bank Rate at 0.5 percent while again refraining from conducting additional quantitative easing by keeping the level of its asset purchases the same.[23]

According to *Bloomberg*, "The MPC's statement was a response to a jump in bond yields sparked by Federal Reserve Chairman Ben S. Bernanke's June 19 comments on the timing for unwinding QE in the United States. The increase represented an 'unwelcome tightening in monetary conditions' that could scupper the recovery, the BOE said."[24] At its August 7 meeting, the Monetary Policy Committee fully adopted prevailing American-style forward guidance. It did so by giving a threshold for firming of 7 percent for the unemployment rate compared with the prevailing 7.8 percent, so long as financial stability continued and inflation expectations and projected inflation stayed low enough even if remaining above the 2 percent objective. The relevance of that latter condition soon evaporated, as core consumer inflation from a year earlier receded more in December 2013 to only 1.7 percent relative to the 2 percent goal for the overall CPI, even though the unemployment rate dropped to 7.1 percent in the three months to November.

That specific 12-month rate of core consumer inflation at the end of 2013 in the United Kingdom can hardly be considered a surprise in light of the surrounding economic conditions and the theory of inflation presented in Chapter 5 of this book. Let's assume that my own crude estimate of the late-2013 unemployment gap (the natural rate minus the reported rate) were to persist at 0.625 percent. (That figure is one half of the midpoint of the BOE's February 2014 estimate of a 1.0 percent to 1.5 percent output gap having a 1.25 percent midpoint.) With that assumption, that country's core inflation rate forecasted by the model presented in this book in continued quasi-equilibrium can readily be shown to be 2 – 0.5 (0.625) or 1.7 percent, matching the reported value just mentioned.

"Super Mario" Reliving Shuddering Over There

Core European countries were less than fully successful in making further national bailouts conditional on fiscal discipline and repeal of unsustainable welfare laws. A currency crisis erupted in Europe in 2010 despite the incomplete fulfillment of those austerity measures. But other forces were at work. American money market funds retreated from their funding of European banks. Even with softening activity, financial regulators decided that raising mandates for bank capital backing assets with differential risk weights favoring sovereign debt would be a peachy idea. Many banks in response stiffened lending standards, which further repressed spending. Then Greece partially defaulted on its supposedly riskless debt.

Still, by the autumn of 2011 the economic situation in the Euro-zone was viewed as salvageable without having the central bank venture further into the uncharted territory of sovereign lending, at least in the mind of one influential person:

> At his inaugural press conference as ECB President on November 3, [2011,] Mario Draghi was asked a pointed question by a journalist. "Are you prepared now to make a commitment that you will do whatever is necessary to keep the euro area in one piece,

> including—if necessary—becoming the lender of last resort to governments?" Draghi's response was instructive. "I have a question for you: what makes you think that the ECB becoming the lender of last resort for governments is what is needed to keep the euro area together? No, I do not think that this is really within the remit of the ECB. The remit of the ECB is maintaining price stability over the medium term."[25]

When Walter Bagehot analyzed the idea of the lender of last resort, he obviously was contemplating only central bank lending to private commercial banks, not to sovereign governments! But London's *The Economist*, whose views have evolved in the era since Bagehot edited the publication in order to bring the eternal truths up to date, took a contrary position:

> Can anything be done to avert disaster? The answer is still yes, but the scale of action needed is growing even as the time to act is running out. The only institution that can provide immediate relief is the ECB. As the lender of last resort, it must do more to save the banks by offering unlimited liquidity for longer duration against the broader range of collateral. Even if the ECB rejects this logic for governments—wrongly, in our view—large-scale bond-buying is surely now justified by the ECB's own narrow interpretation of prudent central banking. That is because much looser monetary policy is necessary to stave off recession and deflation in the euro zone. If the ECB is to fulfill its mandate for price stability, it must prevent prices falling. That means cutting short-term rates and embarking on "quantitative easing" (buying government bonds) on a large scale. And since conditions are tightest in the peripheral economies, the ECB will have to buy their bonds disproportionally.[26]

The magazine in effect was recommending a massive expansion of an earlier ECB bond-buying program that has been initiated in May 2010 by then ECB President Jean-Claude Trichet. Neil Irwin's excellent book covered the episode.[27] That spring, although Axel A. Weber, the head of Germany's Bundesbank, opposed the idea, the majority of the ECB's Governing Council approved buying sovereign debt of peripheral countries under the new "Securities Markets Programme." The ECB did undertake offsetting open market sales to sterilize the purchases and keep the monetary base unaffected. In February of the next year Weber resigned, choosing not to succeed Trichet. And after a majority of the ECB's Governing Council voted to buy Italian and Spanish debt in August 2011, Jurgen Stark, chief economist of the ECB, also resigned.

Yet despite *The Economist*'s advice, the ECB under its new President Mario Draghi actually reversed course. At his first press conference in early November 2011 he amplified the comments earlier in this chapter by insisting that ECB bond purchases would be "limited" and "temporary." The ECB stood its ground for some time on its new policy of no longer buying large amounts of sovereign debt through literal quantitative easing.[28] Finally, on December 8 the central bank instead announced a number of qualitatively (though not quantitatively) traditional easing steps to add liquidity to the Euro-zone that would amount to replacing credit in the faltering European interbank market with its own liquidity. In particular, the ECB indicated that it would conduct "Long-Term Refinancing Operations" that month and in March 2012 to make three-year loans to commercial banks in the form of repurchase agreements with liberalized collateral requirements. In the end it injected fully

€1 trillion, or $1.3 trillion. "[S]aid Carsten Brzeski, an economist at ING Bank in Brussels . . . '[T]he ECB does everything to be the lender of last resort for the economy and the financial sector but not for governments.' "[29]

But financial markets remained skeptical. To provide reassurance, on July 26 Draghi made a significant concession: "To the extent that the size of these sovereign premia hamper [sic] the functioning of the monetary policy transmission channel, they come within our mandate." But then he uttered a more portentous thought: "Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough."[30] That assertion sparked "a market rally amid hopes the bank would intervene to buy sovereign bonds."[31]

Exactly a week later, Draghi made good on his promise only in the sense that he made another promise, but his new expostulation turned out to be effective beyond his wildest dreams. Perhaps contributing to the promise's success, this time it had the concurrence of the ECB's Governing Council. That group averred that that under the right conditions large-scale central-bank purchases of sovereign securities would be possible. Under a new program called "Outright Monetary Transactions," it would buy government bonds with maturities of one to three years. But to qualify a Eurozone government would have to fully comply with an assistance program granted by an official European body. The ECB's new initiative, though not exercised until March 2015, much relieved the previous tensions in financial markets.

The relative calm persisted into 2013. Then in mid-March a group of European finance ministers demanded that Cyprus itself finance a third of another European Union bailout. The Eurogroup hit upon a dubious scheme that was supported by the IMF during the preliminary private negotiations, though it later tried to evade any culpability. The proposal was to finance that part of the required bank restructuring via new fees not only on large uninsured deposits but even on the insured deposits of unsuspecting little people. After the initial agreement, the IMF's Christine Legarde issued a shocking public statement that the plan "appropriately allocates the burden sharing."[32] Milton Friedman had blamed our country's Great Depression on the Fed, a government agency, which stood idly by in the early 1930s while the private sector caused a severe shrinkage of US deposits. That the honchos of European governments and international organizations intentionally had done as much must have made him turn over in his grave. President Draghi later seconded his opinion by calling the plan "not smart."[33]

After the entirely predictable outcry by Cyprus citizens, the nation's parliament unanimously rejected a slightly abridged proposal. But intransigent European officials still insisted that Cyprus cough up the same sum. So while insured depositors were spared in the end, large ones had to take a much more substantial hit. To forestall bank runs and transfers abroad, the government imposed withdrawal limits and capital controls with IMF support. Such restrictions, of course, were completely antithetical to the logic of the common currency union in which a Euro is equal everywhere and capital can flow unimpeded between member countries.

Now the reader gets a chance to "walk a mile" in a couple of different pairs of shoes. First try on those of a typical Cypriot. Don't you suddenly feel that the transfer of the capital of the two largest Cyprus banks to the tune of 25 percent of the island's national income to a Greek bank under the European Union's new policy in October 2011 of "private-sector involvement" in restructuring Greek government debt, which was supported by the then-reigning Cypriot Communist Party ideologically desirous of punishing local banks, had been completely unjust?[34] Don't you also think that the big country bullies more recently had shown unforgivable disrespect to your elected president in private negotiations? Don't you believe that they then were unfair to uninsured depositors, which local as well as zone-wide politicos previously had insisted were inviolable? But even at the cost of undercutting their own self-interest by putting the future of the original Euro-zone in further jeopardy, the bullies for spite ruined your country's profitable status as an attractive tax haven, in which deposit inflows from abroad had enlarged your banking system to almost seven times the size of national income. How can the expropriation of large deposits in Cyprus by European finance ministers really represent the actions of bureaucrats seriously interested in establishing a uniform banking union? And now, despite a heralded so-called "bail-in," you have just lost your job in a financial sector that will never be the same again! Don't you suddenly feel that "all hope is gone?"

At this point slip on another pair of shoes, this set made in Berlin. Aren't you suddenly suffering from "bailout fatigue?" Don't you think your taxes have gone to undergird corrupt economic systems in the countries of the periphery—and to no lasting economic purpose? And hasn't your generosity in Cyprus amounting to a €9 billion infusion of your tax funds, with another €1 billion grant from the IMF, been greeted only with resentment? Haven't you had it up to here with Cyprus taking advantage of capital mobility in the Euro-zone to attract the ill-gotten gains of foreign tax evasion on the part of shady, even criminal, foreigners, importantly including Russian oligarchs? Is it your fault that Cyprus banks lost their shirts by investing the proceeds of those capital inflows in completely unsafe Greek government securities, following the misguided risk incentives put in place by the European banking regulators themselves? Didn't that keen observer from across the English Channel long ago advise that in a panic a central bank should lend freely at a high rate only to solvent, but temporally illiquid, banks? Didn't he recommend letting clearly insolvent banks simply go belly up, implying that their uninsured depositors and creditors would lose much of their invested funds? Wouldn't all those uninsured Cypriot depositors be a lot worse off if that sound advice had been heeded? So why shouldn't the uninsured Cypriot depositors join senior debt holders in financing the liquidation of one and recapitalization of another of their own domestic banks?

Once the dust had settled, President Draghi introduced forward guidance on the same day that the BOE did so under Governor Carney. At his press conference on July 4, 2013, he pledged to maintain existing or lower key ECB interest rates for "an extended period."[35] That was the same qualitative phrase that the FOMC had used in its statements for more than two years starting in March 2009. It is ironic that, as with the BOE, the step was prompted by the rise in domestic interest rates induced by Bernanke's remarks on tapering. Notice that in President Draghi's judgment, the ECB was better advised to offer only vague, qualitative guidance, as opposed to adopting the quantitative guideposts of the Fed and later the BOE under newly installed Governor Carney.[36]

Even during the previous relative calm in financial markets, the average Euro-zone citizen (Call him Pierre Wine Bottle) continued to experience worsening economic conditions. Euro-zone income slipped 1/2 percent over 2012, including a decline of about 1 percent in the fourth quarter on average, with the periphery countries much worse off. The recession continued through the first quarter, extending the drop in output to six quarters. And while the average unemployment rate in the Euro-zone had risen to 12 percent, some southern countries had more than one-quarter of the labor force out of work, with youth unemployment twice as bad.

A mild upturn began in the second quarter of 2013. But the first week of October witnessed another worrisome downward revision to the European Commission's output forecast for 2014. Also, 12-month core consumer inflation in October fell from 1.5 percent a year earlier to only 0.8 percent—equal its record low of early 2010 and way below the goal just short of 2 percent. In early November, the ECB reacted by moving sooner than predicted by halving its benchmark refinancing rate to 0.25 percent. But even with the easing, the record unemployment in the Euro-zone implied that core consumer inflation only around 1 percent seemed probable.

To see why, consider the illustrative figure of a 1.95 percent inflation target. At Jackson Hole in August 2014, President Draghi cited an average estimate of the European Commission, the OECD, and the IMF for structural unemployment in the Euro-area in 2013 of 10.3 percent.[37] Further posit that the actual Euro-zone unemployment rate would persist indefinitely at its 12.2 percent preliminary reading for September 2013 as perceived at the time of the ECB's November easing. The European Commission projected it to stay there on average during the next year.[38] The above formula for quasi-equilibrium then yields 1.95 – 0.5 (12.2 –10.3) or 1.95 – 0.95 or core consumer inflation of 1.0 percent. Through December 2013, actual 12-month core inflation in Euro-zone registered a rate of 0.8 percent, while the unemployment rate slipped to 12 percent.

These outcomes were not merely cyclical but signaled that the underlying challenges to the currency union still remained insufficiently addressed. (Indeed, it remains to be seen whether the ECB's actions, though so far effectively addressing the sovereign debt crisis in the near term, can forestall indefinitely the breakup of the original Euro-zone.) The economic torpor in the single-currency area, which was created in 1999 for the political purpose of pacifying the continent, owed to the inevitable operation of the following innate structural economic flaws:

1. Absent a fiscal union, budgetary profligacy on the part of some governments, which was dishonest in the case of Greece, often had led to extravagant spending;
2. Mitigating official fiscal benchmarks in peripheral countries often were missed and delayed, partly due to unexpectedly deep recessions;
3. The dependent citizenry long before had become accustomed to "bread and circuses;"
4. Regulatory overkill, especially in the periphery, had created a sclerotic economy with inadequate individual freedom of action;[39]
5. No peripheral member could stimulate its economy by having its national central bank set a relatively low overnight interest rate but had to accept the common monetary policy established by the ECB;
6. No such country could become more competitive through a depreciation of its national exchange rate relative to the Euro but instead had to undertake the wrenching task of internal deflation;

7. A single currency is only appropriate for an "optimum currency area" in which internal immigration to relieve labor-market imbalances can occur readily without engendering a social backlash; and
8. Political incentives in crisis management have remained national rather than European.[40]

After the sovereign debt crisis erupted in 2010, European authorities attempted to address budgetary profligacy, but the resultant fiscal conditionality often was violated and postponed. Also, the initiative for a fiscal union encountered roadblocks.[41] But, as shown in Table 13.1, the European Commission still could report in February 2014 that the zone's 2009 primary government deficit, which excludes interest expenditure and one-time payments, of 3.5 percent of GDP was completely closed by 2013. Even so, the gross debt-to-GDP ratio in the Euro-zone continued to mount through the end of that year, though an appreciable slowing in the gain was in train for 2014.[42] The commission foresaw an imminent decline in the following year. Time will tell whether that anticipated reduction in the debt to GDP ratio in 2015 actually will come true.

President Draghi accurately diagnosed the first four sources of these eight problems:

> He said Europe's vaunted social model—which places a premium on job security and generous safety nets—is "already gone," citing high youth unemployment; in Spain, it tops 50%.
>
> He urged overhauls to boost job creation for young people.
>
> There are no quick fixes to Europe's problems, he said . . . He argued instead that continuing economic shocks would force countries into structural changes in labor markets and other aspects of the economy, to return to long-term prosperity.
>
> "You know there was a time when [economist] Rudi Dornbusch used to say that Europeans are so rich they can afford to pay everybody for not working. That's gone."
>
> Mr. Draghi argued that austerity, coupled with structural change, is the only option for economic renewal. While government spending cuts hurt activity in the short run, he said, the negative effects can be offset through structural overhauls.[43]

But for political reasons he hardly could question the basic shared currency area, the enforced common monetary policy, or the most important, underlying source of its problem:

> The real cause, as long argued by Sir Mervyn King, Governor of the Bank of England, and now accepted by most leading economists, is a simple, old-fashioned balance of payments crisis. Europe has long been divided into surplus and deficit nations: those that manage to pay their way in the world and those that have to borrow and import from abroad to sustain their standard of living. But since the advent of the euro, these

Table 13.1 Euro-area Debt and Primary Deficit (Percent of GDP)

	Average/2004–2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
Gross Debt	69.0	79.9	85.6	87.9	92.6	95.5	95.9	95.4
Primary Balance	–1.1	3.5	3.4	1.1	0.6	0.1	–0.5	–0.6

Source: Allan Meltzer, *A History of the Federal Reserve, Volume 2, Book 1: 1951–1969* and *Book 2: 1970–1986,* The University of Chicago Press, 2003, pp. x, 1243, 1251, and 1252.

> imbalances have got very much worse. Normally, they would be corrected through the natural market mechanism of free-floating exchange rates. Deficit nations would devalue against surplus ones, bringing trade and capital flows back into balance. But in a monetary union, this cannot happen. In fact, the exact opposite has occurred. A low interest rate designed to help Germany deal with the costly aftermath of reunification encouraged a consumer and construction boom in the underdeveloped periphery. This in turn caused differences in prices, wages and industrial competitiveness to widen.[44]

Robert Samuelson's column in the *Washington Post* clearly identified the dilemma:

> Can anyone doubt that the euro's creation in 1999 was a huge blunder? The great lesson here is that bad ideas, once embraced, become entrenched. The euro was a monstrously bad idea from which there is no easy escape.[45]

The Euro-zone crisis had entered into public consciousness once the basic imbalances had become too acute to fester quietly. On top of everything else, labor costs in the periphery, especially Greece, began to grind lower because depreciation of individual national currencies wasn't possible. Wage and price deflation was drawn out and painful. The same debilitating adjustment had been enforced by the rules of the gold standard in the 1930s. The damaging process really got going in May 1931 after the failure of Credit-Anstalt, a Viennese commercial bank, whose demise induced a worldwide financial panic. That panic in turn transmogrified into a further disastrous drop of output and incomes in industrial countries. This outcome was artfully analyzed by John Maynard Keynes in 1936 in the *General Theory*, as well as by Milton Friedman and Anna Schwartz, Barry Eichengreen, and Ben Bernanke in later decades. The point is that pacifistic political motivations shouldn't simply ignore economic realities. Even so, Friedrich Hegel unfortunately got it right: "What experience and history teach is this—that nations and governments have never learned anything from history, or acted upon any lessons they might have drawn from it."[46]

After examining the main issues raised by Fed history, the concluding chapter then will examine how ivory-tower economists have done taking hold of the policy reins. Finally, we'll try to discern what it all means. But before doing so, the cheaper will sum up my own take on the last round of quantitative easing. To anticipate, the Fed's adopting QE3 in September 2012 reminded me of Oscar Wilde's quip, the second sentence of which originated with Samuel Johnson: "Marriage is the triumph of imagination over intelligence. Second marriage is the triumph of hope over experience."

CHAPTER 14

Concluding the Book

The financial crisis was underway when I got an email on March 30, 2009, suggesting that had I been in charge, the crisis would have been entirely avoided. I replied that day:

> Just for fun, I decided to analyze your comment . . . I, like Greenspan, but unlike Rubin and Summers, supported privatizing and opposed government policies toward Fannie Mae and Freddie Mac at the time (1990s until the middle of the last decade), though to no avail. But, like Greenspan, Bernanke, and Geithner, though unlike Yellen, in this decade I missed the sharp relaxation of standards for sub-prime and Alt-A housing loans and the disastrous consequences of massive securitization. Unlike Rubin, Summers, Geithner, and Greenspan, but like Volcker, I opposed at the time (1999) the relaxation of Glass-Steagall in Gramm-Leach-Bliley that allowed the merging of commercial and investment banking but still didn't give investment banks access to the Fed's discount window. Unlike Greenspan, Bernanke, Geithner, and Yellen, I opposed at the time the Fed's pre-commitment to low short rates after the summer of 2003 that contributed to the housing bubble, partly by keeping long rates down at first and then from rising when the Fed's tightening started in mid-2004. Unlike Paulson, Geithner, and Bernanke, but like Volcker, I opposed at the time (March 2008) the Fed's taking over $30 billion of Bear Stearns's assets so JPMorgan could buy it more safely. Later on (September 2008), that decision kept any private buyers from purchasing Lehman without, according to Paulson's dictum, government aid, and Lehman's resultant bankruptcy was the proximate, though not the ultimate, cause of the current crisis. I conclude that, had I been in charge all along, the crisis would have been reduced only by about one third! I am forced to admit that even my hypothetical influence is far smaller than I realized.

Examining Crucial Issues in Earlier Eras

These seven issues about past epochs are best summarized in a Q & A format:

Q: What really caused the Great Depression? Was it collapsing autonomous spending —as John Maynard Keynes contended? Or was it a flattening of money and later an outright decline—as Milton Friedman and Anna Schwartz asserted? Or was it due to an inordinate focus on borrowed reserves as a guide to the thrust of monetary policy—as Allan Meltzer claimed?

A: None of the above. The crucial monetary factors instead began with the Fed's policy restrictiveness instituted to restrain the boom in equity values that caused the near doubling of Treasury bill rates during the two years ending in the summer of 1929, in turn initiating the stock market crash. Of course, the Fed never should have tightened so much in the late 1920s. But taking that action as given, the Fed should have reacted to weakening money much earlier in the 1930s through a major initiative to buy up massive amounts of Treasury securities, thereby injecting loads of reserve funds, lowering the Treasury bill rate to zero, and bolstering overall spending before the depression got really bad. But it was too halting in its easing, simply as a policy judgment. The Fed's delay until February 1932 in buying enough assets to rapidly drive the Treasury bill rate to zero worsened the contraction.

Q: Could Fed policy actually have done something about the Great Depression as late as mid-1932—as Friedman and Schwartz and Meltzer contended?

A: No. Once Treasury bill rates hit the zero lower bound in June 1932, the Fed was correct to assert that tying to impart more monetary stimulus via further massive asset acquisition would have been tantamount to pushing on a string. The book offers several defenses of the impotence of large-scale asset purchases, some in the modern context elaborated below. They include the wearing off of immediate emotional or speculative impacts on the term premium in long-term interest rates, stock prices, and foreign exchange rates, the ineffectiveness in altering the other, expectations component on a lasting basis of sterilized intervention, operation twist, and quantitative easing in Japan, as well as the questionable theoretical standing of stimulus from elevation in the monetary base per se, adjustments to restore preferred habitats, and reductions in the term premium alone.

Q: Isn't it true that, as Milton Friedman contended, "Inflation is always and everywhere a monetary phenomenon"?

A: No. When the Fed ignores money in setting the funds rate, the stock of money is determined solely by the public's demand. Despite Friedman's claim, the Fed in that case doesn't fix a rock-solid money stock to which the economy must adjust. Instead, the Fed is victimized by gyrations in the public's desired holdings. The economy thus can find no monetary purchase, so no causal connection whatsoever runs from the money stock to prices, as opposed to an obvious causal connection in the opposite direction. The aphorism should be rephrased: "Sustained inflation is always and everywhere a monetary policy phenomenon."

Q: Chairman Greenspan maintained in mid-April 2011 that for the Congress not to raise the debt ceiling was unthinkable, and he implied that the Republican strategy of tying spending cuts to such a necessity is akin to threatening to commit suicide if you don't get your way. But wasn't a default on US debt only narrowly avoided in the mid-1990s? Doesn't that episode contradict the idea of absolutely no credit risk on Treasuries, which Greenspan had declared in mid-2010, noting the government's unlimited capacity to print money to repay its debt?

A: Yes and yes. The debt ceiling constraint itself could generate a government default on interest and principal. Or the Fed could refuse to buy new Treasury securities, contrary to his assumption. The mid-1990s debt-ceiling crisis arose with the suspension of federal debt issuance from mid-November 1995 through late March 1996 (when the Congress finally raised the limit). Along with the related government shutdown, it was instigated by House Speaker Newt Gingrich and House Majority Leader Dick Armey, though President Clinton arguably bore some culpability. Only astute maneuvering by Treasury Secretary Robert Rubin, with the moral support of Chairman Greenspan, avoided a default on federal debt, which preserved the low interest rates on Treasury securities remaining today. In the end, politicians did raise the debt ceiling, though if they had not, the Treasury still could have paid principal and interest on the debt. But this outcome nonetheless would have been terrible, because the Treasury would have had to default on many other obligations.

Q: Why did the Dow Jones Industrials drop 8 percent from May 10 to June 13, 2006? Stock values in emerging markets, which had gained 25 percent earlier in the year to reach an apex, lost the entire amount in less than six weeks. Commodity markets followed a similar pattern. Did that happen mainly because the FOMC immediately announced its own predilection for tightening the policy screws in a "data-dependent" context rather than limiting its statement to the trends in the economy and the associated risks? Didn't Chairman Bernanke later contend before the Congress that immediate announcements should be restricted in this latter way?

A: Yes and yes. At the FOMC's September 2003 meeting, Presidents Poole and Quinn took from my 2003 book on the history of FOMC communication that the FOMC made investors skittish when its immediate announcement foretold Fed firming. But the FOMC committed just this error in its first three immediate announcements in 2006 by hinting that it was inclined to tighten further depending on economic developments. Like a tiger just observed by the prey as ready to pounce, that posture made participants in financial markets understandably nervous about how each new data point would make the central bank more or less likely to spring into action. Greenspan himself created this problem because those statements started at Greenspan's last meeting and continued at Bernanke's first two meetings before he extricated himself.

Q: Doesn't the accelerationist view of inflation propounded by Milton Friedman and Edmund Phelps in the late 1960s imply that with unemployment above its natural rate, disinflation inevitably will turn into an ever worsening deflationary spiral?

A: Yes, and it held until around the mid-1990s in the United States, but not thereafter. The evidence for the United States starting in about 1996 forced a revision of that analysis. With the emergence of a stable long-run average for the core inflation rate, the public gradually recognized that the FOMC's objective was near 2 percent. Inflation expectations became better anchored to that goal, so the Fed's objective for consumer inflation joined lagged inflation in determining the publics' short-term expectation. At about the same time, the influence of the state of the economy began to exert a diminishing influence. More of an output or unemployment gap was needed to have the same effect in lowering inflation. Over an extended period of quasi-equilibrium, the rate of unemployment can remain persistently above its natural level because the economy's equilibrating forces are too weak to bring the two into equality. In the resulting sustained, though not fully permanent interval, the central bank's target in elevating inflation has just about offset the unemployment gap in reducing it. Such a rough balancing has kept inflation fairly stable, though stubbornly below the central bank's goal—a situation that would persist until after the resource gap were finally eliminated.

Q: Doesn't a more expansionary fiscal policy—with more government spending or lower taxes financed by borrowing—stimulate the economy?

A: Not necessarily. Above a certain tipping point, which has not yet been reached in the United States, fiscal stimulus financed by more debt has a progressively smaller positive impact on the economy's productive potential. When, relative to national income, net governmental debt held by the public rises further above a certain threshold, the growth of potential output would be retarded more and more. That measure of net debt came to include the Fed's holdings after the TARP law in October 2008 allowed interest payments on excess reserves. At least by early 2013 the Congressional Budget Office had adopted the correct measure, though without saying so explicitly. Of course, that threshold will vary by country, not triggered as long as investors have confidence that the government indeed will make good on its promise to repay its obligations without raising taxes by an exorbitant extent. But incentives to send capital abroad rather than investing in government securities or other domestic financial assets with returns subject to higher prospective taxes would mount as the ratio moves further above the threshold. The resulting ever-higher domestic interest rates after adjustment for expected inflation increasingly would retard the growth of potential output.

Entrusting Ivory-Tower Economists with Policymaking

In designing, implementing, and communicating monetary policy, the evidence can be interpreted as questioning whether it's a good idea to accede appreciable power to anyone solely with an ivory-tower mindset. One influential observer of Chairman Bernanke, Donald Kohn, who served as the Fed's vice chairman under Mr. Bernanke until 2010, put the reason persuasively:

> He came in as a brilliant academic—a very smart guy with a very deep background in monetary economics—but it was as an academic. And one of the things that necessarily happens to you when academic theory meets the real world is you become more aware of the limitations of the theory and the models and how you need to operate in the real world that may not function the way your models suggest that it should function.[1]

Now consider the sorry historical record encapsulating the influence of impractical ivory-tower economists who had not made an adequate transition by the time they became influential. In the late 1920s economists, including the Board's often misguided Adolph Miller, tragically advocated reining in equity prices, and look what happened. The New Economists in the Kennedy administration, such as Walter Heller, and in the Fed, such as Sherman Maisel, induced the inflation that brought Keynesian theory under a cloud until its temporary resuscitation under President Obama. Thomas Mayer concluded from interviews that members of the FOMC in the 1970s and 1980s did not think along the lines of the rational expectations revolution in the academy, which was practically dubious for labor and product markers, and many were even blissfully unaware of this strand of the literature.[2] But the same can't be said for Milton Friedman's monetarism, which proved to be a chimera. And he always exuded confidence in the correctness of his assessments. (Paul Samuelson once quipped that he wished he could be as sure of anything as Milton was of everything.) Subsequently, Lars Svensson, Ben Bernanke, Rick Mishkin, and Adam Posen pushed the questionable idea of inflation targeting, which because of its theoretical sub-optimality thankfully wasn't adopted in the United States.

From mid-2003 through 2005, the Fed followed the analytically sound but practically ill-timed advice of theorist Michael Woodford and Governor Ben Bernanke to pre-commit to protracted ease. That stance, designed to counter the remote threat of deflation, instead reinforced the developing housing bubble. To be sure, the use of explicit forward guidance starting in August 2011 to announce the Fed's anticipation of extended ease for a lengthening specific interval of time superseded by the thresholds was efficacious. By altering once-and-for-all investor expectations of the course of policy, the innovation of explicit forward guidance about likely ease did tend to lower long rates permanently, other things equal.

By contrast, the Fed's sequential forays into quantitative easing did not do so. Even so, the net benefits of implementing QE1 from November 2008 to March 2010 did seem to be positive in helping the economy. Evidently, QE1 had favorable repercussions on the functioning of the secondary market for mortgage-backed securities and a useful temporary psychological fillip on prices there and in markets for Treasury debt, corporate bonds, stocks, and foreign-exchange that were encouraged by Fed-induced market opinion.

But later, based on flawed academic-style research, Chairman Bernanke, Vice Chair Yellen, and San Francisco Fed President John Williams advocated massive quantitative easing. They envisioned meaningful nontraditional portfolio-balance effects involving preferred habitats for long rates in the simulations of the Board staff's econometric model that they cited to support a sense of the program's potency. The new programs began first with QE2 announced in November 2010 and culminated with the open-ended QE3 adopted in September 2012. As the Fed's new demand boosted prices, for a while speculators took profits selling from their accumulated stock of securities to satisfy it. But then the initial positive impacts in financial markets wore off, in part as the initial investor overreaction lapsed, especially once their sense of future Fed policy actions revised in the direction of firmer policy. The large backups in bond rates in the months after the formal announcements of the first, second, and third rounds of quantitative easing in our country suggest that the initial effect of the announcement was only temporary.

This phenomenon raises questions about the permanence, even with other things equal, of announcement effects in financial markets of such balance-sheet policies. Instead, for the predominant component involving expectations of the path of funds rate as opposed to the term premium, the long rate is a jump variable rather than a summation of other-things-equal effects. And, even where the other-things-equal assumption holds for the term premium component, the initial effects soon wore off as emotional and speculative forces dissipated. Also, based on the academic theory of rational expectations, despite its questionable practical applicability in labor and product markets, the Fed even bought into the idea that the announcement could directly and lastingly raise the inflation expectations that not only lower real long yields in financial markets but also that directly affect wage and price setting as well.

But the Fed's episodic programs for huge security purchases have not been nearly as effective a monetary stimulus as Chairman Bernanke claimed from March 2011 to August 2012.

The historical evidence about purchases of securities, as drawn from US experience in the interval from February through June 1932 and from swapping short-term for long-term debt during "operation twist" in 1961, also is discouraging. The BOJ's five-year program for quantitative easing that started in March 2001 did not prevent deflation. (To be sure, the self-imposed restrictions on long-term government securities kept the central bank's purchases concentrated on the shorter end.) Research has disproved that the analogous policy of sterilized intervention to alter relative private holdings of foreign exchange had lasting effects.

When Chairman Bernanke told the Congress that the use of quantitative-easing programs would depend on their "efficacy," I wondered at the time whether the sign on the effect would be positive or negative. Indeed, the poorer has been the economy's performance in recent years, the louder have been the calls from many Fed officials for more quantitative monetary stimulus. In the mid-July 2012 monetary policy hearing, Bernanke started routinely to use that word together with some combination of three others in his answers. He indicated that Committee members held a range of views about the program's efficacy, "side effects," "risks," and "costs."

Research conducted in 2012 found a rather short half-life on real bond rates of such balance-sheet programs and thus questioned their lasting effectiveness as a stimulatory tool. By June 2012, more surveyed economists expected "the Fed to take further action, even though most don't think such a move is warranted."[3] The Minutes of the July 31–August 1, 2012, meeting recounted the FOMC's promise to adopt another program of large-scale asset purchases. "Many members judged that additional monetary accommodation would likely be warranted fairly soon unless incoming information pointed to a substantial and sustainable strengthening in the pace of the economic recovery."[4] But the FOMC was victimized by the inapplicability in this instance of the Woodford-Bernanke policy of pre-committing the Committee. It was done in by the familiar Achilles heel of that approach, because new information raised additional questions about the best-laid plans of the policymakers. But in this case, that Achilles heel came into its own after only a couple of months. Research augmenting earlier negative findings that was released during that interval, ironically by Woodford himself as well as by Michael Kiley, supported my skeptical intuition, which has been presented at length in some earlier chapters of this book. That intuition warns that a new program of QE was unlikely to be very effective. But such analysis started to gain more widespread recognition only a little bit before Jackson Hole in 2012. Still, the chairman at Jackson Hole in August signaled that open-ended quantitative easing would come soon anyway.

True, I agreed with Chairman Bernanke's speech there that the program's eventual inflationary and exit costs were likely to be small. But I became ever more worried about the potential costs to Fed independence of political retribution, addressed in Chapter 12, not to mention my distress at the continued promulgation of a vastly exaggerated assessment of QE's benefits. And for decades I'd been defending strongly on economic grounds the dual mandate on the assumption of sensible monetary policy. Yet once the Fed made its unwarranted decision to adopt QE3 despite the new skeptical analysis, I had to consider the possibility that, unlike Paul Volcker, who was prompted to reiterate his criticism of the dual mandate, I was being naïve.

The Fed indeed adopted QE3 with MBS in September. In October 2012 new Governor Jeremy Stein drove another analytical nail in the coffin of QE3. He questioned the effect on investment demand of reductions in the term premium in long rates as opposed to declines in the expected path of the funds rate. But the FOMC still augmented QE3 with long-term Treasuries in December as if nothing had happened. Nevertheless, even with QE3, by the time of his March 2013 press conference, Bernanke suggested that equity prices didn't seem overvalued: "Profit increases have been substantial, and the relationship between stock prices and earnings is not particularly unusual at this point."[5] Despite claims to the contrary in some private-sector quarters, that phenomenon did not leave much scope for QE to have elevated stock prices for very long.

The PBS *NewsHour* featured a very illuminating interchange on December 18, 2013, between Stanford's John Taylor and David Wessel, who two weeks earlier elected to leave the *Wall Street Journal* to run the Hutchings Center at Brookings:

> *John Taylor*: You can just look at the data. You look at American history. You can see what works and what doesn't. This policy has not worked. I actually think that's why a lot of people want to get off of it. It's not so much that the economy looks better. It's this is an opportunity to get back to a more normal policy, like we had in the '80s and '90s, which worked very well.
>
> A lot of people had been skeptical about the QE. It's not just me. It's what we see when we look at the data.
>
> *David Wessel*: Well, I think that there was some doubt at the Fed among some people about whether it was really doing any good.
>
> I think, in response to John Taylor, they would say, the question isn't, are rates lower now than they were when they began QE3? The question is, what would rates have been had the Fed not had done this?[6]

Wessel himself shared the opinion of the supporters that, without the Fed's asset purchases, long rates otherwise would have remained meaningfully higher, so that QE has permanently lowered bond yields, other things equal.

But that idea is just what this book has taken pains to deny. The announcement of each new program may have caused a temporary bond-market rally that noticeably reduced the term premium component of long rates as the over-optimism of investors buoying asset prices was validated for a while by the weight on market yields of purchases by savvy speculators and then the Fed's purchases. But over time such effects have unwound fully on their own as markets have come to recognize that profit-taking opportunities would dry up with the end of the Fed's purchases. Figure 14.1 provides straightforward evidence by showing the 10-year nominal bond rate from 2007 through the end of tapering in October 2014 along with the major unorthodox Fed initiatives.[7] The clear visual impression is that the announcement effect of new QE programs on the Treasury's 10-year bond yield in fact soon unwound, which, as noted, might have been expected once investor overreactions and speculative opportunities dissipated.

When the taper ended, James Hamilton also examined the possible effect on the inflation expectations that produce real long-term interest rates when

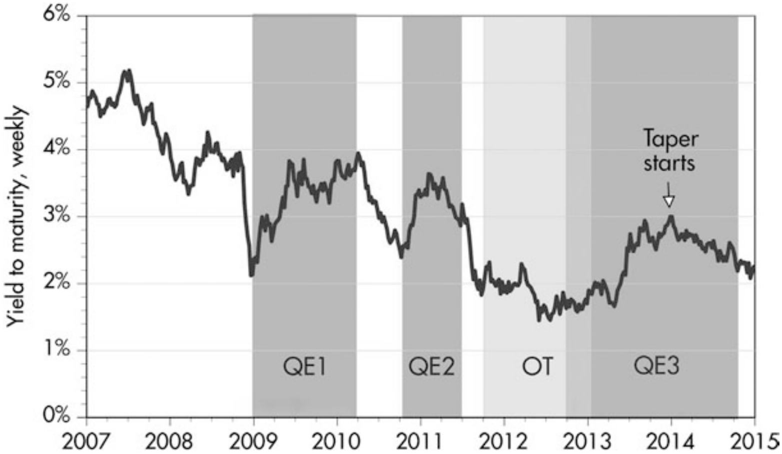


Figure 14.1 Ten-year Treasury Yield and Quantitative Easing

Source: Scott Grannis, "QE3 R.I.P.," *Calafia Beach Pundit*, October 29, 2014. See http://scottgrannis.blogspot.com/.

deducted from the relevant nominal yields.[8] His study described the results as follows:

> Possibly the large-scale asset purchases had effects through other mechanisms. One theory is that the Fed's asset purchases could have raised inflation expectations so that, even if the nominal interest rate rose, the real interest rate could still have been driven down. A quick measure of real rates is provided by the yield on 10-year Treasury Inflation Protected Securities. The tendency to rise during QE2 and 3 and to fall during the periods when the Fed did nothing is if anything even more dramatic in real yields than it was for nominal.

So I had to ask myself: Why had the FOMC taken this step of adopting QE3 anyway and with only one dissent to boot? Was the Committee, as suggested by Christina Romer in Chapter 5, displaying a theoretical mindset that made it insufficiently open to the weight of incoming factual evidence? Did the Fed feel it necessary to continue to defend—and to adopt additional policies consistent with—its previous advocacy and adoption of QE? Was the FOMC exemplifying the fact that people trained in the ivory tower alone become adept at assembling arguments supporting their earlier expressed views, whether right or wrong? Or had its necessarily lengthy and inertia-ridden decision making process been overtaken by faster-moving events, but too late in the day to stop an outcome that had become inexorable?[9]

In historical contrast, successful principals and senior staff at the Fed generally had adopted a much different posture. Chairman Martin, who came from the New York Stock Exchange, the Export-Import Bank, and the Treasury, was notoriously practical and non-theoretical; he often disavowed being an economist. The less-than-successful Chairman Burns, of course, was the exact opposite; with his experience at Columbia and the National Bureau of Economic Research, he considered himself according to his diary a superior economic theorist to any of his colleagues. Although Chairman Miller's experience was at Textron, he was a special case in monetary policymaking—strangely passive though personally dominant, strangely ideological though natively intelligent, and strangely ineffectual though adroit at wheeling and dealing in private-sector negotiations.

Chairman Volcker, from the New York Fed, Chase Manhattan Bank, and the Treasury, turned procrastination in decision making into an art form. He never crossed a bridge until he had to, which had the advantageous side-effect of always allowing the incorporation of the latest information. Also, he was a master at recognizing just how far he could push a previous policy position and when the time had come to change course. That is, he always knew "when to hold 'em, and when to fold 'em."

Chairman Greenspan, whose background was at the Conference Board, his own consulting firm, and the Council of Economic Advisers (CEA), was a business economist and forecaster by trade. After the early flap when he was CEA chairman over his articulation of sympathy for "Wall Street brokers," he never again shot from the hip. His reputation for being finely attuned to political realities was well deserved. In private he always showed the inclination to confront a succession of tentative hypotheses with all the newly arriving evidence. And the hypotheses always gave way when contradictory facts so warranted. (True enough, he typically didn't express second thoughts in public about any policy decision, even with the benefit of hindsight.) The practical experiences of Chairmen Martin, Volcker, and Greenspan outside of the academy in government and business seemed to have fostered their open-minded attitudes.

Nor were many of the Board's previous senior staff members, who were similar to those typical policymakers, inclined to defend uncritically academic-style research results. An exception was Daniel H. (Dan) Brill, who directed the Division of Research and Statistics and served as the FOMC's chief economist in the late 1960s. But the Keynesian-style economic projections that he oversaw considerably overestimated the fiscal impact of the 1968 tax surcharge. Absent Fed easing, the staff foresaw a significant hit to economic expansion. Instead, the Fed's ill-advised quarter-point discount rate cut was accompanied by economic overheating. Chairman Martin became frustrated with Brill's Keynesian-influenced stewardship of the staff's forecast, and in 1969 actually eased him out, according to a senior staff member who must, for obvious reasons, remain unnamed. By contrast, consider two people who Chairman Burns later elevated to the Board of Governors: Robert C. (Bob) Holland from mid-1973 to spring 1976 and J. Charles (Chuck) Partee from early 1976 to early 1986. Both served with distinction, but previously had spent careers as members of the Federal Reserve staff. Their thinking was not notably affected by purely academic analysis.

Stephen H. (Steve) Axilrod similarly was a career Board staff member. He was promoted to staff director for monetary policy in early 1976 under Burns and a couple of years later to staff director for monetary and financial policy to reflect additional international responsibilities under Miller. He also became FOMC secretary after 1983. Axilrod wielded considerable power over what research undergirded the monetary policy recommendations that came before the Board, the full Federal Open Market Committee, or certain of its subcommittees. As one example, during the deliberations of the Committee on the Directive chaired by Governor Holland in the mid-1970s, Jack Kalchbrenner and Peter Tinsley conducted path-breaking research on optimal control.[10] But Axilrod certainly prevented the research from coming before the policy makers in raw form, undiluted by any practical context. In the end, thanks to this responsible intermediation by very senior staff, monetary policymaking did not—as the impractical researchers possibly had envisaged—come to entail automatic model-based feedback from incoming data.

Another example concerns Axilrod's handling of the creative concept, but one flawed in its application, of monetary services indexes started by William Barnett in 1980 and continuing through his book in 2011. Warren Coats, assistant director of the Monetary and Financial Systems Department at the International Monetary Fund before he retired, wrote the following in a review of that book:

> The reason the Fed continues to rely on simple-sum aggregates (M1 and M2), though the Federal Reserve Bank of St Louis computes and publishes MSI1 and MSI2, is that it has carefully examined Barnett's index, as well as others, and failed to find them empirically superior.
>
> The primary study found that: "There is little clear improvement in terms of either demand equation or reduced form equation performance of the experimental monetary aggregates as compared to the conventional measures."[11]

The next senior staffer who comes to mind is Lyle E. Gramley, who started his career at the Kansas City Fed. When I interviewed for a job in early 1974 at the Board, he had just been promoted to director of the Division of Research and Statistics. He was a trusted confident of Chairman Burns. Gramley had a practical orientation, and in early 1977 President Carter nominated him to be a member of the Council of Economic Advisers. Gramley returned as a Carter-appointed Board member from May 1980 to September 1989, in which position he performed admirably.

Gramley was succeeded as director of research and statistics by James L. (Jim) Kichline. He was a savvy business economist, who was very articulate and had a ready laugh. But he always was as businesslike and no-nonsense in his decisions as his predecessor. Kichline retired in 1987 to join a bond house in Philadelphia, as had Axilrod the year before, in his case to take a position at Nikko Securities.[12]

Once the dust had settled by October 1987, Donald L. (Don) Kohn and Michael J. (Mike) Prell each had become a division director—of the newly formed monetary affairs and of the remaining parts of research and statistics. They stayed in those positions into 2001 and 2000, respectively. Kohn also was FOMC secretary into 2002 and Prell was FOMC economist into 2000. Meanwhile, Edwin M. (Ted) Truman had been director after 1977 and then staff director after 1987 of the Division of International Finance, along with being FOMC economist (international) after 1983, until he retired late 1998.[13] Kohn and Prell joined Truman in exercising the function of encouraging relevant staff research, just as Axilrod, Gramley, and Kichline had done during their tenures. At that time all three had experienced long careers at the Federal Reserve. Although all three were very competent, Kohn was particularly able, not only on monetary policy but on regulatory policy as well—so much so that several chairmen as well as FOMC members relied heavily on his counsel.

Despite being attentive to the wishes of the King (Alan Greenspan) and exercising authority over their fiefdoms benevolently, Kohn, Prell, and Truman governed with a velvet-clad iron fist. These directors well deserved the sobriquet "Barons." Alan Blinder, who was vice chairman under Greenspan for a year-and-a-half after June 1994, later expressed chagrin about their considerable influence.[14] In early 1996 Blinder and all three other Board members—Larry Lindsey, Susan Phillips, and Janet Yellen—met with Greenspan to complain about the senior staff's exclusionary practices in pursuing international contacts; furthermore, Blinder and Yellen bewailed the lack of any involvement in the process of making the staff-forecast sausage.[15] They were understandably more rueful for having missed out on the concrete personal informational gains than appreciative for having experienced the abstract greater staff objectivity that resulted from independence from the Board. From my vantage point, nothing really seemed to have changed thereafter.

President George W. Bush appointed Kohn to the Board in mid-2002 and elevated him further to the vice chairmanship in mid-2006. Kohn's ascension to the Board was great for the country but unfortunate from the perspective of staff influence. He necessarily brought his considerable capacity to sway policymakers along with him because of course he was unable to transmit it to the staff replacing him. The staff responsible for policymaking and communication never regained their earlier power. But Chairman Greenspan allowed that outcome to stand.

From this perspective things got even worse under the highly gifted but more academically oriented Chairman Bernanke. Especially given the growing roles played by all the governors and presidents in crafting both the typically three policy options discussed at each FOMC meeting and the Committee's public statements about the stance chosen, substantive staff input in these areas evidently has atrophied significantly further. Chairman Bernanke similarly oversaw such developments, and they wouldn't have happened without his acquiescence.

The bulk of staff research in my opinion also has undergone a transition from the predominantly practical orientation in my day to its current mostly scholarly character. For example, the research that I authored or co-authored generally provided conclusions that bore on current policy issues and were written in a way that would be comprehensible to a layman. I always believed that without practical intellectual support, monetary policy would find itself adrift. Additionally, staff research shouldn't ever move in the direction of the "apologetic" cast of the 1970s that defended rather than assessed objectively the Fed's monetary policies. (This earlier feature of "Fed-speak," though in part reflecting a correct anti-monetarist component, used to frustrate Milton Friedman no end under Burns and Miller according to his own writings, but I thought the apologetic element diminished under Chairmen Volcker and Greenspan to a de minimus level.)

Regulation of financial stability, which the Dodd-Frank Act and Basel III already have rendered excessively complex, apparently now also is ripe for the influence of sophisticated academic thinking. Governor Daniel K. Tarullo, former Professor of Law at Georgetown University Law Center, made the point explicit in the autumn of 2012:

> [T]he evolution of antitrust in recent decades was heavily influenced by the work of academics—specifically, law professors and industrial organization economists . . . The result was a cross-pollination of theoretical advances and institutionally grounded knowledge that is unusual, if not unique in regulatory areas. While it may be difficult to replicate this pattern in the nascent field of financial stability regulation, there is ample room—and need—for some version of this cross-pollination. Issues such as those I

> have discussed today can only profit from an academic perspective, informed by practical and institutional considerations.[16]

So owing to the ensuing shift of power away from practical senior staff and toward academically oriented policy makers, if Blinder were vice chairman today, he would be more likely to approve the diminished staff role than he said afterward that he was as second-in-command under Greenspan. But I contend that the Fed's performance under Chairman Bernanke worsened noticeably—and not coincidentally.

Fathoming What It All Means

Charles Goodhart repeated *verbatim* in his oral presentation the following sentence that Forrest Capie, Charles Goodhart, and Norbert Schnadt wrote in their paper for the Bank of England's Tercentenary Symposium:

> If the fundamental, evolutionary criterion of success is that an organization should reproduce and multiply over the world, and successively mutate to meet the emerging challenges of time, then central banks have been conspicuously successful.[17]

There he goes again with the biological analogies! But unlike Goodhart's evolutionary reference noted in the introduction, this time the comparison was appropriate.

In 1976, Lyle Gramley, my division director, asked me to phone Milton Friedman to ask him a question about the seasonal adjustment of money.[18] I vividly remember that in the course of the conversation he expressed the view that because of the critical importance of the identity of the Fed chairman, the president invariably will nominate a very distinguished person to fill the position. After being a bit taken aback to hear him make that claim, I decided that by and large he was right.

I don't know if Table 14.1 offers evidence on that question or not. It presents the record for inflation of each Fed chairman since the accord in 1951. It was devised by John Paulus—a PhD from Chicago's business school, my immediate boss at the time of the phone call to Friedman, and former senior financial economist at Goldman Sachs and chief economist at Morgan Stanley. The first column shows the average annual rate of inflation in the total CPI during each chairman's tenure, using geometric means rather than the arithmetic means in the next two columns. The second column gives that inflation rate during the first 12 months served, or inherited inflation, and the third column the rate during the final 12 months, legacy inflation. While Volcker's average inflation isn't much lower than Burns's (5.6 percent versus 6.4 percent), he inherited 12.9 percent inflation and left with inflation at 4.3 percent, while Burns inherited inflation of 5.0 percent and left with 6.8 percent inflation. Actually, given Chairman Miller's reading of 10.0 percent CPI inflation in the first year after Burns's departure, the case can be made that Burns's inflation legacy was considerably greater than 6.8 percent. Greenspan nudged average inflation down by more, while Bernanke managed to reduce it close to 2 percent.

Inflation slipped off in the last year under Bernanke to an excessively subdued rate. At the same time, much of the drop in unemployment under Bernanke resulted from unusual cyclical declines in the labor force, as the tepid economic recovery has hardly warranted the description "snapback." The CBO estimated that the output gap has diminished to 4 percent since the recovery began, despite disappointingly puny growth

Table 14.1 Inflation in the Total CPI under Federal Reserve Chairmen (Based on CPI-U, Monthly, Seasonally Adjusted)

Chairman	*Average**	*First Twelve Months: Inherited Inflation*	*Last Twelve Months: Legacy Inflation*
Martin (4/2/51–1/31/70)	2.1	2.3	6.2
Burns (2/1/70–1/31/78)	6.4	5.0	6.8
Miller (3/8/78–8/6/79)	11.3	10.0	11.8
Volcker (8/6/79–8/11/87)	5.6	12.9	4.3
Greenspan (8/11/87–1/31/06)	3.0	4.0	4.0
Bernanke (2/1/06–1/31/14)	2.1	2.4	1.6

Source: John Paulus, PhD.
*Uses geometric not arithmetic means.

in actual real GDP of 2.4 percent in those 4-1/2 years, because growth in potential output slowed to only a 1.5 percent rate. From 2014 through 2017, CBO foresaw potential growth climbing to 2.0 percent. Average calendar-year growth of real GDP at 3.15 percent will have virtually closed the output gap by the end of that interval.[19]

Such economic developments have had social consequences:

> [T]he weak economy is leading to deep societal changes. An entire generation is putting off the rituals of early adulthood: moving away, getting married, buying a home and having children. The marriage rate among young people, long in decline, fell even faster during the recession, and the birthrate for women in their early 20s fell to an all-time low in 2012. According to a recent Pew Research study, 56% of 18- to 24-year-olds lived with their parents in 2012, up from 51% in 2007—an increase that looks particularly dramatic because the share had changed little in the previous four decades.
>
> Moreover, many young people are losing hope of matching the prosperity of their parents' generation. Just 11% of employed young people in a recent Pew survey said they had a career as opposed to "just a job"; fewer than half said they were even on track for one.[20]

It won't do to blame these phenomena entirely on the extended aftereffects of the severe crisis in housing and other finance simply by citing Reinhart and Rogoff's important book.[21] After all, subsequent domestic policies also unquestionably have acted on their own to have forestalled a normal snapback requiring enlarged labor input. These initiatives include the heavy costs of full-time labor imposed on business by Obamacare, the oppressive new legal, regulatory, and supervisory costs directed at the financial sector, and the widening dependency associated with the ever rising reliance on disability, food stamp, and unemployment insurance payments.[22]

The federal government's unfunded entitlements remain the fundamental flaw in American democracy. The emergence of the Tea Party after Rick Santelli's rant on CNBC on February 19, 2009, and the Republican victories in the 2010 election seemed to signal that fiscal discipline might return, forestalling an ultimate default on US Treasury debt. But their misguided support for placing conditions on lifting the prevailing debt ceiling or even holding the line on the ceiling come hell or high water had the opposite effect. The foolhardy Republican strategy of linking a hike in the debt ceiling to Federal spending cuts caused close calls barely averting a debt-ceiling debacle in early August 2011 and again in mid-October 2013, when the government unfortunately shut down for more than one-half month. Ironically, the last time an electoral victory for the Republicans rocked the US political system, in 1994, a subsequent government shutdown interacted with the debt ceiling to cause a near default on federal debt.[23] Although the Federal Reserve cannot solve the long-term fiscal crisis on its own, obviously it should continue to defend the integrity of the Treasury in meeting all its obligations.

Despite President Obama's admirable fortitude in October 2013 in refusing to negotiate conditions for the necessary extension of the debt ceiling, we learned the hard way that a person with an academic mindset as president of the United States will not nurture debt relief nor cultivate economic performance. An editorial in *Investor's Business Daily* struck a factual note before reaching a critical subjective conclusion:

> Forty-seven percent of Americans now get some kind of government handout, 90 million are no longer actively seeking work and 40 million are on food stamps. The federal government is now $16 trillion in debt, and real median family incomes are on the decline.
>
> In short, we are on the verge of an epic downward shift in American prosperity. It's no accident, no bug in Obama's program. It's a feature.[24]

And as discussed more fully in Chapter 9, falling measured unemployment since its 10 percent peak in December 2009 partly has been artificial because discouraged workers have left the labor force in unusual numbers.

Masaaki Shirakawa, then Governor of the BOJ, struck a tone similar to the one Robert Samuelson sounded in Chapter 7:

> The goal of monetary policy is to achieve sustainable growth with price stability. This is a well-established principle that is shared in Japan, the United Kingdom and globally, regardless of whether an inflation targeting framework is adopted. The more successful the conduct of monetary policy is, however, the more stable prices become and the less volatility is seen in economic activity and financial markets. When the expectation prevails that a stable economic and financial environment will continue for a long period of time, it is likely to encourage leverage and maturity mismatches between the assets and liabilities of financial institutions . . . In that sense, I believe that in the conduct of monetary policy central banks also need to be attentive to the accumulation of financial imbalances.[25]

The financial and economic developments of 2007–09 and their aftermath surely have raised issues about financial imbalances. One relates to the Fed's response to the financial meltdown itself. Chapters 4 and 7 argued that the innovative lending programs instituted by Chairman Bernanke, mostly after the failure of Lehman Brothers, along with the recapitalization of commercial banks under TARP and temporary Treasury and FDIC guarantees, were successful. They did avert a financial panic of more substantial proportions and a resulting much severer hit to economic activity. Still, government assistance to JPMorgan Chase in its acquisition of Bear Stearns probably could have been avoided simply by suggesting a lower price per share in the initial negotiations. Such an alternative approach might have induced a private buyer of Lehman to have stepped forward.

Nonetheless, the more fundamental problem of the inflating and subsequent bursting of the housing bubble would have remained. So would the associated damage to financial institutions and enduring distortion of incentives for efficient resource allocation in housing, Indeed, the basic problem was prolonged by the Fed's mammoth purchases for a year after March 2009 of government-guaranteed mortgage-backed securities and of debt issued by housing agencies that were originally government sponsored, but by then government owned. And from this perspective, the resumption of those purchases in late summer of 2012 only made matters worse because it continued to depend upon an enduring government guarantee of MBS.

Under Bernanke the Fed continued the process of opening up its procedures for public scrutiny that began in the mid-1990s as Greenspan's second term as chairman was coming to a close. And it successfully used reforms in communication procedures that fostered forward guidance about policy ease to counter a spongy economic expansion by further reducing market expectations of the likely course of the funds rate. Only the passage of time until a firming in the funds rate itself is at hand will tell whether announcing specific rate projections of all Committee participants ultimately will unleash market volatility and political pressure. I would venture to say that is the case, but what do I know? Still, the volatility induced by Bernanke's May 2013 hearing and June press conference clarifying publicly the FOMC's conditional plans for tapering its asset purchases did not auger well in this regard.

In any event, in reaction to that episode, the FOMC seemed to have reached the end of the line on a streetcar named transparency. The surprising decisions in September 2013 to avoid tapering and in December to start tapering even suggested that the gears had been thrown into reverse.[26] In the second case the Fed also felt the need to cushion the tapering blow by extending the likely time of unusual ease in the funds rate. Unfortunately, both decisions also illustrate that from a public relations perspective no ideal way exists anymore for the Fed to justify firming its policy stance. Obviously discarded long ago was the view that only simple wording of policy statements—such as the "formulaic" language that the balance of risks was seen as weighted toward more inflation rather than economic weakness—can have a lasting impact because it can be assimilated and remembered. Instead, the FOMC's statement and Minutes have gotten ever wordier and hence virtually incomprehensible for the layman in a realistic time frame.

How could so many of the world's central banks so readily have adopted the erroneous view that large-scale asset purchases always would impart a large, lasting boost to asset prices and thus significantly stimulate the economy?[27] In the context of Western and Japanese criticisms of the failure of the Bank of Japan to lift the economy out of its doldrums at the zero bound, Masaaki Shirakawa only exacerbated the puzzle early in 2012. He assembled quotes from the very major central bank leaders who had introduced unorthodox policies in the first place. But they all attempted not to overstate the impacts of the programs:

Ben S. Bernanke, Chairman of the Federal Reserve Board, testimony at the Joint Economic Committee, US Congress, October 4, 2011: "Monetary policy can be a powerful tool, but it is not a panacea for the problems currently faced by the US economy."

Mario Draghi, President of the European Central Bank, interview with the *Financial Times*, December 14, 2011: "Monetary policy cannot do everything."

Sir Mervyn King, Governor of the Bank of England, press conference presenting the Inflation Report, November 16, 2011: "There's a limit to what monetary policy can hope to achieve."[28]

As Shirakawa had done more than nine months earlier, Bernanke presented a prepared public swan song in a speech to the American Economic Association on Friday, January 3, 2014.[29] He rightly hailed advances in the Fed's transparency and accountability. He recounted the Fed's imaginative efforts during the crisis that successfully restored financial stability and averted another Great Depression. He also correctly pointed out that the stress tests mandated by the Dodd-Frank Act were a fine regulatory addition, at least initially. He spoke approvingly of the advances in forward guidance that augmented the effectiveness of policy ease. He noted the preparations that have set the stage for future refinements in the operating framework. And he appropriately lauded Walter Bagehot and heaped praise on his colleagues, including those on the Board staff! The audience gave him a standing ovation.

Still, I couldn't help but think of my mother's admonitions that "If you can't say anything nice, don't say anything at all." Bernanke said nothing about governmental housing mandates, which earlier chapters contended were the basic source of the financial meltdown. He made no mention of the burdensome financial regulations created by the Dodd-Frank Act or the uncertainties surrounding disagreements among the financial regulators as contributing to the weak recovery. Also neglected were the numerous civil suits brought against large financial intuitions that have retarded lending. Obamacare got off scot-free as an influence impeding confidence and repressing full-time employment. Missing too were second thoughts induced by the FOMC's huge forecast errors after the crisis about the wisdom of "the extension by two years of the projection horizon" (p. 2). Far from expressing skepticism about the CBO's sizable estimate of the impact of fiscal restraint, he used it to imply that substantial labor-market improvement meaningfully owed to QE3.[30, 31] But in data a week later, another 35-year low in the labor-force participation rate that reduced the December unemployment rate to 6.7 percent was accompanied by meager job growth.

In contrast to my mother's admonition, the following one from Masaaki Shirakawa on March 24, 2012, had applied specifically to central banks. It contained considerable wisdom, although some of it may have been rather ironic in light of his apparently politically inspired authorization (subject to self-imposed limits) after the fall of 2010 of additional sequential QE:

> Good decision making and research supporting a central bank are the real foundation of its independence . . . We need . . . to break free from the habit of groupthink. It is essential to develop an institutional culture in which a variety of information vital to decision making in monetary policy—related to the macroeconomy and financial institutions—is fully utilized in a well-balanced manner.[32]

The Senate had voted on Yellen's confirmation three days after Bernanke gave his farewell address. Those Republicans still incensed by the Fed's unorthodox initiatives cast 26 nay votes. But she got 11 affirmative votes from members of that party to go along with the unanimous Democrats. The overall tally of 56 ayes exceeded the simple majority needed for confirmation, although the 20-vote margin was the thinnest in Fed history by 10 votes. Her term began on February 3, 2014.

No one could be better able to oversee the realization of Shirakawa's advice than Federal Reserve Chair Janet Yellen.

Notes

Chapter 1

1. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, p. 1. President Johnson's quotation is from his telephone call to Henry Fowler on December 5, 1965, in the tape library of the Lyndon B. Johnson Presidential Library, Austin, Texas.
2. Walter Bagehot, *Lombard Street: A Description of the Money Market* (1873), Greenbook Publications, LLC, 2010. Also see Hugh Rockoff, "Walter Bagehot and the Theory of Central Banking," in Forrest H. Capie and Geoffrey E. Wood, eds., *The Lender of Last Resort*, Routledge, 2007.
3. This last important point, with obvious implications for the contemporary "mark-to-market" controversy, is emphasized in Richard H. Timberlake, *Monetary Policy in the United States: An Intellectual and Institutional History*, The University of Chicago Press, 1978, 1993, p. 247.
4. Vera C. Smith, *The Rationale of Central Banking and the Free Banking Alternative*, Liberty Fund, 1990, p. 169.
5. Charles Goodhart, *The Evolution of Central Banks*, MIT Press, 1988. The first edition was issued in 1985 by the Suntory-Toyota International Center for Economics and Related Disciplines, The London School of Economics and Political Science.
6. Noam Chomsky, *Reflections on Language*, Pantheon, 1975, pp. 9–11; quoted in Stephen Pinker, *The Language Instinct: How the Mind Creates Language*, Perennial Classics, 2000, pp. 9–10.
7. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, p. 243. In August 2009 the FOMC Secretariat declassified the volume. In November 2012 the St. Louis Federal Reserve Bank made the document available on its FRASER document archive system at http://fraser.stlouisfed.org/docs/publications/books/20030624_lindsey_modhistfomc.pdf. It has been cited, for example, by Chairman Ben S. Bernanke in "A Century of Central Banking: Goals, Frameworks, and Accountability," his remarks at the "The First 100 Years of the Federal Reserve: The Policy Record, Lessons Learned, and Prospects for the Future," a conference sponsored by the National Bureau of Economic Research, Cambridge, Massachusetts, July 10, 2013. A revised version appeared in the *Journal of Economic Perspectives* 27, no. 4, Fall 2013.
8. For a more recent analysis of these issues, see Gary Gorton and Andrew Metrick, "The Federal Reserve and Panic Prevention: The Roles of Financial Regulation and Lender of Last Resort," *Journal of Economic Perspectives* 27, no. 4, Fall 2013. See as well

David E. Lindsey and Henry C. Wallach, "Monetary Policy," in John Eatwell, Murray Milgate, and Peter Newman, eds., *The New Palgrave: A Dictionary of Economics*, The Macmillan Press Limited, 1987.

9. Goodhart has continued to write about the history of central banking. See Forrest Capie, Charles Goodhart, and Norbert Schnadt, "The Development of Central Banking," in Forrest Capie, Charles Goodhart, Stanley Fischer, and Norbert Schnadt, eds., *The Future of Central Banking: The Tercentenary Symposium of the Bank of England*, Cambridge University Press, 1994, reprinted 1997. Also see C. A. E. Goodhart, "The Changing Role of Central Banks," Bank for International Settlements, *Working Papers, no. 326*, November 2010.
10. Vera C. Smith, *The Rationale of Central Banking and the Free Banking Alternative*, Liberty Fund, 1990; F. A. Hayek, *Denationalization of Money—The Argument Refined: An Analysis of the Theory and Practice of Concurrent Currencies*, 3rd ed., The Institute of Economic Analysis, 1990; and Laurence H. White, *Free Banking in Britain: Theory, Experience and Deba*te*, 1800–1845*, Cambridge University Press, 1984.
11. Ludwig von Mises, *The Theory of Money and Credit*, Yale University Press, 1953; Murray Rothbard, *What Has Government Done to Our Money*? New Revised Edition, Rampart College Publication, 1974; Ron Paul, *End the Fed*, 1st ebook ed., Grand Central Publishing, 2009.
12. Milton Friedman, *A Program for Monetary Stability*, Fordham University Press, 1959.
13. Allan H. Meltzer, "Limits of Short-Run Stabilization Policy," *Economic Inquiry*, 25, 1987, and Bennett T. McCallum "Robustness Properties of a Rule for Monetary Policy," *Carnegie-Rochester Conference Series of Public Policy*, 29, 1988.
14. An otherwise helpful speech about the trend toward more Federal Reserve transparency by then–Vice Chair Janet Yellen is marred by its neglect of the important role of the Fed's initial felt need to protect itself against political pressure to impart excessive monetary stimulus. See Vice Chair Janet L. Yellen, "Revolution and Evolution in Central Bank Communications," remarks at the Haas School of Business, University of California, Berkley, November 13, 2012.
15. For a survey of the literature, see Alan S. Blinder, Michael Ehrmann, Marcel Fratzscher, Jakob De Haan, and David-Jan Jansen, "Central Bank Communication and Monetary Policy: A Survey of Theory and Evidence," *Journal of Economic Literature* 46, no. 4, December 2008. For Chairman Bernanke's take on these issues, see Ben S. Bernanke, "Central Bank Independence, Transparency, and Accountability," at the Institute for Monetary and Economic Studies International Conference, Bank of Japan, Tokyo, Japan, May 25, 2010. The views on these issues of Athanasios Orphanides, now professor of the Practice of Global Economics and Management at the MIT Sloan School of Management and former senior adviser, Division of Monetary Affairs, Federal Reserve Board, when he was governor of the Central Bank of Cyprus and member of the governing council of the European Central Bank, appear in two of his speeches: "Central Bank Independence," October 21, 2008, and "Introductory Remarks on 'The Role of Statistics in Central Bank Communication,'" October 20, 2010.
16. E.S. Browning, "Fed Faces Old Foe as Hazard Returns," *Wall Street Journal*, August 29, 2011.
17. John Maynard Keynes, *A Treatise on Money, Volume II*, Macmillan, 1930; quoted in Athanasios Orphanides, "Drawing Lessons from Banking and Financial History for the Current Crisis," welcoming address at the 2009 Annual Conference of the European Association for Banking and Financial History, May 15, 2009, p. 2.
18. John Maynard Keynes, *The General Theory of Employment, Interest and Money*, 1936; Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States: 1867–1960,* A Study by the National Bureau of Economic Research, Princeton University Press, 1963; Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003.

19. In that interval, the Fed was "to embark on a massive program of open market operations, injecting a total of $1 billion of cash into banks . . . A similar measure in late 1930 or in 1931 might have changed the course of history. In 1932 it was like pushing on a string." (Liaquat Ahamed, *Lords of Finance: The Bankers Who Broke the World*, Penguin Books, 2009, p. 439.)
20. See Michael D. Bordo, Owen F. Humpage, and Anna J. Schwartz, "U.S. Foreign Exchange-Market Intervention during the Volcker-Greenspan Era," *NBER Working Paper Series, Working Paper 16345*, National Bureau of Economic Research, September 2010.
21. Frank James, "U.S. Is 'Best Looking Horse in the Glue Factory': Bowles," *It's All Politics: Political News from NPR*, December 1, 2010.
22. See *The First Bank of the United States: A Chapter in the History of Central Banking*, Federal Reserve Bank of Philadelphia, June 2009.
23. See *The Second Bank of the United States: A Chapter in the History of Central Banking*, Federal Reserve Bank of Philadelphia, December 2010.
24. The discussion of silver draws on Richard H. Timberlake, *Monetary Policy in the United States: An Intellectual and Institutional History*, The University of Chicago Press, 1978, 1993, pp. 166–183.
25. Elmus Wicker, "Banking Panics in the US: 1873–1933," *EH.Net Encyclopedia*, Robert Waples, ed., September 4, 2001.
26. Jeffrey A. Miron, "Financial Panics, the Seasonality of the Nominal Interest Rate, and the Founding of the Fed," *The American Economic Review*, March 1986, p. 132.
27. Michael D. Bordo and David C. Wheelock, "The Promise and Performance of the Federal Reserve as Lender of Last Resort 1914–1933," Federal Reserve Bank of Atlanta and Rutgers University, a paper prepared for the Federal Reserve Bank of Atlanta Conference Commemorating the 100th Anniversary of the Jekyll Island Conference, Jekyll Island, Georgia, November 5–6, 2010, p. 5, in Michael D. Bordo and William Roberds, eds., *The Origins, History, and Future of the Federal Reserve: A Return to Jekyll Island*, Cambridge University Press, 2013, pp. 63–64.
28. In a recent article Bernanke himself reviewed the salient features of the Federal Reserve's history. See Chairman Ben S. Bernanke, "A Century of U.S. Central Banking: Goals, Frameworks, Accountability," remarks at "The First 100 Years of the Federal Reserve: The Policy Record, Lessons Learned, and Prospects for the Future," a conference sponsored by the National Bureau of Economic Research, Cambridge, Massachusetts, July 10, 2013. A revised version appeared in *The Journal of Economic Perspectives* 27, no. 4, Fall 2013.

    For Federal Reserve sources related to the centennial see the Richmond Fed's website: http://www.federalreservehistory.org/; and the St. Louis Fed's website: www.fraser.stlouisfed.org. A ceremony in the board room to celebrate the centennial anniversary took place on December 16. The gathering, which was broadcast on C-span.org, was attended by current and previous Board members and Federal Reserve Bank presidents.

Part I

1. Roger T. Johnson, *Historical Beginnings . . . The Federal Reserve*, The Federal Reserve Bank of Boston, 1977, reprinted 1988, p. 5, quotation from Arthur S. Link, *Wilson: The New Freedom*, Princeton: Princeton University Press, 1956, p. 238.

Chapter 2

1. The discussion of the founding and early years of the Federal Reserve System draws on Michael D. Bordo, "Review of *A History of the Federal Reserve Volume 1* (2003) by Allan H. Meltzer," *Journal of Monetary Economics* 53, no. 3, April 2006; Sayre Ellen Dykes

and Michael A. Whitehouse, "The Establishment and Evolution of the Federal Reserve Board: 1913–23," *The Federal Reserve Bulletin*, April 1989; Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States: 1867–1960,* A Study by the National Bureau of Economic Research, Princeton University Press, 1963, pp. 189–239; Roger T. Johnson, *Historical Beginnings . . . The Federal Reserve*, The Federal Reserve Bank of Boston, 1977, reprinted 1988; Donald F. Kettl, *Leadership at the Fed*, Yale University Press, 1986, pp. 18–36; Richard H. Timberlake, *Monetary Policy in the United States: An Intellectual and Institutional History*, The University of Chicago Press, 1978, 1993, pp. 214–234; and Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003, pp. 65–135.

2. J. Alfred Broadus, "Central Banking—Then and Now," Federal Reserve Bank of Richmond, *Economic Quarterly* 79, no. 2, Spring 1993, pp. 4–5.
3. Abbreviated minutes of the open market committee were maintained, but only for internal use. (Robert D. Auerbach, *Deception and Abuse at the Fed: Henry B. Gonzales Battles Greenspan's Bank,* 2008, Amazonkindle, Location 2756.)
4. Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States: 1867–1960,* A Study by the National Bureau of Economic Research, Princeton University Press, 1963, p. 240.
5. Liaquat Ahamed, *Lords of Finance: The Bankers Who Broke the World*, Penguin Books, 2009, pp. 170–171.
6. Robert L. Hetzel, *The Monetary Policy of the Federal Reserve: A History*, Cambridge University Press, 2008, p. 16.
7. Barry Eichengreen, *Hall of Mirrors: The Great Depression, the Great Recession, and the Uses—and Misuses—of History*, Oxford University Press, 2015, p. 33.
8. Governor Frederic Mishkin characterized the human misery as "including lower living standards and increases in poverty as well as social pathologies such as loss of self-esteem, a higher incidence of divorce, increased rates of violent crime, and even suicide." Frederic S. Mishkin, "Monetary Policy and the Dual Mandate," speech at Bridgewater College, Bridgewater, Virginia, April 10, 2007.
9. John Maynard Keynes, *The General Theory of Employment, Interest and Money*, 1936, chapter 24 "Concluding Notes," pp. 383–384.
10. Milton Friedman, *A Program for Monetary Stability*, Fordham University Press, 1959.
11. Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States: 1867–1960,* A Study by the National Bureau of Economic Research, Princeton University Press, 1963, p. 419.
12. Robert Nozick, *Anarchy, State, and Utopia*, New York: Basic Books, Inc., 1974, pp. 18–24. Also see the papers in the "Invisible-Hand Theories" session of the Boston, Mass., meeting of the American Economic Association, January 3–5, 1994, especially Robert Nozick, "Invisible Hand Explanations," pp. 314–318, and Leda Cosmides and John Tooby, "Better than Rational: Evolutionary Psychology and the Invisible Hand," pp. 327–332, in *The American Economic Review: Papers and Proceedings*, May 1994.
13. Peter Temin, *Did Monetary Forces Cause the Great Depression?* W. W. Norton & Company, 1976.
14. Christina D. Romer, "A Financial Crisis Needn't Be a Noose," *New York Times*, December 17, 2011.
15. At the book-signing celebration for the publication of Meltzer's first book in 2003 at the American Enterprise Institute, Athanasios Orphanides spoke from the podium in praise of Meltzer's scholarship. Marvin Goodfriend, then a senior officer at the Richmond Fed but hired in 2005 by Carnegie Mellon to be Meltzer's colleague, addressed us as well. He too lauded Meltzer's accomplishment, though he also denounced the historical Fed for secretly keeping its monetary policy decisions "in the shadow." When it was time for audience participation, I piped up not only to add my congratulations but also to ask

if Goodfriend's comment implied that Meltzer co-founded the Shadow Open Market Committee to lobby the Fed to continue its secrecy! By the by, just out of graduate school in my first teaching job from the fall of 1968 to the spring of 1972, I was a colleague of Brunner's at The Ohio State University, where he was a distinguished professor of monetary economics. Also notable in that field, either then or later, were other members of the faculty: Ernst Baltensperger, Michael Darby, William Dewald, and Richard Porter.

16. Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003, p. 390.
17. W. Randolph Burgess, *The Reserve Banks and the Money Market*, Harper, 1927; and Winfield Riefler, *Money Rates and Money Markets in the United States*, Harper, 1930.
18. In about 1975 I heard a talk by Merritt Sherman, who by then had retired but who previously had become the Board's secretary under Chairman Martin and well before that had been employed by the Federal Reserve in the 1930s. He described from first-hand knowledge the Fed's frustrating experience in that decade with "pushing on a string," to use the phrase common at the Fed in the 1930s to denote the impotence of monetary policy at minimal values of short-term interest rates. At the time I thought that such an interpretation was dumb, but that was then and this is now.
19. Ben S. Bernanke, Vincent R. Reinhart, and Brian P. Sack, "Monetary Policy Alternatives at the Zero Bound: An Empirical Assessment," *Finance and Economics Discussion Series*, 2004-48, presented at the Brookings Panel on Economic Activity, September 9, 2004.
20. Allan H. Meltzer, *A History of the Federal Reserve: Volume 1: 1913–1951*, The University of Chicago Press, 2003, p. 167. These measures by themselves warrant Barry Eichengreen's earlier assessment, "The tightening of Federal Reserve policy in 1928-29 seems too modest to explain a drop in U.S. GNP between 1929 and 1930 at a rate twice as fast as typical for the first year of recession." (Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression 1919–1939*, Oxford University Press, 1995, p. 14.)
21. Treasury bill rates in real terms similarly ramped up, since on balance actual and predicted quarterly inflation both stayed near zero over this interval. (Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003, p. 258.)
22. On the gold standard's constraint on monetary policy, see Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression 1919–1939*, Oxford University Press, 1995, and, for a convincing contrary view, Charles W. Calomiris, "Volatile Times and Persistent Conceptual Errors: U.S. Monetary Policy 1914–1951," Federal Reserve Bank of Atlanta and Rutgers University, a paper prepared for the Federal Reserve Bank of Atlanta Conference Commemorating the 100th anniversary of the Jekyll Island Conference, Jekyll Island, Georgia, November 5–6, 2010, pp. 29–35, in Michael D. Bordo and William Roberds, eds., *The Origins, History, and Future of the Federal Reserve: A Return to Jekyll Island*, Cambridge University Press, 2013, pp. 166–218.
23. Ben S. Bernanke, *Essays on the Great Depression,* Princeton University Press, 2000.
24. But I would counter that by then the bill rate already was heading back to zero, restoring Fed policy impotence. Afterward at the lower bound, even when the Fed didn't sterilize gold inflows and permitted the monetary base to expand, monetary policy per se wasn't actually simulative, despite much dubious research for the period. Because such a rise hasn't mattered much under Chairman Bernanke, it must not have mattered appreciably then either. Instead, the economy recovered because of the stimulation from the implied devaluation of the dollar along with its natural restorative mechanisms when government policy stays out of the way.
25. Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003, p. 388.
26. Stephen M. Davidoff, "The End of the Beginning for Financial Reform," *New York Times DealBook*, May 21, 2010; "Not All on the Same Page," *The Economist*, July 1, 2010.

Chapter 3

1. Laurence H. Meyer, "Come with Me to the FOMC," Board of Governors of the Federal Reserve System, April 2, 1998.
2. The chart is taken from Deborah J. Danker and Matthew M. Luecke, "Background on FOMC Meeting Minutes," *The Federal Reserve Bulletin* 91, no. 2, Spring 2005, p. 176.
3. Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003, p. 497.
4. Walker F. Todd, "Summary of findings from visits to Gerald R. Ford Presidential Library, Ann Arbor, Michigan," memorandum to persons interested in FOMC transcripts, July 1, 1994, p. 1; Todd cites a statement made by Professor Richard Shiming, Mankato State University, on July 1, 1994, about this issue.
5. Michael D. Bordo, "Review of *A History of the Federal Reserve Volume 1* (2003) by Allan H. Meltzer," *Journal of Monetary Economics* 53, no. 3, April 2006, p. 652.
6. Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, The University of Chicago Press, 2003, p. 576.
7. Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States: 1867–1960,* A Study by the National Bureau of Economic Research, Princeton University Press, 1963, pp. 459–462. I am indebted to Allan Meltzer in a personal communication on August 17, 2011, for preventing me from following those authors into making the same interpretative error about the power of the 1936–37 hikes in required reserve ratios and for pointing me in the right direction.
8. The Board's decision in April 1938 to reduce reserve requirements took back only a quarter of the combined earlier increases.
9. Amity Shlaes, *The Forgotten Man,* 2007, Harper Perennial, 2008, Amazon Kindle locations 5667–73.
10. Amity Shlaes, *The Forgotten Man,* 2007, Harper Perennial, 2008, Amazon Kindle locations 5720–27.
11. See, for example, Charles W. Calomiris, "Volatile Times and Persistent Conceptual Errors: U.S. Monetary Policy 1914–1961," Federal Reserve Bank of Atlanta and Rutgers University, a paper prepared for the Federal Reserve Bank of Atlanta Conference Commemorating the 100th anniversary of the Jekyll Island Conference, Jekyll Island, Georgia, November 5–6, 2010, pp. 45–49, in Michael D. Bordo and William Roberds, eds., *The Origins, History, and Future of the Federal Reserve: A Return to Jekyll Island*, Cambridge University Press, 2013, pp. 166–218. Similarly, when the Board lowered to zero the required reserve ratio on non-personal time deposits and Euro-dollar liabilities in December 1997, it inadvertently moved aggregate required reserves plus frictional excess reserves below the sum of reserves desired to satisfy banks' clearing needs. For an insightful analysis, see James A. Clouse and Douglas W. Elmendorf, "Declining Required Reserves and the Volatility of the Federal Funds Rate," Board of Governors of the Federal Reserve System, *Finance and Economics Discussion Series*, *1997–30*.
12. Amity Shlaes, *The Forgotten Man,* 2007, Harper Perennial, 2008, Amazon Kindle locations 21–23.
13. Richard H. Timberlake, "The Tale of Another Chairman," Federal Reserve Bank of Minneapolis, *The Region*, p. 5.
14. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, p. 110.
15. William McChesney Martin, testimony to the U. S. Senate, Committee on Banking and Currency, *Nomination of William McChesney Martin, Jr.*, 84th Cong., 2nd sess., 1956, p. 5.
16. Both quotations are in Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, pp. 5 and 276.

17. William McChesney Martin, "Some Observations on Monetary Matters," June 25, 1965, p. 4.
18. Allan H. Meltzer, *A History of the Federal Reserve, Volume 2, Book 1, 1951–1969*, The University of Chicago Press, 2009, p. 491.
19. Edmund Burke, *Reflections on the Revolution in France*, 1790, in *The Writings and Speeches of Edmund Burke,* Volume 8, Little, Brown, & Co., 1901, pp. 126–127.
20. Allan H. Meltzer, "Origins of the Great Inflation," *Federal Reserve Bank of St. Louis Review*, March/April 2005, p. 154.
21. Binyamin Appelbaum, "Economic Stimulus as the Election Nears? It's Been Done Before," *New York Times,* September 11, 2012.
22. Stephen H. Axilrod, *Inside the Fed: Monetary Policy and Its Management, Martin through Greenspan to Bernanke*, MIT Press, 2009, pp. 24–25.
23. An informative narrative history of monetary policy under Martin appears in Athanasios Orphanides and John Williams, "Monetary Policy Mistakes and the Evolution of Inflation Expectations," in Michael D. Bordo and Athanasios Orphanides, eds., *The Great Inflation: The Rebirth of Modern Central Banking (National Bureau of Economic Research Conference Report)*, The University of Chicago Press, 2013, pp. 257–265.
24. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, p. 147.
25. Wyatt C. Wells, *Economist in an Uncertain World: Arthur F. Burns and the Federal Reserve, 1970–1978*, 1994, Columbia University Press: New York, p. 18.
26. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, p. 159.
27. Edward C. Ettin, "Financial and Economic Environment of the 1960's in relation to the U.S. Government Securities Market," *Joint Treasury-Federal Reserve Study of the U.S. Government Securities Market: Staff Studies—Part 2*, December 1971; Franco Modigliani and Richard C. Sutch, "Debt Management and the Term Structure of Interest Rates: An Empirical Analysis of Recent Experience," *Journal of Political Economy* 75, no. 4 (Supplement); and Eric T. Swanson, "Let's Twist Again: A High-Frequency Event-Study Analysis of Operation Twist and Its Implications for QE2," *Brookings Papers on Economic Activity,* Spring 2011.
28. Paul A. Samuelson and Robert M. Solow, "Analytical Aspects of Anti-Inflation Policy," *American Economic Review* 50, May 1960.
29. Nancy Beck Young, *Wright Patman: Populism, Liberalism & the American Dream*, Southern Methodist University Press, 2000, pp. 6–7; quotation from the transcript of the Representative Carter Manasco Oral History Interview, January 11, 1979, conducted by Charles T. Morrissey, 22, Former Members of Congress, Inc., LC.
30. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, p. 191.
31. Diane Werneke, "H. Con. Res. 133 and Monetary Policy and Subsequent Congressional Actions," memorandum to Don Winn, Board of Governors of the Federal Reserve System, September 1, 2000.
32. Henry S. Reuss, *When Government Was Good: Memories of a Life in Politics*, University of Wisconsin Press, 1999, p. 101.
33. Nancy Beck Young, *Wright Patman: Populism, Liberalism & the American Dream*, Southern Methodist University Press, 2000, p. 206; the quotation is from the *Congressional Record*, 90th Cong., 2nd sess., 10132; for information on the proposed impeachment, she cites a letter from Wright Patman to Robert M. Harris, April 25, 1968, in the Lyndon Baines Johnson Library, Austin, Texas.
34. Karl Brunner and Allan Meltzer, *The Federal Reserve's Attachment to the Free Reserve Concept*, House Committee on Banking and Currency: Washington, DC; reprinted in Karl Brunner and Allan Meltzer, eds., *Monetary Economics*, Blackwell, 1989.

35. Allan H. Meltzer, *A History of the Federal Reserve, Volume 2, Book 1, 1951–1969*, The University of Chicago Press, 2009, p. 82.
36. Incidentally, I think that the desire to avoid political pressure to lower longer-term interest rates also explains Chairman Martin's long-time advocacy of a "bills only" procedure for open market operations, despite the Fed's public rationale of developing "breath, depth, and resiliency" in the markets for Treasury notes and bonds.
37. Allan H. Meltzer, *A History of the Federal Reserve, Volume 2, Book 1, 1951–1969*, The University of Chicago Press, 2009, p. 379.
38. John T. Woolley, *Monetary Politics: The Federal Reserve and the Politics of Monetary Policy*, Cambridge University Press, 1984, p. 122.
39. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, p. 1; the quotation from Johnson is from a telephone call from Johnson to Fowler on December 5, 1965, in the tape library Lyndon B. Johnson Presidential Library, Austin, Texas.
40. Sherman J. Maisel, *Managing the Dollar: An Inside View by a Recent Governor of the Federal Reserve Board*, W. W. Norton & Co., 1973, p. 69.
41. Allan H. Meltzer made these points in "Origins of the Great Inflation," *Federal Reserve Bank of St. Louis Review*, March/April 2005, pp. 152–54.
42. Robert P. Bremner, *Chairman of the Fed: William McChesney Martin Jr. and the Creation of the Modern American Financial System*, Yale University Press, 2004, pp. 237–38.
43. William McChesney Martin Jr., Statement before the Joint Economic Committee, February 26, 1969, p. 2.
44. Andrew F. Brimmer, "Andrew Brimmer Remembers William McChesney Martin Jr.," *The Region,* Federal Reserve Bank of Minneapolis, September 1998, p. 2.

Chapter 4

1. "Modifications to the FOMC's Disclosure Procedures," January 19, 2000, p. 2; attachment to Press Release, Board of Governors of the Federal Reserve System, January 19, 2000.

Chapter 5

1. Alan Blinder, "Monetary Policy Today: Sixteen Questions and Twelve Answers," July 2006, p. 17.
2. In addition to these conventional forces affecting the natural real long rate, economists recently have focused attention on the central bank's role in what may be called a supplemental "credit channel," as one of its originators, Ben Bernanke, has dubbed it. It has two components: the loan demand of households and firms, as affected by their balance sheets, net worth, and cash flow, and the degree of risk taking in the loan supply of commercial banks and nonbank financial intermediaries. The latter set of institutions gained increasing importance in the lead-up to the recent financial turmoil.
3. Milton Friedman, "The Role of Monetary Policy," *American Economic Review* 58, March 1968 and Edmund S. Phelps," Money, Wage Dynamics and Labor Market Equilibrium," *Journal of Political Economy* 76, 1968.
4. These ranges are consistent with the estimates of the Board staff underlying the Greenbook forecasts; for data see the Philadelphia Fed's website, http://www.philadelphiafed.org/research-and-data/real-time-center/greenbook-data/nairu-data-set.cfm.
5. Minutes of the Federal Open Market Committee meeting, December 17–18, 2013, "Summary of Economic Projections," p. 1.

6. See, for example, Alan Blinder and Mark Zandi, "How the Great Recession Was Brought to an End," July 27, 2010, pp. 19, 22.
7. Minutes of the Federal Open Market Committee meeting, December 17–18, 2013, "Summary of Economic Projections," p. 1.
8. Dave Reifschneider, William L. Wascher, and David Wilcox, "Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy," paper presented at the IMF 14th Jacques Polak Annual Research Conference, November 7–8, 2013, Table 1.2, p. 63.
9. See Athanasios Orphanides, "The Quest for Prosperity without Inflation," *Journal of Monetary Economics* 50, 2003, Figure 8, p. 655.
10. John Williams, now president of the Federal Reserve Bank of San Francisco, noted that the sum of the estimated coefficients on lagged inflation rates in a standard Phillips equation has fallen well below unity as the start of the sample periods get closer to 1990. Indeed, my analysis was stimulated by his article (John C. Williams, "The Phillips Curve in an Era of Well-Anchored Inflation Expectations," unpublished working paper, Federal Reserve Bank of San Francisco, September 2006). Beyond the Williams article, related conclusions also have appeared in John M. Roberts, "Monetary Policy and Inflation Dynamics," *Finance and Economics Discussion Series*, 2004, and Robert J. Tetlow and Brian Ironside, "Real-time Model Uncertainty in the United States: The Fed from 1996–2003," *Finance and Economics Discussion Series*, 2006. However, contrary evidence on this point appears in Giorgio E. Primiceri, "Why Inflation Rose and Fell: Policymakers' Beliefs and U.S. Postwar Stabilization Policy," *The Quarterly Journal of Economics,* 121, August 2006. In February 2014, I ran across a prescient critique of the accelerationist Phillips curve along only somewhat similar lines in Janet L. Yellen and George A. Ackerlof, "Stabilization Policy: A Reconsideration," *Economic Inquiry* 44, no. 1, January 2006, pp. 8–17. In 2015 Chair Yellen provided econometric evidence that inflation expectations did indeed become anchored in the mid-1990s perhaps as a result of the Fed's previous persistent anti-inflationary posture. See Chair Janet Yellen, "Inflation Dynamics and Monetary Policy," Board of Governors of the Federal Reserve System, remarks at the Philip Gamble Memorial Lecture, University of Massachusetts, Amherst, September 24, 2015, pp. 12–13.
11. In February 2009 the FOMC finally released a central tendency for "longer run" consumer inflation (of 1.7 percent to 2.0 percent) that represented its explicit quantitative goal. In January 2012, the Fed announced a single-valued longer-run goal of 2 percent for inflation in consumer prices.
12. The partial adjustment of the inflation rate to the Fed's low goal even after closure of the output and unemployment gaps actually was a feature of the theory of "rational" or "model consistent" expectations that the bulk of the economics profession erroneously had accepted by the 1980s for wage or price setting in labor or product markets. The reason was that the public allegedly was savvy enough to grasp all the applicable economic relationships and to build into its inflation expectations the Fed's implicit "reaction function," including its low inflation goal even when actual inflation was well above it. The facts that inflation expectations actually were grounded in the reality of changes in prices that had to be experienced by the public and that until around the mid-1990s the Fed had to engender output and unemployment gaps in order to induce any systematic change in actual and expected inflation didn't make much of an impression on a profession mired in theory.
13. I tried to persuade William Poole, who subsequently became president of the St. Louis Federal Reserve Bank, of this view on a hike at Jackson Hole in 1990. The intellectual error that inflation expectations somehow have a direct effect on nominal long-term interest rates was most clearly expressed by William L. Silber, who described Volcker's disappointment not only in October 1979 but again during the spring of 1984 that the

Fed's elevation of short rates didn't induce a fall in bond yields through the direct channel of reduced inflation expectations in the minds of market participants. In the text of his book on Volcker, Silber wrote, "Tight monetary policy by a central bank that suppresses inflationary expectations should raise short-term rates but leave long-term rates almost unchanged." He amplified his point in a footnote: "The long-term rate might increase a little because long-term rates reflect the current and expected short-term rates, but that need not occur if inflationary expectations are reduced in the process." (William L. Silber, *Volcker: The Triumph of Persistence*, Bloomsbury Press, 2012, pp. 240, 404.) However, as this paragraph in the text has explained, such an outcome doesn't happen directly but can only occur indirectly when lowered inflation expectations, operating through the Fed's reaction function, reduce by enough market expectations of the future path of short-term rates. Despite seeming to propound this error, Silber did correctly point out that this same concept was adopted not only in the spring of 1984 by Governors Wallich and Gramley but also later by Allan Meltzer and Marvin Goodfriend. In Silber's same discussion, which continued on the next page of text, he further brilliantly demonstrated that even in the context of the erroneous theory, far from experiencing an "inflation scare" in the spring of 1984, to use Goodfriend's evocative term, the behavior of the gold price suggested that inflation expectations actually diminished over the period. Silber plausibly attributed the rise in bond yields to adverse fiscal developments in the form of a "deficit scare."

14. Edward Nelson suggested adding the second clarification in a personal communication on June 26, 2012.
15. In addition to the book you are reading, see Robert J. Samuelson, *The Great Inflation and Its Aftermath: The Past and Future of American Affluence*, Random House hardcover edition 2008, paperback edition, 2010.
16. Noted *Bloomberg* bond market columnist Caroline Baum wrote, "When I listen to academics and Federal Reserve policy makers talk about inflation expectations, seemingly imbuing them with a life of their own, it sounds like something out of a textbook that's suited for an econometric model. What a surprise to learn that it is!" Caroline Baum, "Only Fed Can Keep Inflation in Check," *Bloomberg Business*, March 20, 2011.
17. Christina Romer, "The Debate That's Muting the Fed's Response," *New York Times*, February 26, 2011.
18. John Taylor, "The Fed and the Crisis: A Reply to Ben Bernanke," *Wall Street Journal*, January 10, 2010.
19. Ironically, despite his current unpopularity within the Fed, had a Republican been elected president in 2012, Taylor may well have been appointed to the term as Fed chairman that started in February 2014, a time just beyond the purview of this book.
20. Milton Friedman, *A Program for Monetary Stability*, Fordham University Press, 1959.
21. William Poole, "Optimal Choice of Monetary Policy in a Simple Stochastic Macro Model," *Quarterly Journal of Economics* 84, May 1970.
22. Benjamin M. Friedman, "Targets, Instruments, and Indicators of Monetary Policy," *Journal of Monetary Economics* 1, October 1979.
23. John B. Taylor, "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy* 39, December 1993.
24. To be somewhat pedantic, the word "rule" is a misnomer, because all along Taylor made clear that he intended his proposed formula to represent only a guideline for policymakers. He always recommended that it would be subject to judgmental review and overthrow when circumstances required. He just wanted to make sure that policymaking was "systematic." He certainly did not intend to have policymaking dictated to by mindless computer software. The rationale for his more recent change of heart in support of a legislated rule, albeit subject to defended violation, which he has articulated in congressional testimony and public correspondence, is difficult to grasp.

25. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, Table 31, pp. 238–239.
26. Board of Governors of the Federal Reserve System, *Purposes and Functions*, June 2005, pp. 23–24.
27. The description, though, does not explicitly discuss the crucial issue addressed in my 2003 book of the appropriate weights to be put on projections of future economic conditions versus outcomes realized in the past (or current estimates of those outcomes)—that is, how forward-looking versus backward-looking the formula should be. Another unmentioned point that has been strongly emphasized by Athanasios Orphanides is that to be believable statistical estimates of Taylor rules must use only data available at the time that the funds rate target was set.
28. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, Table 31, pp. 238–239.
29. Chairman Ben S. Bernanke, "A Century of U.S. Central Banking: Goals, Frameworks, Accountability," *The Journal of Economic Perspectives* 27, no. 4, Fall 2013, p. 8.
30. Athanasius Orphanides, "Monetary Policy Rules and the Great Inflation," *The American Economic Review,* May 2002.
31. John B. Taylor, ed., "Introduction," *Monetary Policy Rules*, NBER—Business Cycle Series, Volume 31, The University of Chicago Press, 1999, Table 1, p. 6.
32. Athanasios Orphanides, "Monetary Policy Rules and the Great Inflation," *The American Economic Review,* May 2000, and David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, Table 31, pp. 238–9. Vice Chair Janet Yellen and FOMC Secretary William English have used these values for the real-side and inflation gaps. Yet in contrast to our estimates of a moderate weight on the lagged funds rate to capture policy inertia, Yellen assumed implicitly a zero value while English found explicitly a lot higher value than ours, partly because most policy after early 2003 was on automatic pilot. (Janet L. Yellen, "The Economic Outlook and Monetary Policy," speech at the Money Marketeers of New York University, April 11, 2012, and William B. English, David López-Salido, and Robert J. Tetlow, "The Federal Reserve's Framework for Monetary Policy—Recent Changes and New Questions," paper presented at the IMF 14th Jacques Polak Annual Research Conference, November 7–8, 2013, p. 45.)
33. Paul A. Volcker, "Can We Survive Prosperity?" Remarks before the Joint Meeting of the American Economic Association and the American Finance Association, San Francisco, December 28, 1983, p. 5.
34. Alan Greenspan, Statement before the Committee on Banking, Housing, and Urban Affairs, US Senate, July 13, 1988, p. 14.
35. Alan Greenspan, Statement before the Subcommittee on Economic Growth and Credit Formation of the Committee on Banking, Finance, and Urban Affairs, US House of Representatives, February 22, 1994, p. 5.
36. The base target instead could have been much more "activist," in other words, responsive to other business-cycle conditions like nominal income—though not "discretionary," since a strict formula would be followed—as later was proposed by Allan Meltzer (Allan H. Meltzer, "Limits of Short-Run Stabilization Policy," *Economic Inquiry* 25, 1987) and Bennett McCallum (Bennett T. McCallum, "Robustness Properties of a Rule for Monetary Policy," *Carnegie-Rochester Conference Series of Public Policy* 29, 1988). However, for a time in the early 1980s, Meltzer and the Shadow Open Market Committee at times advocated an operating and intermediate target path for the monetary base with a constant 6 percent growth rate.

37. I considered it quite telling in this regard that the Board staff's efforts in 1988 to use its quarterly econometric model to simulate the monetary-base rule proposed by Bennett McCallum (Bennett T. McCallum, "Robustness Properties of a Rule for Monetary Policy," *Carnegie-Rochester Conference Series of Public Policy* 29, 1988) were completely frustrated because of the interest insensitivity of the demand for the base in the model, even though the Board by then had restored contemporaneous reserve requirements. That interest inelasticity was in turn derived from the estimated properties of the components of the base: deposits weighted by reserve requirements, currency held by the public, and excess reserves. The simulation crashed because the implied short-term interest rates violated even the very wide zero to triple-digit constraints imposed in the model simulation exercise. This outcome told me that discretionary movements in the base of a sufficient size to match the recommendations of the rule were very hard to effectuate. We reported these negative results to McCallum at the time.
38. I met Rubin in the mid-1990s over cocktails before the dinner with the Treasury Borrowing Advisory Committee, composed of the royalty of Wall Street. Someone asked him whether, considering the present confidential gathering of fellow professionals, this wasn't an opportune time for him to express his real views on the value of the dollar. A long, pregnant pause ensued. Finally, he uttered this lengthy explanation: "A strong dollar is very much in the best interest of the United States." I encountered Summers over cocktails as well, but this time in Kiev in late May 1992 at a conference at the National Bank of Ukraine on introducing national currencies in Central and Eastern Europe. He then was vice president and chief economist of the World Bank. In his formal presentation without notes, I was struck by his facility of speaking extemporarily in a more articulate and organized fashion than I was able to write. Incidentally, before I left, I was in Chairman Greenspan's imposing office when I mentioned to him that "I'm off tomorrow to a conference in the Ukraine." He replied, "You don't need the article 'the.' Using it would be like saying 'I'm going on a visit to the France!'"
39. David Wessel, "Three Big Questions for Paulson to Tackle as Treasury Secretary," *Wall Street Journal*, Thursday, June 29, 2006.
40. William Poole, "Fed Communication," Federal Reserve Bank of St. Louis, *St. Louis Forum*, February 24, 2006, p. 10.

Part II

1. I got to know Bernanke on a personal level mainly in the Board cafeteria, where the senior staff normally ate lunch along with all the other hoi polloi. Other than former staffer Don Kohn, who ended up as the Board's vice chairman, most other governors rarely ate with us lowly staffers. But that certainly was not true of Bernanke. On several occasions, he joined Dick Porter and me at the lunch table. He struck me as a very considerate person when he said that, although he won the state spelling bee when he was a sixth grader in South Carolina, he didn't try out for it the next year in order to give someone else a chance.

Chapter 6

1. I came up with the title of this chapter several years before Governor Rick Perry admitted in the Republican presidential debate on November 9, 2011, that he couldn't remember the third government agency that he would eliminate.
2. Statement after the Federal Open Market Committee meeting, December 13, 2005.
3. Statement after the Federal Open Market Committee meeting, January 31, 2006.
4. Minutes of the Federal Open Market Committee meeting, January 31, 2006, p. 14.

5. Lynn Reaser, "Fed Suggests Its Future Decisions May Be Less Predictable," *New York Times*, February 22, 2006.
6. Chairman Ben S. Bernanke, testimony on the *Semiannual Monetary Policy Report to the Congress* before the Committee on Financial Services, US House of Representatives, February 15, 2006, p. 2.
7. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, pp. 217–8.
8. To be sure, my 2003 book suggested that those forecasts, not surprisingly, did come to help explain significantly the Committee's setting of the funds rate during most of the years of his tutelage. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, pp. 223–37.
9. But as a crucial caveat, the summary of a theoretical model in my 2003 internal history on communication has the central bank's current policy choice early in a year unable to affect that year's forecasts even though its funds rate setting is exclusively based on that year's projection. In that model, the central bank in setting the funds rate consults only forecasts of economic conditions for that year, which, given the lags in policy's effects, are too nearby in time for the current funds rate to affect. Still, in terms of social welfare, the central bank cares only about approaching its economic goals in the following year, but that subsequent year is too far away to forecast reliably. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, p. 204. In a different model, the summary by Lars Svensson and Michael Woodford of an "important general point" of one of their papers remains apt here too:

    > [T]he mere fact that the target variables are predetermined in the short run, and not able to be affected by current central bank decisions, does *not* imply that the only effective procedure must be a forward-looking one that aims to have a certain effect upon the future paths of the target variables. (Lars E. O. Svensson and Michael Woodford, "Implementing Optimal Policy through Inflation Forecast Targeting," in Ben S. Bernanke and Michael Woodford, editors, *The Inflation Targeting Debate*, National Bureau of Economic Research Studies in Income and Wealth, University of Chicago Press, paperback, 2006, p. 75.)

    Also, the statistical findings in my 2003 book show that uncertainties about the future forced the Fed after mid-1996 through at least early 2003 to up-weight current estimates of the economy and to down-weight forecasts so as to put virtually equal weight on each in policymaking. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, pp. 236–7.

10. See Nell Henderson and Neil Irwin, "Bernanke Says Economy's Expansion Is on Track," *Washington Post,* February 16, 2006.
11. The FOMC's implicit target for inflation had been near 2 percent prior to the fixes made by government statisticians in 2002 to biases in government price measures, especially the CPI. Before then, at the early July 1996 FOMC meeting Chairman Greenspan said, "Since we have all agreed on {an implicit inflation target} around 2 percent, my question is, what 2 percent?" (Transcript of the Federal Open Market Committee meeting, July 2–3, 1996, p. 63.) On the basis of the index either for personal consumption expenditures stripping out the effects of food and energy prices (core PCE) or the items in the GDP, the Committee by then was within striking distance of such a goal. But the intervening improvements evidently caused the bulk of the Committee members to adopt a

lower "comfort zone" of 1 to 2 percent. Some differences of opinion were expressed, even as gauged by the core PCE index. They ranged from 1 to 2 percent (Governor Bernanke and Presidents Yellen and Moscow) to 1 to 2-1/2 percent (Governor Gramlich) to 1 to 3 percent (President Santamaro) to zero "properly measured," that is, after allowing for measurement error, or about 1 percent as currently measured (President Poole).

12. Chairman Alan Greenspan, testimony before the Subcommittee on Domestic Monetary Policy of the Committee on Banking, Finance and Urban Affairs, US House of Representatives, October 25, 1989, p. 5.
13. Chairman Alan Greenspan's answer to a question from Senator Connie Mack, Committee on Banking, Housing, And Urban Affairs, United States Senate, One Hundred Fourth Congress, First Session, *On Oversight on the Monetary Policy Report to the Congress Pursuant to the Full Employment and Balanced Growth Act of 1978*, September 22, 1995, p. 17.
14. In the context of policymaking in the United Kingdom, Charles Goodhart has made a similar observation. See Charles A. E. Goodhart, "Monetary Transmission Lags and the Formulation of the Policy Decision on Interest Rates," *Federal Reserve Bank of St. Louis Review*, July/August 2001. The FOMC discussed the issue of its implicit inflation goal as late as February 2005, but once again deferred further discussion. To be sure, in February 2009 the FOMC did first announce its "longer run" inflation expectation for prices in personal conception expenditures—obviously its long run goal. It had settled on a central tendency of 1.7 to 2 percent. Then, in January 2012 it finally announced a 2 percent objective for that measure.
15. Ben S. Bernanke and Frederic S. Mishkin, "Inflation Targeting: A New Framework for Monetary Policy?" *Journal of Economic Perspectives* 11, no. 2, Spring 1997, abstract, p. 97.
16. Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen, *Inflation Targeting: Lessons from the International Experience*, Princeton University Press, 1999.
17. Ben S. Bernanke, Frederic S. Mishkin, and Adam S. Posen, *Wall Street Journal*, January 5, 2000.
18. Governor Ben S. Bernanke, "Constrained Discretion and Monetary Policy," remarks before the Money Marketeers of New York University, February 3, 2003, and Governor Ben S. Bernanke, "A Perspective on Inflation Targeting," remarks at the Annual Washington Policy Conference of the National Association of Business Economists, March 25, 2003.
19. Ben S. Bernanke and Michael Woodford, *The Inflation Targeting Debate*, National Bureau of Economic Research, The University of Chicago Press, 2006.
20. Ben S. Bernanke, Panel Discussion, "Remarks" at the 28th Annual Policy Conference: Inflation Targeting: Prospects and Problems, October 17, 2003.
21. Rich Miller, "Bernanke: Not Just a Greenspan Sequel," *BusinesWeekOnline*, November 16, 2005.
22. Chairman Ben S. Bernanke, testimony on the *Semiannual Monetary Policy Report to the Congress* before the Committee on Financial Services, US House of Representatives, February 15, 2006, p. 4.
23. *Semiannual Monetary Policy Report to the Congress,* February 15, 2006, pp. 2, 3, 4.
24. Minutes of the Federal Open Market Committee meeting, January 31, 2006, p. 9.
25. Minutes of the Federal Open Market Committee meeting, March 27–28, 2006, p. 8.
26. After Governor Laurence Meyer retired, his book "let the cat out of the bag" that the FOMC's policy decisions were "baked in the cake" in advance on the Monday before the Committee assembled in person, normally on Tuesday. (Laurence H. Meyer, *A Term at the Fed: An Insider's View,* HarperBusiness, 2004, pp. 50–51.)
27. Statement after the Federal Open Market Committee meeting, March 27–28, 2006.
28. Greg Ip, "As Markets Bet on Rate Increases, Fed Officials Seem Less Committed," *Wall Street Journal*, April 14, 2006.
29. Minutes of the Federal Open Market Committee meeting, March 27–28, 2006, p. 8.

30. Christopher Conkey and Michael M. Phillips, "Jump in Prices Stirs Rate Concerns," *Wall Street Journal*, April 20, 2006.
31. John Berry, "Bernanke Couldn't Be Clearer—You Hear That?" *Bloomberg Business*, May 3, 2006, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a86tvHqkplAo.
32. Greg Ip, "Fed Sought to Convince Markets of Its Own Uncertainty on Rates," *Wall Street Journal*, May 3, 2006.
33. Nell Henderson, "Fed Chief Calls His Remarks a Mistake," *Washington Post*, May 24, 2006.
34. Grace Wong, "Honeymoon over for Bernanke." CNNMoney.com, May 2, 2006.
35. John Berry, "Bernanke Couldn't Be Clearer—You Hear That?" *Bloomberg Business*, Wednesday, May 3, 2006, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a86tvHqkplAo
36. Nell Henderson, "Fed Chief Calls His Remarks a Mistake," *Washington Post*, May 24, 2006.
37. Greg Ip, "Fed Sought to Convince Markets of Its Own Uncertainty on Rates," *Wall Street Journal*, May 3, 2006.
38. Caroline Baum, "Treasury Market Gives Its Blessing to Fed Pause," *Bloomberg Business*, August 7, 2006, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aNmBrRZkdw08
39. Statement after the Federal Open Market Committee meeting, May 10, 2006.
40. Statement after the Federal Open Market Committee meeting, May 10, 2006.
41. Mark Whitehouse, "Inflation Data for April Spark Market Tumble," *Wall Street Journal*, May 18, 2006, p. A1. That measure is called "inflation compensation," which includes compensation for inflation risk as well as inflation expectations themselves.
42. David Wessel, "How Will Bernanke Ride the Storm of 2006?" *Wall Street Journal*, May 25, 2006.
43. Nell Henderson, "The Fed's Bright Idea: Bernanke Wants to Shed More Light on How Agency Sets Monetary Policy," *Washington Post*, March 28, 2006.
44. Nell Henderson, "When the Fed Speaks, You Say 'Huh'?" *Washington Post*, May 12, 2006.
45. William Safire, "Glutmanship," *New York Times*, April 23, 2006.
46. Nell Henderson, "Ben Bernanke: Tough Guy," *Washington Post*, June 7, 2006; and Edmund L. Andrews, "Bernanke Talks Tough on Inflation," *New York Times*, June 6, 2006.
47. Edmund L. Andrews, "A Modest Rise Still Amplifies Inflation Fears," *New York Times*, June 15, 2006.
48. The Associated Press, "Shares Fall For 2nd Day as Investors Ponder Fed," *New York Times*, June 7, 2006.
49. Brian S. Westbury, "Economic Rehab," *Wall Street Journal*, June 7, 2006.
50. Caroline Baum, "Traders Pine for Days of Greenspan Spoon Feeding," June 8, 2006, *Bloomberg Business.*
51. John Berry, "Fed Doesn't See Any New Inflationary 'Monster'," *Bloomberg Business*, Wednesday, June 14, 2006, http://www.bloomberg.com/apps/news?pid=newsarchive&refer=columnist_berry&sid=aAQkbnHRn1e8
52. William A. Niskanen, "Pause," *Wall Street Journal*, June 23, 2006.
53. Statement after the Federal Open Market Committee meeting, June 28–29, 2006. The wording seems to refer to that risk as it prevails at the moment given only past and current policy actions, so the influence of future policy choices seems to have been dropped. Good riddance!
54. Transcript of the Federal Open Market Committee meeting, June 28–29, 2003, p. 98.
55. Edmund L. Andrews, "Fed Raises Rates, but Scales Back Talk of Inflation," *New York Times*, June 30, 2006.

56. Jeannine Aversa, The Associated Press, "Decoding Fed's Statements Requires Experts," *New York Times*, July 2, 2006.
57. John B. Taylor, "Don't Talk the Talk," *Wall Street Journal*, July 13, 2006.
58. David Wessel, "A Yellen Fed Would See Tough Transition," *Wall Street Journal*, September 28, 2013.

Chapter 7

1. Statement after the Federal Open Market Committee meeting, August 8, 2006.
2. Ben S. Bernanke, Vincent R. Reinhart, and Brian P. Sack, "Monetary Policy Alternatives at the Zero Bound," *Finance and Economics Discussion Series*, *2004-48*, p. 12.
3. Governor Ben S. Bernanke, "An Unwelcome Fall in Inflation?", speech before the Economics Roundtable, University of California, San Diego, July 23, 2003.
4. John B. Taylor, *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis*, Hoover Institution Press, 2009.
5. Transcript of the Federal Open Market Committee meeting, June 24–25, 2003, p. 134; Reinhart was referring to Exhibit 3 of his handout. For simulation results of that equation over an earlier interval, see David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, pp. 234–5.
6. Statement after the Federal Open Market Committee meeting, August 12, 2003.
7. Statement after the Federal Open Market Committee meeting, January 27–28, 2004.
8. Statement after the Federal Open Market Committee meeting, May 4, 2004.
9. Statement after the Federal Open Market Committee meeting, June 29–30, 2004.
10. Matthew C. Klein, "The Fed Is Not a Clown Show," *Bloomberg Business*, October 9, 2013.
11. Transcript of the Federal Open Market Committee meeting, March 16, 2004, p. 34.
12. Transcript of the Federal Open Market Committee meeting, March 16, 2004, pp. 55–58.
13. Gretchen Morgenson and Joshua Rosner, *Reckless Endangerment: How Outsized Ambition, Greed, and Corruption Led to Economic Armageddon*, Times Books, 2011, pp. 116 and 248.
14. "[T]he broadly unanticipated behavior of world bond markets remains a conundrum." Alan Greenspan, testimony on the *Semiannual Monetary Policy Report to the Congress* before the Committee on Banking, Housing, and Urban Affairs, US Senate, February 16, 2005, p. 5.
15. Alan Greenspan, "The Crisis," The Brookings Institution, March 9, 2010, p. 39.
16. See Michael Woodford, "Central-Bank Communication and Policy Effectiveness," a paper presented at Federal Reserve Bank of Kansas City Symposium, "The Greenspan Era: Lessons for the Future," Jackson Hole, Wyoming, August 25–27, 2005.
17. Greg Ip and Deborah Solomon, "Fed Chief Says Global Factors Contributed to Home-Price Boom," *Wall Street Journal*, WSJ.com, September 24, 2007.
18. *The Economist,* "Special Report: Alan Greenspan," January 14, 2006.
19. Robert J. Samuelson, "Rethinking the Great Moderation," *The Wilson Quarterly*, Winter 2011, p. 22.
20. Robert J. Samuelson, *The Great Inflation and Its Aftermath: The Past and Future of American Affluence*, Random House, 2010, pp. xxi–xxii.
21. Ben S. Bernanke, "Causes of the Recent Financial Crisis," testimony before the Financial Crisis Inquiry Commission, September 2, 2010, p. 11.
22. Alan Greenspan, *The Age of Turbulence: Adventures in a New World*, Penguin Group (USA) Incorporated (paperback), 2008, p. 510.
23. Ben S. Bernanke, "Global Imbalances: Recent Developments and Prospects," September 11, 2007.
24. Ben S. Bernanke, "Monetary Policy and the Housing Bubble," delivered at the Annual Meeting of the American Economic Association, Atlanta, Georgia, January 3, 2010,

www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm. Bernanke's speech reported on funds-rate results in response to forecasts of inflation alone, which was an oddity, because simulations predicting the funds rate that rely on forecasts of both inflation and unemployment were available. They had appeared not only in obscure internal Fed sources (the original unpublished paper by Lindsey, Orphanides, and Wieland in 1997, cited just below, and Chapter VI of my book on communications in 2003, which was not declassified until August 2009. But the results of the approach also were readily available in public articles (Orphanides in 2002 and 2003 and Orphanides and Wieland in 2008). See David E. Lindsey, Athanasios Orphanides, and Volker Wieland, "Monetary Policy under Federal Reserve Chairmen Volcker and Greenspan: An Exercise in Description," Board of Governors of the Federal Reserve System, unpublished paper, February 1997, available at http://www.volkerwieland.com./docs/lindsey_orphanides_wieland.pdf; David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, available at http://www.federalreserve.gov/foia/files/20030624.History.FOMC.Communications.public.pdf; Athanasios Orphanides, "Monetary Policy Rules and the Great Inflation," *The American Economic Review* 92, no. 2, May 2002; Athanasios Orphanides, "The Quest for Prosperity without Inflation," *Journal of Monetary Economics*, 50, 2003; and Athanasios Orphanides and Volker Wieland, "Economic Projections and Rules of Thumb for Monetary Policy," *Federal Reserve Bank of St. Louis Review* 90, July/August 2008.

25. Jane Dokko, Brian Doyle, Michael T. Kiley, Jinill Kim, Shane Sherlund, Jae Sim, and Skander Van den Heuvel, "Monetary Policy and the Housing Bubble," Board of Governors of the Federal System, *Finance and Economics Discussion Series, 2009-49*, December 2009. Published as Jane Dokko, Brian Doyle, Michael T. Kiley, Jinill Kim, Shane Sherlund, Jae Sim, and Skander Van den Heuvel, "Monetary Policy and the Housing Bubble," *Economic Policy* 26, April 2011.
26. Ben S. Bernanke, "The Federal Reserve and the Financial Crisis: The Federal Reserve after World War II," Lecture 2, George Washington University School of Business, March 22, 2012. (In 2013 Bernanke collected his four lectures into a book, Ben S. Bernanke, *The Federal Reserve and the Financial Crisis,* Princeton University Press, 2013.)
27. Jane Dokko, Brian Doyle, Michael T. Kiley, Jinill Kim, Shane Sherlund, Jae Sim, and Skander Van den Heuvel, "Monetary Policy and the Housing Bubble," Board of Governors of the Federal System, *Finance and Economics Discussion Series, 2009-49*, December 2009, p. 23.
28. Transcript of the Federal Open Market Committee meeting, March 20–21, 2007, p. 25.
29. Chairman Ben S. Bernanke, Statement before the Joint Economic Committee, US Congress, March 28, 2007, p. 2.
30. Transcript of the Federal Open Market Committee meeting, June 20–21, 2007, p. 37. Cathy Minehan, retiring president of the Boston Fed, also cogently articulated the danger posed to financial stability by "the size of the credit derivatives market, its lack of transparency, and its activities related to subprime debt . . ." (p. 54.)
31. Statement after the Federal Open Market Committee meeting, August 7, 2007. Perhaps the Committee's hawks were concentrating too much on total as opposed to core inflation.
32. The action induced a 295 point drop in the Dow on that day. Given the recently released movie *300*, about the heroic Spartan forces at Thermopylae, I thought of the FOMC that day as the "Minus 300!"
33. Timothy F. Geithner, *Stress Test: Reflections on Financial Crises*, Crown Publications, 2014, pp. 142–3.
34. Paul A. Volcker, "Remarks to the Economic Club of New York," April 8, 2008, p. 2.
35. Greg Ip, "Bailout for Bear Stearns Questioned by Ex-Fed Staffer," *Wall Street Journal*, Tuesday, April 29, 2008. He later amplified his interpretation of the advent of the

meltdown in Vincent Reinhart, "A Year of Living Dangerously: The Management of the Financial Crisis in 2008," *Journal of Economic Perspectives* 25, no. 1, Winter 2011.

36. Timothy F. Geithner, *Stress Test: Reflections on Financial Crises*, Crown Publications, 2014, p. 175.
37. The fact that Lehman's creditors were awarded only 18 cents on a dollar of debt in bankruptcy proceedings as late as 2012 even after housing markets were recovering indicates just how insolvent Lehman had become upon its failure. (The Financial Crisis: Five Years Later, "What's Left of Lehman Brothers," *Bloomberg Businessweek*: *Global Economics,* September 12, 2013.)
38. Frances X. Diebold and David A. Skeel, "Geithner Is Overreaching on Regulatory Power," *Wall Street Journal*, March 27, 2009.
39. Roger Lowenstein, *The End of Wall Street*, Penguin Press, 2010, p. 164.
40. The assets taken over by the Fed that were previously owned by Bear Stearns and AIG or issued by AIG ultimately ended up on the balance sheets of three limited liability companies conceived by creative Fed lawyers to maintain the fiction that the central bank was lending funds not buying assets outright. The artificial entities assumed the name of a street adjacent to the New York Fed, Maiden Lane. The first Maiden Lane entity acquired about $30 billion of assets from Bear Stearns, Maiden Lane II acquired residential mortgage-backed securities from AIG, while Maiden Lane III acquired collateralized debt obligations from counterparties of AIG. The New York Fed itself was on the hook for lending to the Maiden Lane entities the funds necessary to finance those assets. (Ultimately, unlike the situation with TARP after properly accounting for the time value of money, the New York Fed escaped without suffering any losses whatsoever on the loans. The three Maiden Lane entities repaid the loans with interest on June 14, 2012; March 1, 2012; and June 14, 2012, respectively.)
41. Paulson's approach to the top nine commercial and investment banks closely resembled strong-arm tactics. Stanford's John Taylor reported in mid-2012 (John Taylor, "How Departures From Economic Freedom Can Affect Freedom In General," *Economics One: A Blog by John B. Taylor*, Monday, July 2, 2012):

> In a recent speech at Stanford . . . former Wells Fargo Chairman and CEO Dick Kovacevich told the full story of how he was forced to take TARP funds even though Wells Fargo did not need or want the funds. The forcing event took place in October 2008 at a now well-known meeting at the US Treasury with Hank Paulson, Ben Bernanke, as well as several other heads of major financial institutions.
>
> In his speech, Kovacevich first described how he and the other bankers were told at that meeting that they had to accept the funds. He then paused and said to the Stanford audience: "You might ask why didn't I just say no, and not accept TARP funds." He then explained: "As my comments were heading in that direction, Hank Paulson turned to Chairman Bernanke, who was sitting next to him and said 'Your primary regulator is sitting right here. If you refuse to accept these TARP funds, he will declare you capital deficient Monday morning.' This was being said when we were a triple A rated bank. 'Is this America?' I said to myself."

Jamie Dimon from JPMorgan Chase must have reacted similarly. He later told an interviewer, "Everyone is afraid of retaliation and retribution. We recently had an event with a hundred small bankers here, and 85 percent of them said they can't challenge the regulation because of the potential retribution. That's a terrible thing. Okay? This is not the Soviet Union. This is the United States of America. That's what I remember. Guess what? It's a *free. Fucking. Country.*" Jessica Pressler, "122 Minutes With Jamie Dimon: The JPMorgan Chase CEO is really, really, really sorry. Except when he's not," *New York,* August 12, 2012, p. 4, http://nymag.com/news/intelligencer/encounter/jamie-dimon-2012-8/

42. On May 1, 2013, President Obama nominated Watt to head the Federal Housing Finance Agency. But Senate Democrats couldn't stop a filibuster against his confirmation by Republicans. The opponents claimed that he had been too supportive of the government-sponsored enterprises (GSEs), and that his background was political whereas the law instead required technical expertise. Still, after the Senate voted in November to prevent a filibuster for certain nominations, he was confirmed on a simple majority vote.
43. Statements after the Federal Open Market Committee meetings, December 16, 2008, and March 17–18, 2009.
44. The Board staff originally had begun to understand the mechanics of auctions of central bank credit on technical assistance missions to countries of the former Soviet Union led by the IMF. For example, for a Workshop on Monetary Operations in St. Petersburg, Russia, in September 1994, I prepared a game involving the mock auction of national bank credit. Members of the Board staff participated in an entertaining practice round, won by Charlie Siegman of the Division of International Finance. The mock auction game was designed to teach central bankers from the former Soviet Union. After the completion of the needed research assistance by Matt Luecke and of the necessary preparation by my secretary Rivane Bowden, we sent the game materials to the IMF.
45. David Goldman, "Bernanke: Economic Weakness to Continue," CNNMoney.com, December 1, 2008.
46. The swaps were closed in February 2010 and re-opened three months later amid a squeeze in dollar funding due to the euro area sovereign debt crisis.
47. For useful overviews of these Fed initiatives, see Chairman Ben S. Bernanke, "The Crisis and the Policy Response," Stamp Lecture, London School of Economics, January 13, 2009, and Randall S. Kroszner and William Melick,"The Response of the Federal Reserve to the Recent Banking and Financial Crisis," December 2009.
48. Figure 7.1 is derived from 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.
49. John Hussman, "QE Isn't Adding Liquidity to the Market," *Business Insider*, February 28, 2011.
50. As a source of the recovery, one observer emphasized "the abandonment of mark-to-market accounting by the Financial Accounting Standards Board on March 16, 2009, in response to Congressional pressure by the House Committee on Financial Services on March 12, 2009. The change to the accounting rule FAS 157 removed the risk of widespread bank insolvency by eliminating the need for banks to make their losses transparent. No mark-to-market losses, no need for added capital, no need for regulatory intervention, receivership, or even bailouts." John P. Hussmann, "Did Monetary Policy Cause the Recovery?" *Weekly Market Comment*, October 21, 2013, p. 3. For a later extended analysis of the role of such procedures in the preceding meltdown, see Peter J. Wallison, *Hidden in Plain Sight: What Really Caused the World's Worst Financial Crisis and Why It Could Happen Again*, Encounter, 2015, Chapter 12, pp. 265–304.
51. Chairman Ben S. Bernanke, "The Effects of the Great Recession on Central Bank Doctrine and Practice," speech at the Federal Reserve Bank of Boston 56th Economic Conference, October 18, 2011, p. 5.
52. Robert Barone, "Awash in Liquidity, Part 2: The Long-Term Consequences of Falling Interest Rates," *Minyanville*, May 28, 2014.
53. Kate Kelly, *Street Fighters: The Last 72 Hours of Bear Stearns, the Toughest Firm on Wall Street*, Penguin Group, 2009, p. 198.

54. In his May 2014 book, Geithner informatively supplied more details of that conversation with Dimon:

> On Sunday morning, Dimon called back to say the deal was off. The problem, he said, was not the price. It was the potential losses in Bear's mortgage book. Nearly three-fourths of the assets were subprime or only slightly safer, and he wasn't prepared to take those on at any price.
>
> "There's just too much risk," he said. (Timothy F. Geithner, *Stress Test: Reflections on Financial Crises*, Crown Publications, 2014, pp. 153–4.)

But I don't think those words imply that Dimon in fact would have rejected a counteroffer of a $2 price per share for the whole company. Recall that Dimon, unlike Geithner, had been promoted to his current position partly because he had shown himself to have been an able and experienced negotiator; his quoted words couldn't have better justified a counteroffer from Geithner of a very much reduced price. And even if all of Bears's subprime-type loans had been valueless, contrary to the eventual fact, its other assets, including its physical property in Manhattan, likely would have been worth more than the expense to JPMorgan involved in paying a price of $2 per share.

55. David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, pp. 203–241.
56. Luca Di Leo and John Hilsenrath, "Fed Sees Low Rates to 2014: Central Bank Releases Policy Forecasts for Key Benchmark, Targets 2% Inflation," *Wall Street Journal*, January 26, 2012.
57. More recently, in light of continued unpredictable movements in the economy and stock prices, the theme of higher taxes on "millionaires and billionaires" adopted by the Obama administration, and the name of a movie starring Kermit the Frog, I informed Nam Shik that "It's not easy being a hedge-fund manager."
58. Benn Steil, "Why We Can't Believe the Fed," *Wall Street Journal*, February 22, 2012.
59. Because Bernanke tied his own outlook closely to the central tendencies of FOMC meeting participants, his forecasting record from mid-2009 through 2012 understandably ended up in the middle of the pack in Jon Hilsenrath and Kristina Peterson, "Fed 'Doves' Beat 'Hawks' in Economic Prognosticating," *Wall Street Journal,* July 29, 2013. In this regard, one can grasp why Chairmen Volcker and Greenspan avoided being associated personally with the shorter, but still less-than-reliable projections of FOMC participants.
60. Then the gesture to include the third year devolved into what Charles Lane in a different context called "the triumph of mindless 'full disclosure.'" Charles Lane, "A supreme distraction: the high court should remain free of TV cameras," *Washington Post*, March 20, 2012.

Chapter 8

1. Chairman Ben S. Bernanke, "The Economic Outlook and Monetary Policy," at the Federal Reserve Bank of Kansas City Economic Symposium, Jackson Hole, Wyoming, August 27, 2010, pp. 5–6.
2. Stephen H. Axilrod, personal telephone conversation, November 23, 2010.
3. John B. Taylor and Paul D. Ryan, "Refocus the Fed on Price Stability Instead of Bailing Out Fiscal Policy," Perspective, *Investors.com*, November 30, 2010. Of course, legislating a single goal obviously is inconsistent with the sensible specification in the Taylor rule itself of having the Fed set the funds rate in response to *two* variables—*an output gap* as well as an inflation objective.
4. Joseph Gagnon, Matthew Raskin, Julie Remach, and Brian Sack, "Large-Scale Asset Purchases by the Federal Reserve: Did They Work?" *Federal Reserve Bank of New York Staff*

Reports, no. 441, March 2010, pp. 17–18; the paper later was published in the *International Journal of Central Banking* 7, no.1, March 2011. The quotation appears there on pp. 20–21 and was only lightly edited in the published version.

5. Hess Chung, Jean-Phillipe Laforte, David Reifschneider, and John Williams, "Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events," *Working Paper 2011-01*, Federal Reserve Bank of San Francisco, January 2011, p. 32. Subsequent academic-style research for the United States alone has been voluminous; see the list later in this chapter.
6. Vice Chair Janet L. Yellen, "The Federal Reserve's Asset Purchase Program," speech at The Brimmer Policy Forum, Allied Social Science Associations Annual Meeting, Denver, Colorado, January 8, 2011; Vice Chair Janet L. Yellen, "Unconventional Monetary Policy and Central Bank Communications," speech at the University of Chicago Booth School of Business US Monetary Policy Forum, New York, New York, February 25, 2011; Chairman Ben S. Bernanke, testimony on the *Semiannual Monetary Policy Report to the Congress* before the Committee on Banking, Housing, and Urban Affairs, US Senate, Washington, DC, March 1, 2011; Chairman Ben S. Bernanke, testimony on the *Semiannual Monetary Policy Report to the Congress* before the Committee on Financial Services, US House of Representatives, Washington, DC, July 13, 2011.
7. Ezra Klein, "The Scary Version of Bernanke's Remarks," *Washington Post*, June 21, 2012. Gillian Tett previously had described his reference: "When Hank Paulson, then Treasury secretary, unveiled TARP back in 2008, he told colleagues he was looking for a "bazooka" to stun the markets and turn sentiment around." Gillian Tett, "America's six key lessons for a 'euro Tarp'," *Financial Times*, October 6, 2011, http://www.ft.com/cms/s/0/0a8aaeb0-f034-11e0-977b-00144feab49a.html#axzz3p32X1mnm.
8. Patrick Allen, "Have the Euro Zone Bears Got It Right?" *Business News—CNBC*, July 11, 2012, p. 2.
9. The funds-market lending especially of the Federal Home Loan Banks among the government sponsored enterprises, which are not permitted to earn interest on deposits at the Fed, puts downward pressure on the funds rate and forces one to make a caveat to this argument. Of course, if the actual rate falls short of the target, the Fed could just raise the target to compensate. Even so, the Fed later considered another way to circumvent this minor problem. "In the July minutes of the Fed meeting released Wednesday, officials discussed a proposal to introduce a so-called reverse repurchase program, which would let the Fed set an interest rate on securities it would sell at auctions as part of its open-market operations. Banks and other investors would then decide how much to buy." Carolyn Cui, "Fed Seeks More Control Over Rates," *Wall Street Journal*, August 22, 2012.
10. After I penned this thought, Alan Greenspan expressed a similar, though not identical, idea on *The Kudlow Report* on July 11, 2012. In the process of saying that the elevated excess reserves were simply lying fallow, he contended that suddenly eliminating them also would be without consequence. For a contrary view that decried the future rise in long-term interest resulting from the Fed's unwinding its bloated balance sheet, see Phil Gramm and John Taylor, "The Hidden Costs of Monetary Easing: Inflation is not the only danger posed by the central bank's ballooning balance sheet," *Wall Street Journal*, September 11, 2012. Of course, that concern implied that the advent of quantitative easing must have involved a significant lasting reduction in those interest rates and thus must have been effective, in opposition to the views of Greenspan and me.
11. In light of the backup in long rates in May and June 2013 surrounding the chairman's revelation of plans for "tapering" new asset purchases and the foreseeable adverse "optics" associated with any outright sales, Fed inaction in exiting seems inevitable because the recovery surely will remain mediocre. Also, underlying core inflation, which strips out movements in food and energy prices, should remain subdued at a rate well below the Fed's goal. (Chapter 9 will offer a novel hypothesis to explain this phenomenon.) That the

Minutes of the July 2013 FOMC meeting exposed its intended ultimate inaction regarding its MBS holdings accordingly was eminently explicable based on macroeconomic, if not microeconomic, concerns.

12. Statement after the Federal Open Market Committee meeting, August 9, 2011.
13. Neil Irwin, "Stocks Rally as Fed Pledges Low Rates for Two Years," *Washington Post*, August 10, 2011.
14. After I drafted this sentence, I ran across the same word "blanks" written a year earlier by John P. Hussman in "The Recklessness of Quantitative Easing," *Weekly Market Comment*, October 18, 2010, p. 4.
15. David Malpass, "The Fed 'Twist' That Won't Dance," *Wall Street Journal*, September 21, 2011. The study was Eric T. Swanson, "Let's Twist Again: A High-Frequency Event-Study Analysis of Operation Twist and Its Implications for QE2," *Brookings Papers on Economic Activity,* Spring 2011.
16. James Pethokoukis, "Twisting in the Wind: Ben Bernanke's diminishing returns," *Weekly Standard*, October 3, 2011.
17. Statement after the Federal Open Market Committee meeting, September 20–21, 2011.
18. Joshua Zumbrun and Scott Lanman, "Fed Signals It May Ease Policy Further Amid 'Significant' Risks to Outlook," *Bloomberg Business*, September 22, 2011.
19. FOMC participants would end up making downward revisions to the central tendency for real GDP growth over both 2012 and 2013 in seven of the first eight sessions with the press.
20. Neil Irwin, "Fed Sees Weaker Economic Growth: Central bank expects joblessness to stay high, takes no new actions," *Washington Post*, November 3, 2011.
21. Transcript of Chairman Bernanke's Press Conference, June 20, 2012, p. 20.
22. Mark Gertler and Peter Karadi, "QE 1 vs. 2 vs. 3 . . . A Framework for Analyzing Large-Scale Asset Purchases as a Monetary Policy Tool," a paper prepared for "Central Banking: Before, During, and After the Crisis," a conference sponsored by the Federal Reserve Board and the *International Journal of Central Banking*, March 23–24, 2012.
23. At this point in my oration, the session's moderator, San Francisco Fed President John Williams, asked me to indeed keep my challenge brief. But how could I? I was on a roll!
24. Michael D. Bordo, Owen F. Humpage, and Anna J. Schwartz, "U.S. Foreign Exchange-Market Intervention during the Volcker-Greenspan Era," *NBER Working Paper Series, Working Paper 16345*, National Bureau of Economic Research, September 2010. Another analogy for QE1 and QE3 is the size of the portfolio of mortgage-backed securities at the GSEs. (The analogy is less than perfect, though, because to buy mortgage-backed securities, the GSEs must issue a like amount of its own debt, which may be a closer substitute than the excess reserves created by a Fed purchase.) Chairman Greenspan said,

    > [W]e have found little, if any, evidence that the spread of home-mortgage interest rates over comparable-maturity U.S. Treasuries are affected at all by variations in the size of GSE portfolios.[7] [7. See Wayne Passmore (2005), "The GSE Implicit Subsidy and the Value of Government Ambiguity," *Finance and Economic Discussion Series 2005-5* (Washington: Board of Governors of the Federal Reserve System, January) (forthcoming in *Real Estate Economics*); Wayne Passmore, Shane M. Sherlund, and Gillian Burgess (2005), "The Effect of Government Sponsored Enterprises on Mortgage Rates," *Finance and Economic Discussion Series 2005-6* (January) (forthcoming in *Real Estate Economics*); and Andreas Lehnert, Wayne Passmore, and Shane M. Sherlund (2005), "GSEs, Mortgage Rates, and Secondary Market Activities," *Finance and Economic Discussion Series 2005-7* (January).] In fact, contrary to the expectations that MBS portfolio accumulation lowers home mortgage interest rates, the spreads apparently *widened* as the portfolios grew from 1995 to 2003. (See Alan Greenspan, "Government-Sponsored Enterprises," remarks to the Conference on Housing, Mortgage Finance, and the Macroeconomy, Federal Reserve Bank of Atlanta, Atlanta, Georgia, May 19, 2005, p. 5.)

25. Andrew Levin, David López-Salido, Edward Nelson, and Tack Yun, "Limitations on the Effectiveness of Forward Guidance at the Zero Lower Bound," *The International Journal of Central Banking* 6, no. 1, March 2010, p. 151. In truth, the Fed really didn't introduce conditionally in the immediate announcement until January 2006, Greenspan's last meeting, when policy became "data dependent." And, as seen in Chapter 6, it was just this conditionality, when combined with the remaining upward bias in the statement, that gave newly appointed Chairman Bernanke his communication problems.
26. Finn E. Kydland and Edward C. Prescott, "Rules Rather Than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy* 85, June 1977; and Robert J. Barro and David Gordon, "A Positive Theory of Monetary Policy in a Natural Rate Model," *Journal of Political Economy* 91, August 1983.
27. Allan S. Blinder, *Central Banking in Theory and Practice*, MIT Press, 1998, pp. 38–48.
28. See David Reifschneider and John C. Williams, "Three Lessons for Monetary Policy in a Low-Inflation Era," *Journal of Money, Credit, and Banking* 32, November 2000; Gauti B. Eggertsson and Michael Woodford, "The Zero Bound on Interest Rates and Optimal Monetary Policy," *Brookings Papers on Economic Activity* 1, 2003; Klaus Adam and Roberto M. Billi, "Optimal Monetary Policy under Commitment with a Zero Bound on Nominal Interest Rates," *ECB Working Paper Series No. 377*, July 2004; Anton Nakov, "Optimal and Simple Monetary Policy Rules with Zero Floor on the Nominal Interest Rate," *International Journal of Central Banking* 4, no. 2, June 2008; Andrew Levin, David López-Salido, Edward Nelson, and Tack Yun, "Limitations on the Effectiveness of Forward Guidance at the Zero Lower Bound," *International Journal of Central Banking* 6, no. 1, March 2010; Robert G. King, "Discussion of 'Limitations on the Effectiveness of Forward Guidance at the Zero Lower Bound,'" *International Journal of Central Banking* 6, no. 1, March 2010.
29. Minutes of the Federal Open Market Committee meeting, November 1–2, 2011, p. 3.
30. Glenn D. Rudebusch and John C. Williams, "Revealing the Secrets of the Temple: The Value of Publishing Central Bank Interest Rare Projections," *Working Paper 2006–31*, Federal Reserve Bank of San Francisco, October 2006, pp. 10–11. President Janet Yellen proposed taking this step to the FOMC three months later. (Transcript of the Federal Open Market Committee meeting, January 30–31, 2007, pp. 157–58.)
31. Minutes of the Federal Open Market Committee meeting, November 1–2, 2011, p. 2.
32. Minutes of the Federal Open Market Committee meeting, December 13, 2011, pp. 9–10.
33. Statement after the Federal Open Market Committee meeting, January 24–25, 2012.
34. Conceivably, some participants had altered their views in the interval between the time of the initial deadline to submit the projections late in the previous week and the meeting on Tuesday and Wednesday of the next week. But the participants always have been given an opportunity at the end of such a meeting to revise their submitted forecasts in light of the discussion. True, even some whose opinion had changed may not have wanted to suffer the aggravation of doing so.
35. Arthur F. Burns, Statement before the Subcommittee on Financial Institutions Regulation, Supervision and Insurance, Committee on Banking, Currency and Housing, US House of Representatives, March 18, 1976, p. 23.
36. Arthur F. Burns, Statement before the Committee on Banking, Finance and Urban Affairs, US House of Representatives, July 26, 1977, p. 4.
37. Binyamin Applebaum, "Fed to Publish a Forecast of Rate Moves, Guiding Investors," *New York Times*, January 3, 2012.
38. Minutes of the Federal Open Market Committee meeting, January 24–25, 2012, p. 14.
39. Janet L. Yellen, "The Economic Outlook and Monetary Policy," speech at the Money Marketeers of New York University, April 11, 2012.

40. Jon Faust and Dale W. Henderson, "Is Inflation Targeting Best Practice Monetary Policy?" *International Finance Discussion Papers, No. 807*, May 2004, published in *Federal Reserve Bank of St. Louis Review* 86, no. 4, July/August 2004. For a later explication of similar theoretical criticisms, see Michael Woodford, "Central Bank Communication and Policy Effectiveness," Federal Reserve Bank of Kansas City, Jackson Hole Conference, August 6, 2005.
41. For example, in establishing its policy stance the central bank could use a relationship evident in the data, such as the forward-looking Taylor rule under Greenspan through the mid-1990s estimated in my internal 2003 book.
42. Petra M. Geraats, "ECB Credibility and Transparency," *European Economy: Economic Papers 330*, June 2008, pp. 29–30.
43. Laurence H. Meyer, "Inflation Targets and Inflation Targeting," July 17, 2001, p. 9.
44. Laurence H. Meyer, "What I Learned at the Fed," *Macroeconomics, Monetary Policy, and Financial Stability: A Festschrift in Honor of Charles Freedman*, Bank of Canada Conference, June 2003, http://www.bankofcanada.ca/wp-content/uploads/2010/09/learned.pdf.
45. Laurence H. Meyer, "Inflation Targets and Inflation Targeting," July 17, 2001, pp. 9–10.
46. Laurence H. Meyer, *A Term at the Fed: An Insider's View*, HarperBusiness, 2004.
47. Id., p. 76.
48. Id., pp. 75–76.
49. Id., p. 76.
50. Lars E. O. Svensson, "Inflation Targeting," *NBER Working Paper Series, Working Paper 16654*, National Bureau of Economic Research, December 2010, p. 7; available at http://www.nber.org/papers/w16654; in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, Volume 3b, Chapter 22, Elsevier, 2011.
51. I am indebted to Richard Anderson and Ellen Meade for rescuing me from the peril involved in misinterpreting Svensson's work.
52. Lars E. O. Svensson, "Inflation forecast targeting: Implementing and monitoring inflation targets," *European Economic Review* 41, no. 6, 1997; Lars E. O. Svensson, "Inflation Targeting as a Monetary Policy Rule," *Journal of Monetary Economics* 43, no. 3, June 1999. A book around that time by Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen also advocated a similar approach. See Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen, *Inflation Targeting: Lessons from the International Experience*, Princeton University Press, 1999.
53. Lars E. O. Svensson, "Inflation Targeting as a Monetary Policy Rule," *Journal of Monetary Economics* 43, no. 3, June 1999, p. 16.
54. Lars E. O. Svensson, "Inflation Targeting," *NBER Working Paper Series, Working Paper 16654*, National Bureau of Economic Research, December 2010; in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, Volume 3b, Chapter 22, Elsevier, 2011, available at http://people.su.se/~leosven/papers/HandbookIT.pdf.
55. Lewis Carroll (Charles Lutwidge Dodgeson), *Through the Looking-Glass, and What Alice Found There,* Hayes Barton Press, 1872, p. 72.
56. "Longer-Run Goals and Policy Strategy," *Press Release*, Board of Governors of the Federal Reserve System, January 25, 2012.
57. Such a constant interval for planning to get inflation to return to its target, as mentioned earlier, initially had been enunciated for the Bank of England in practice by Governor Mervyn King and estimated by Charles Goodhart. See Mervyn A. King, "Monetary Policy in the UK," *Fiscal Studies* 15, no. 3, p. 118, and Charles Goodhart, "The Monetary Policy Committee's Reaction Function: an exercise in estimation," Discussion paper, 495, Financial Markets Group, London School of Economics and Political Science, 2004. The Bank of England did not make official its abandonment of this inflexible approach to "flexible" inflation targeting until mid-February 2013. See Simon Nixon, "Bank of England Flexes Further on Inflation," *Wall Street Journal*, February 14, 2013.

58. See Jon Faust and Dale W. Henderson, "Is Inflation Targeting Best Practice Monetary Policy?" *International Finance Discussion Papers, Number 807*, May 2004, published in *Federal Reserve Bank of St. Louis Review* 86, no. 4, July/August 2004. For later explications of similar theoretical criticisms, see Michael Woodford, "Central Bank Communication and Policy Effectiveness," Federal Reserve Bank of Kansas City, Jackson Hole Conference, August 6, 2005; Lars E. O. Svensson, "Inflation forecast targeting: Implementing and monitoring inflation targets," *European Economic Review* 41, no. 6, 1997; and Lars E. O. Svensson, "Inflation Targeting as a Monetary Policy Rule," *Journal of Monetary Economics* 43, no. 3, June 1999.
59. Transcript of Chairman Bernanke's Press Conference, January 25, 2012, p. 23.
60. Richard Clarida, "Something Old, Something New, Something Borrowed and Something 2," *Global Perspectives*, February 2012, p. 3.
61. Richard G. Anderson, "The FOMC: Transparency Achieved?" *Economic SYNOPSES* no. 8, 2012, p. 1.
62. That is especially true of the recent version articulated by Lars E. O. Svensson, "Inflation Targeting," *NBER Working Paper Series, Working Paper 16654*, National Bureau of Economic Research, December 2010; in Benjamin M. Friedman and Michael Woodford, eds., *Handbook of Monetary Economics*, Volume 3b, Chapter 22, Elsevier, 2011, accessible at http://people.su.se/~leosven/papers/HandbookIT.pdf.
63. Arthur F. Burns, Milutin Ćirović, and Jacques J. Polak, "The Anguish of Central Banking," Per Jacobsson Lecture, Belgrade, Yugoslavia, September 30, 1979, p. 16, http://www.perjacobsson.org/lectures/1979.pdf.
64. *ABC News' Issues and Answers*, Transcript, October 29, 1979, p. 2.
65. Zachary A. Goldfarb, "Fed Minutes Show a Willingness for Stimulus If Unemployment Rises," *Washington Post*, February 16, 2012. Tarujllo also abstained a year later from the Board's vote to renew the statement.
66. Binyamin Applebaum, "Aiming for Clarity, Fed Still Falls Short in Some Eyes," *New York Times*, April 22, 2012.
67. Peter Coy, "The Fed's Transparency Is Breeding Confusion," *Bloomberg Businessweek Global Economics,* April 25, 2012.
68. Statement after the Federal Open Market Committee meeting, June 19–20, 2012.
69. See Jon Hilsenrath, "Fed Moves Closer to Action: Central Bank Prepares Steps to Spur the Economy Unless the Recovery Picks Up," *Wall Street Journal*, July 25, 2012, and Binyamin Applebaum, "Fed Sees Both Benefits and Risks in New Moves," *New York Times*, July 26, 2012.
70. The exchange may be seen on "Predictions Mixed Ahead of Fed Meeting," *Video: The Latest Market and Economy Videos*, August 1, 2012. I got to know Roach in the mid-1970s when he was a colleague of mine on the Board staff. I first met Meyer at my seminar in St. Louis in late-October 1981 when he kindly explained an algebraic derivation that momentarily had slipped my mind in the theoretical model in my paper on the effect of paying interest on transaction deposits. I later saw him often during his meritorious service as a Governor.
71. Along with Antulio Bomfim, an ex-Board staffer employed at Meyer's firm Macroeconomic Associates, he had simulated an econometric model to estimate that without QE1 the 10-year Treasury yield would have been 60 basis points higher. Antulio N. Bomfim and Laurence H. Meyer, "Quantifying the Effects of Fed Asset Purchases on Treasury Yields," *Monetary Policy Insights: Fixed Income Focus*, 2010, cited in Chen Han, Vasco Cúrdia, and Andrea Ferrero, "The Macroeconomic Effects of Large-Scale Asset Purchase Programs," *Staff Report no. 527,* Federal Reserve Bank of New York, December 2011, Table 1, p. 42. This estimate was even larger than the aforementioned 50 basis point effect assumed for QE1 in Hess Chung, Jean-Phillipe Laforte, David Reifschneider, and John Williams, "Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events," *Working Paper 2011-01*, Federal Reserve Bank of San Francisco, January 2011.

72. Some historians also may simply accept the applicability of determinism, in which actual historical events were the only possible ones and hence inevitable.
73. Spencer Jakab, "The Same Song and Dance for the Fed," *Wall Street Journal*, June 20, 2012.
74. Ben S. Bernanke, "The Federal Reserve and the Financial Crisis: The Federal Reserve after World War II," Lecture 2, George Washington University School of Business, March 22, 2012.
75. The paper's abstract goes so far as to state, "Changes in the federal funds rate have no systematic effect on either long-term interest rates or housing prices over nearly a century. Indeed, since the mid-1990s the policy rate had a negative relationship with long-term interest rates." Carmen M. Reinhart and Vincent Reinhart, "Pride Goes Before a Fall: Federal Reserve Policy and Asset Markets," *NBER Working Paper Series, Working Paper No. 16815*, National Bureau of Economic Research, February 2011.
76. After retiring from the Board in 2007, he put in a stint at the American Enterprise Institute, and then joined Morgan Stanley in October 2011. He left that post in early 2015.
77. Nathan Sheets, "Escaping the Zero Lower Bound—Are Bulging Central Bank Balance Sheets a Good Substitute for Rate Cuts?" *Global Empirical and Thematic Perspectives*, *Citi Economics*, April 23, 2012, p. 1.
78. Frederic S. Mishkin, *The Economics of Money, Banking, and Financial Markets*, 10th ed., Pearson Series in Economics, Prentice Hall, 2012.
79. John P. Hussman, "Extraordinary Strains," *Weekly Market Comment*, July 23, 2012, p. 4. A related point was made in John Berry, "The Fed's Limited Instruments: For FOMC Policymakers, There Is No Obvious Money Play," *International Economy,* Summer 2012, p. 47.
80. David O. Lucca and Emanuel Moench, "The Pre-FOMC Announcement Drift," *Federal Reserve Bank of New York Staff Report Number 512*, September 2011, Revised June 2012.
81. Citing in one place the voluminous academic-style studies finding a meaningful effect of quantitative easing in the United States through autumn 2012 is warranted:

Bauer, Michael D., and Glenn D. Rudebusch (2011). "The Signaling Channel for Federal Reserve Bond Purchases." *Working Paper 2011-21*, Federal Reserve Bank of San Francisco, August, www.frbsf.org/publications/economics/papers/2011/wp11-21bk.pdf.

Baumeister, Christiane, and Luca Benati (2010). "Unconventional Monetary Policy and the Great Recession." *European Central Bank Working Paper 1258*.

Bomfim, Antulio N., and Laurence H. Meyer (2010). "Quantifying the Effects of Fed Asset Purchases on Treasury Yields." *Monetary Policy Insights: Fixed Income Focus*.

Chung, Hess, Jean-Phillipe Laforte, David Reifschneider, and John Williams (2011). "Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events." *Working Paper 2011-01*, Federal Reserve Bank of San Francisco, January.

D'Amico, Stefania, and Thomas B. King (2010). "Flow and Stock Effects of Large-Scale Treasury Purchases." *Finance and Economics Discussion Series 2010–52*, Board of Governors of the Federal Reserve System, September.

D'Amico, Stefania, William English, David López-Salido, and Edward Nelson (2012). "The Federal Reserve's Large-Scale Asset Purchase Programs: Rationale and Effects." *Economic Journal* 122 (November), pp. F415–45.

Doh, Taeyoung (2010). "The Efficacy of Large-Scale Asset Purchases at the Zero Lower Bound." *Economic Review*, Q2, Federal Reserve Bank of Kansas City.

Fuhrer, Jeffrey C., and Giovanni P. Olivei (2011). "The Estimated Macroeconomic Effects of the Federal Reserve's Large-Scale Treasury Purchase Program." *Public Policy Brief 11-2*, Federal Reserve Bank of Boston, April.

Gagnon, Joseph, Mathew Raskin, Julie Remache, and Brian Sack (2011). "The Financial Market Effects of the Federal Reserve's Large-Scale Asset Purchases." *International Journal of Central Banking* 7 (March), pp. 3–43.

Gilchrist, Simon, and Egon Zakrajšek (2012). "The Impact of the Federal Reserve's Large-Scale Asset Purchase Programs on Default Risk." Paper presented at "Macroeconomics and Financial Intermediation: Directions since the Crisis," a conference held at the National Bank of Belgium, Brussels, December 9–10, 2011.

Hancock, Diana, and Wayne Passmore (2011). "Did the Federal Reserve's MBS Purchase Program Lower Mortgage Rates?" *Journal of Monetary Economics* 58 (July), pp. 498–514.

Hamilton, James D., and Jing (Cynthia) Wu (2012). "The Effectiveness of Alternative Monetary Policy Tools in a Zero Lower Bound Environment." *Journal of Money, Credit, and Banking* 44, no. 1: 3–46.

Ihrig, Jane, Elizabeth Klee, Canlin Li, Brett Schulte, and Min Wei (2012). "Expectations about the Federal Reserve's Balance Sheet and the Term Structure of Interest Rates." *Finance and Economics Discussion Series 2012-57*. Board of Governors of the Federal Reserve System, July, preliminary.

Krishnamurthy, Arvind, and Annette Vissing-Jørgensen (2011). "The Effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy (PDF)," *Brookings Papers on Economic Activity*, Fall, pp. 215–65, http://www.brookings.edu/~/media/Projects/BPEA/Fall%202011/2011b_bpea_krishnamurthy.PDF.

——— (2012). "Why an MBS-Treasury Swap Is Better Policy than the Treasury Twist." *Kellogg Insight*, Kellogg School of Management (July).

Levin, Andrew, David López-Salido, Edward Nelson, and Tack Yun (2010). "Limitations on the Effectiveness of Forward Guidance at the Zero Lower Bound." *The International Journal of Central Banking* 6, no. 1 (March), http://www.ijcb.org/journal/ijcb10q1a8.htm.

Li, Canlin, and Min Wei (2012). "Term Structure Modelling with Supply Factors and the Federal Reserve's Large Scale Asset Purchase Programs." *Finance and Economics Discussion Series 2012-37*. Board of Governors of the Federal Reserve System, May, www.federalreserve.gov/pubs/feds/2012/201237/201237pap.pdf.

Meaning, Jack, and Feng Zhu (2011). "The Impact of Recent Central Bank Asset Purchase Programmes." *Bank of International Settlements Quarterly Review*, December, pp. 73–83, http://www.bis.org/publ/qtrpdf/r_qt1112h.pdf.

Neely, Christopher J. (2012). "The Large-Scale Asset Purchases Had Large International Effects." *Federal Reserve Bank of St. Louis Working Paper No. 2010-018C*, revised April 2012.

Pandl, Zach (2012). "Talking Down the Term Premium." Goldman Sachs ECS Research, *US Economics Analyst*, no. 12/19 (May).

Rosa, Carlo (2012). "How 'Unconventional' Are Large-Scale Asset Purchases? The Impact of Monetary Policy on Asset Prices." *Staff Report No. 560*, *Federal Reserve Bank of New York Staff Reports*, Federal Reserve Bank of New York, May.

Swanson, Eric T. (2011). "Let's Twist Again: A High-Frequency Event-Study Analysis of Operation Twist and Its Implications for QE2." *Brookings Papers on Economic Activity*, Spring, pp. 151–88, http://www.brookings.edu/~/media/Projects/BPEA/Spring%202011/2011a_bpea_swanson.PDF.

82. See Chen Han, Vasco Cúrdia, and Andrea Ferrero "The Macroeconomic Effects of Large-Scale Asset Purchase Programs," *Staff Report No. 527*, December 2011, Federal Reserve Bank of New York. A published version of the paper was Chen, Han, Vasco Cúrdia, and Andrea Ferrero (2012). "The Macroeconomic Effects of Large-Scale Asset Purchase Programs," *The Economic Journal* 122, no. 564. To derive the figures in the text, I halved the impact shown on Table 10, p. 54, because absent the forward guidance in the simulation, "output growth increases by . . . about half of the baseline effects." (p. 30.) (The results didn't grab the attention of the media until the publication of Vasco Cúrdia and Andrea Ferrero, "How Stimulatory Are Large-Scale Asset Purchases?" *FRBSF Economic Letter,* August 12, 2013.)

83. Jonathan H. Wright, "What Does Monetary Policy Do to Long-Term Interest Rates at the Zero Lower Bound?" First Version: January 22, 2011; this version: May 9, 2012, pp. 1, 18–19. Actually, his statistical results also averaged in the effects of the August 9, 2011, announcement to the effect that the FOMC expected to retain an exceptionally low funds rate through mid-2013. Since I don't see why that announcement wouldn't have a permanent effect on long-rates, other things equal, it follows from the laws of arithmetic that his estimate for the half-life of two episodes of quantitative easing and one of operation twist must be at least a little too long. Also, I don't get why his estimate of the impact of the chairman's hint at Jackson Hole on August 27, 2010, of the upcoming implementation of QE2 has the wrong sign in Table 5. For other negative findings, see Johannes Stroebel and John B. Taylor, "Estimated Impact of the Fed's Mortgage-Backed Securities Purchase Program," *International Journal of Central Banking*, June 2012.
84. Later that day, the Fed's statement revealed a rewording that strengthened that impression: "The Committee will closely monitor incoming information on economic and financial developments and will provide additional accommodation as needed to promote a stronger economic recovery and sustained improvement in labor market conditions in a context of price stability." (Statement after the Federal Open Market Committee meeting, July 31–August 1, 2012.) The statement predictably affected market sentiment, with a poll of economists in the next week showing, "Nearly two-thirds of respondents now expect the Fed to engage in another round of large-scale asset purchases this year, and of those, most see the announcement coming at the central bank's meeting in September." (Phil Izzo, "Debate Over 'Fiscal Cliff' Weighs on Growth," *Wall Street Journal*, August 10, 2012.) The release of the Minutes on August 22 reinforced the point: "Participants also exchanged views on the likely benefits and costs of a new large-scale asset purchase program. Many participants expected that such a program could provide additional support for the economic recovery both by putting downward pressure on longer-term interest rates and by contributing to easier financial conditions more broadly. In addition, some participants noted that a new program might boost business and consumer confidence and reinforce the Committee's commitment to making sustained progress toward its mandated objectives." (Minutes of the Federal Open Market Committee meeting, July 31–August 1, p. 7.)
85. Matthew O'Brien, "The Federal Reserve Is Naked: Unemployment is above target and inflation is below target, and the Fed is doing nothing. What?", *The Atlantic*, August 1, 2012; R.A., "Monetary policy: See No Evil," *Free Exchange, Economics, The Economist*, August 1, 2012; and The Editors, "The Music Men," *Wall Street Journal*, August 1, 2012.

Chapter 9

1. Chairman Ben S. Bernanke, "Monetary Policy since the Onset of the Crisis," Speech at the Federal Reserve Bank of Kansas City Economic Symposium, Jackson Hole, Wyoming, August 31, 2012.
2. The crucial concluding words of the last sentence appeared verbatim in the *Semiannual Monetary Policy Report to the Congress*, February 26, 2013, p. 40 (emphasis added).
3. Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022*, January 2012, pp. 36–37. Two years later the agency upped its estimate of structural forces in lowering labor force participation, including effects of Obamacare; the unemployment rate adjusted for unusual cyclical factors afterward represented about half the observed decline. (Congressional Budget Office, *The Budget and Economic Outlook: 2014–2024*, February 2014, pp. 37–38.)
4. Robert J. Samuelson, "Eroding the Economic Heft of Men," *Washington Post*, April 15, 2013. Four months later, the *Wall Street Journal* reported that "August was the 40th

consecutive month in which more unemployed workers left the labor market than found jobs." (Brenda Cronin and Ben Casselman, "Workers Continue to Struggle in Recovery: Hiring Maintains Steady Pickup as Unemployment Falls to 7.3%, but Job Quality and Participation Rate Point to Softness," *Wall Street Journal*, September 7–8, 2013.)

5. Stanford's Edward P. Lazear, former chairman of the president's Council of Economic Advisers from 2006–2009, made a related point in noting that the ratio of employment to population has stayed virtually constant since mid-2009 in a range between 58 and 59 percent. He took that fact as evidence that "the various programs of quantitative easing (and other fiscal and monetary policies) have not been particularly effective at stimulating job growth." Edward P. Lazear, "The Hidden Jobless Disaster," *Wall Street Journal*, June 6, 2013.
6. Michael Kiley, "The Aggregate Demand Effects of Short- and Long-Term Interest Rates," *Finance and Economics Discussion Series 2012-5*, Board of Governors of the Federal Reserve System, September 2012.
7. Kristina Peterson, "Academic Sways Central Bankers," *Wall Street Journal*, August 31, 2012. He criticized the Fed's current practice of giving forward guidance with a fixed end-date rather than thresholds because it could transmit undue pessimism about the future of the economy that would excessively undercut current spending. A threshold approach would be better because it would clarify that the Fed's conditional policy instead would be unusually relaxed. True, not all of Woodford's presentation was persuasive. For example, his justification for the Fed to target nominal GDP rang hollow to my ear.
8. Michael Woodford, "Methods of Policy Accommodation at the Interest-Rate Lower Bound," presented at the Jackson Hole Symposium *The Changing Policy Landscape*, August 31–September 1, 2012, pp. 84–85. Woodford released a revised version on September 16. John Taylor put Woodford's paper in context by reporting that not all the *cognoscenti* at Jackson Hole had endorsed more quantitative easing. "[A] number of conference participants pushed back on this view, including John Ryding of RDQ, Mickey Levy of Bank of American, and me, but most of all Michael Woodford whose paper showed in detail how empirical evidence and basic economic theory did not support these beneficial effects." (John B. Taylor, "Strong Push Back at Jackson Hole," *Economics One: A Blog by John B. Taylor*, Tuesday, September 4, 2012.)
9. Aki Ito and Michael McKee, "Williams Calls for at Least $600 Billion in Fed Purchases," *Bloomberg Business*, August 31, 2012. But the discussant of Woodford's paper had advocated going even further than adopting open-ended quantitative easing combined with setting an expected calendar date for maintaining an extremely low interbank rate:

   > Adam Posen, whose three-year term as a policy maker at the Bank of England ended last week, said setting thresholds acknowledges economies are in a special set of circumstances and gives the public something they can understand and monitor.
   >
   > He once studied a commitment from the Bank of Japan not to raise interest rates before inflation rose above zero and found it "seemed to have a meaningful impact on long rates."
   >
   > "Talking is good, but it's [sic] got to be action-oriented talking," he said. "Better to say and do than to just say." (See Joshua Zumbrun and Simon Kennedy, "Fed Moves Toward Open-Ended Bond Purchases to Satisfy Bernanke," *Bloomberg Business*, September 3, 2012.)

10. Joshua Zumbrun and Simon Kennedy, "Fed Moves Toward Open-Ended Bond Purchases to Satisfy Bernanke," *Bloomberg Business*, September 3, 2012.
11. Liz Capo McCormick and Susanne Walker, "Fed Stuck at Zero into 2015 Seen in Swaps, QE Odds Reach 99%," *Bloomberg Business*, September 10, 2012.
12. Robin Harding and Chris Giles, "Global Economy: Not So Different This Time," *Financial Times*, September 9, 2012.

13. "Santelli vs. Liesman on Jobless Rate," *CNBC Video*, September 13, 2012, http://video.cnbc.com/gallery/?video=3000115784&play=1#. A more temperate view, though sharing the opinion that the macroeconomic effects of quantitative easing were "infinitesimal," was expressed in an appearance on the same show the very next day by Kevin Warsh, a former Morgan Stanley investment banker but a governor during the meltdown. His interview showed considerable practical knowledge about Wall Street's workings and a sensible overall perspective. Along with Vice Chairman Donald Kohn and New York Fed President Tim Geithner, he must have been essential in helping Chairman Bernanke craft such effective initial policy responses to the crisis.
14. Statement after the Federal Open Market Committee meeting, September 12–13, 2012.
15. Zachary A. Goldfarb, "Fed Will Take Aggressive Steps to Boost Growth: Actions Likely to Keep Rates Low; Stocks Rise on News," *Washington Post*, September 15, 2012.
16. Leslie H. Gelb, "Paul Volcker on Greedy Bankers, the Ryan Plan, and the Fed," *The Newsweek/Daily Beast Company LLC*, September 17, 2012.
17. Robert J. Samuelson, "Bernanke's Latest Move Has a Desperate Air," *Washington Post*, September 17, 2012.
18. Paul Krugman, "Mitt Romney, Liquidationist," *New York Times,* September 15, 2012.
19. Gavyn Davies, "FT Video: The Fed and QE3," *Financial Times*, September 14, 2012, http://blogs.ft.com/gavyndavies/2012/09/14/ft-video-the-fed-and-qe3/.
20. By mid-February of the next year that rate actually had risen on balance by some 40 basis points since the start of QE3 the previous September. These quotes are taken from Barclays Fixed-Rate MBS, "Corporate Borrowing Rates and Yields," in various issues of "Money and Investing" on business days or "Business and Finance" on Saturdays/Sundays in the *Wall Street Journal*.
21. Governor Jeremy C. Stein, "Evaluating Large-Scale Asset Purchases," speech at the Brookings Institution, October 11, 2012, p. 4. Also, another technical study critical of the power of the portfolio balance effect was published; see Daniel L. Thornton, "Evidence on the Portfolio Balance Channel of Quantitative Easing," *Working Paper Series 2012-015A,* Federal Reserve Bank of St. Louis, October 2012, http://research.stlouisfed.org/wp/2012/2012-015.pdf.
22. Patti Domm, "Fed Talk of Tapering Drives Down Stocks," *CNBC.com,* May 22, 2013.
23. Jonathan Cheng, "World Shakes Off Nikkei's 7.3% Plunge," *Wall Street Journal*, May 24, 2013. Kantor's father was a childhood friend of Alan Greenspan.
24. Transcript of Chairman Bernanke's Press Conference, June 19, 2013, pp. 4–5.
25. A very practical reason for tapering that emerged in 2013 is that new issuance of federal debt fell off appreciably owing to the abrupt decline in the actual deficit. The late John Makin wrote:

    > The deficit has been reduced by about $400 billion, due in large part to tax increases enacted in January 2013 and spending cuts that are continuing to result from the March 2013 sequester. Ongoing deficit reduction will reduce treasury borrowing needs even further in coming years by an average of $400–500 billion per year relative to 2012 levels. If, for example, the Fed cuts QE bond purchases by $20 billion per month in September, as some have suggested, there is an actual reduction in the supply of bonds for markets to absorb in the 2014 fiscal year that begins on October 1, 2013. Given the sharp drop in deficits, the Fed can cut bond purchases by about $40 billion per month—$480 billion per year—and leave the net supply unaffected based on post-2012 deficit reduction. (John Makin, "Forget Tapering, and Get Ready for QE4," *RealClearMarkets*, September 4, 2013.)

    Issuance of MBS diminished as well in 2013 with the rise in mortgage-related yields.
26. Transcript of Chairman Bernanke's Press Conference, June 19, 2013, pp. 9–10.

27. Robin Harding, "Summers Dismissed QE Effectiveness," *Financial Times*, July 25, 2013.
28. Ezra Klein, "Right Now, Larry Summers Is the Front-Runner for Fed Chair," *Wonkblog, Washington Post*, July 23, 2013.
29. Laurence Summers, "Panel Discussion: How Should Long-Term Monetary Policy Be Determined?" *Journal of Money, Credit and Banking* 23, no. 3, Part 2, August 1991.
30. Gretchen Morgenson and Joshua Rosner, *Reckless Endangerment: How Outsized Ambition, Greed, and Corruption Led to Economic Armageddon*, Times Books, 2011, pp. 79–81.
31. "There is a strong case for the prompt enactment of further timely, targeted and temporary fiscal stimulus." (Lawrence H. Summers, Charles W. Eliot University Professor, Harvard University, "Lawrence Summers Presents Case for Economic Stimulus to House Budget Committee, Summary of Testimony to House Budget Committee," September 9, 2008, p. 2.) See Milton Friedman, *A Theory of the Consumption Function*, National Bureau of Economic Research Publications, Princeton University Press, 1957, and David E. Lindsey, *The Adaptation of Expectations and the Consumption Function*, University of Chicago, unpublished PhD diss., 1970.
32. "[A]ggregate personal consumption expenditures did not increase by much at the time of these sharp increases in stimulus payments. In general, the overall pattern of personal consumption expenditures seems to move closely with disposable personal income without the addition of the stimulus funds." (John B. Taylor, "The 2009 Stimulus Package: Two Years Later," testimony before the Committee on Oversight and Government Reform Subcommittee on Regulatory Affairs, Stimulus Oversight and Government Spending, US House of Representatives, February 16, 2011, pp. 5–6.)
33. Laurence H. Meyer, *A Term at the Fed: An Insider's View*, HarperBusiness, 2004, p. 57.
34. FCIC Staff Audiotape of Interview with Vice Chair Janet Yellen, November 15, 2010.
35. Alan S. Blinder, "Janet Yellen Is the Best Fed Choice: Her long record displays consistently good judgment, especially in the crisis years," *Wall Street Journal*, July 29, 2013, and Jon Hilsenrath and Kristina Peterson, "Fed 'Doves' Beat 'Hawks' in Economic Prognosticating," *Wall Street Journal,* July 29, 2013.
36. The Editorial Board, "Choosing the Next Fed Leader," *New York Times*, July 30, 2013. That paper's editors endorsed her again more than a month later. (The Editorial Board, "The Federal Reserve Nomination," *New York Times*, September 5, 2013.) The next day, the paper sponsored a compelling testimony supporting her by a Nobel-prize-winning economist with considerable public policy experience. (Joseph E. Stiglitz, "Why Janet Yellen, Not Larry Summers, Should Lead the Fed," *New York Times; Opinion Pages*, September 6, 2013.)
37. *Goldman Sachs, Top of Mind: Economics, Commodities and Strategy Research*, October 3, 2012, p. 9. A former chairman and public-policy guru later expressed a similar view about QE3. "The beneficial effects of the actual and potential monetizing of public and private debt, which is the essence of the quantitative easing program, appear limited and diminishing over time. The old "pushing on a string" analogy is relevant. The risks of encouraging speculative distortions and the inflationary potential of the current approach plainly deserve attention." (Paul Volcker, "The Fed & Big Banking at the Crossroads," *New York Review of Books*, August 15, 2013, p. 3.)
38. Although as noted above I strongly disagreed with some of his positions, I thought that many of the critiques of his deregulatory views in general by members of his party and certain advocacy groups moved well beyond the pale. The chickens of the false narrative of the origins of the financial crisis had come home to roost in contributing to a derailment of his Fed career, although the comparatively favorable merits of the Yellen alternative apparently were more important.
39. Mark Wilson, "Fed likely to slow bond buys despite soft economy," *CBS News MoneyWatch*, September 16, 2013, http://www.cbsnews.com/news/fed-likely-to-slow-bond-buys-despite-soft-economy/. I got to know David Wyss when, in a still earlier incarnation, he was on the Board's research staff.

40. Statement after the Federal Open Market Committee meeting, September 17–18, 2013. Notice the reference to a year's worth of data. If I may offer a related editorial critique, the cautious action didn't seem to follow from the statement's wording. To be sure, the Committee did lower relative to June its central-tendency projection of economic growth for the current and next year by around a quarter percentage point in both cases.
41. Statement after the Federal Open Market Committee meeting, September 17–18, 2013.
42. Andrew Coyne, "If the Fed Wants to Avoid a Recession, It Should Convince Everyone It's Willing to Endure One," *National Post*, September 23, 2013.
43. Jon Hilsenrath, "Fed's Guidance Questioned as Market Misreads Signals," *Wall Street Journal*, September 30, 2013.
44. Ylan Q. Mui, "Fed Considers New Interest-Rate Pledge," *Washington Post*, September 24, 2013.
45. Also, Jeremy Stein had offered a speculative example concerning the possible start of tapering "in, say, September." Governor Jeremy C. Stein, "Comments on Monetary Policy," speech at the C. Peter McColough Series on International Economics, Council on Foreign Relations, New York, New York, p. 2.
46. Any request from the chairman at the September meeting for FOMC participants to be more guarded in their public utterances must have been overly subtle, since presidents James Bullard and Esther George only two days later and numerous other principals in the next week again revealed new secrets of the temple!
47. Transcript of Chairman Bernanke's Press Conference, September 18, 2013, p. 16.
48. Id., p. 5.
49. Id., p. 6.
50. Transcript of Chairman Bernanke's Press Conference, June 19, 2013, p. 19.
51. William B. English, J. David López-Salido, and Robert J. Tetlow, "The Federal Reserve's Framework for Monetary Policy—Recent Changes and New Questions," paper presented at the IMF 14th Jacques Polak Annual Research Conference, November 7–8, 2013, p. 54.
52. William B. English, J. David López-Salido, and Robert J. Tetlow, "The Federal Reserve's Framework for Monetary Policy—Recent Changes and New Questions," paper presented at the IMF 14th Jacques Polak Annual Research Conference, November 7–8, 2013, pp. 15–16.
53. In 1951, Joseph Schumpeter warned in *Capitalism, Socialism and Democracy* of a "pseudo-problem" in Karl Marx's thought that arose not from the real world but from Marx's erroneous theory of how it was supposed to work. See below in this chapter for an explanation of why, in my own theory without rational expectations in labor and product markets, inflation still would return gradually to the Fed's 2 percent goal even while unemployment remains at the natural rate.
54. Andrew Coyne, "If the Fed Wants to Avoid a Recession, It Should Convince Everyone It's Willing to Endure One," *National Post*, September 23, 2013. Janet Yellen had made a similar point in the late 2008 FOMC meeting: "In theory, by committing to more inflation than we actually want later on, we could generate extra stimulus now. But this strategy requires a strong commitment device because the Committee will have an incentive to renege later on when the economy has recovered. I do understand the attractions of such a strategy in theory, but I am not at all convinced that the benefits would exceed the costs in practice. It would be enormously difficult to explain and could harm the Fed's overall credibility as an institution." (Transcript of the Federal Open Market Committee meeting, December 15–16, 2008, pp. 44–45.)
55. Steve Liesman, *Squawk Box*, CNBC, September 19, 2013, available at http://money.msn.com/money-video/default.aspx?from=gallery_en-us&videoid=dcf2f39c-a48b-4f7c-9bc5-d98572a192fa&sf=Relevancy#2.
56. Transcript of Chairman Bernanke's Press Conference, September 18, 2013, p. 17.

57. David Kotok, "Is the Fed an Enabler?" *Cumberland Advisors*, September 23, 2013.
58. Carrick Mollenkamp and Cezary Podkul, "Special Report: Pimco shook hands with the Fed—and made a killing," *Reuters*, September 27, 2013.
59. Matt Levine, "Pimco Predicted the Fed Would Do What It Said It Would," *Bloomberg Business*, September 27, 2013.
60. Arvind Krishnamurthy and Annette Vissing-Jorgensen, "The Ins and Outs of LSAPs," *The Federal Reserve Bank of Kansas City, 2013 Economic Policy Symposium, Global Dimensions of Unconventional Monetary Policy*, first draft: August 9, 2013; this draft: September 16, 2013.
61. As sources of the backup, Chairman Bernanke's pointed out that "some of the rise in rates reportedly reflected an unwinding of levered positions—positions that appear to have been premised on an essentially indefinite continuation of asset purchases—together with some knock-on liquidations of other positions in response to investor losses and the rise in volatility." Chairman Ben S. Bernanke, "Communication and Monetary Policy," Board of Governors of the Federal Reserve System, remarks at the National Economists Club Annual Dinner, Herbert Stein Memorial Lecture, November 19, 2013, p. 15.
62. Governor Jeremy C. Stein, "Yield-Oriented Investors and the Monetary Transmission Mechanism," speech at the "Banking, Liquidity and Monetary Policy," a Symposium Sponsored by the Center for Financial Studies, Frankfurt, September 26, 2013. pp. 2–3.
63. This and previous chapters have specified the studies that were published in the months leading up to Jackson Hole in August 2012 and thereafter containing the body of evidence necessary to comprehend accurately the limited lasting impacts of QE on asset prices, economic activity, and inflation, partly due to speculative factors: Chen Han, Vasco Cúrdia, and Andrea Ferrero (December 2011); Jonathan Wright (May 2012); Johannes Stroebel and John B. Taylor (June 2012); David O. Lucca and Emanuel Moench (June 2012); Michael Woodford (August/September 2012); Michael Kiley (September 2012); John B. Taylor (September 2012); Jeremy C. Stein (October 2012); Daniel L. Thornton (October 2012); Carrick Mollenkamp and Cezary Podkul, (September 2013); and Matt Levine (September 2013). On January 16, 2014, John C. Williams presented his overview at a conference at Brookings, "Central Banking after the Great Recession: Lessons and Challenges Ahead." His paper was called "Monetary Policy at the Zero Lower Bound: Putting Theory into Practice." But that subtitle was puzzling. The paper led off, "It has been said, 'An economist is a man who, when he finds something works in practice, wonders if it works in theory.' The study of the zero lower bound (ZLB) on nominal interest rates is an example of precisely the opposite: economists first figuring out what works in theory and then seeing if it works in practice" (p. 1). Yet, as he himself later emphasized, the accepted New Keynesian theory denies that QE would have any effect: "Standard textbook theory based on frictionless financial markets and the absence of arbitrage tells us that large-scale asset purchases by central banks should have no effect on asset prices or the broader economy, all else equal. According to this theory, the price of an asset depends solely on its expected future returns, adjusted for risk. Since asset purchases by the central bank don't fundamentally change the risk-adjusted returns to assets, they should have no direct effect on asset prices or the economy" (p. 9). Indeed, only two hours after Williams's presentation, Chairman Bernanke in an interview at that conference quipped, "Well, the problem with QE is that it works in practice but doesn't work in theory!" (This book has argued that his characterization of practice was incorrect.) William's paper, after mentioning the somewhat idiosyncratic concept of possible preferred habitats in segmented markets, then supposedly assessed the size of QE's effect on long rates. Williams summarized the estimates of 15 studies in his Table 1: "[A]lthough individual estimates differ, this analysis consistently finds that asset purchases have sizable effects on yields on longer-term securities . . . The central tendency

of the estimates reported in table 1 indicates that $600 billion of Federal Reserve's asset purchases lowers the yield on ten-year Treasury notes by around 15–25 basis points. To put that in perspective, that is roughly the same size move in longer-term yields one would expect from a cut in the federal funds rate of 3/4 to 1 percentage point" (p. 10). But his review was somewhat selective. While Williams did reference the 2012 version of the critical Han, Cúrdia, and Ferrero (2011) paper, he didn't cite any of the other studies enumerated at the start of this footnote. But you might object that one shouldn't expect Williams to have cited Taylor, Mollenkamp and Podkul, or Levine because those mere journalistic exercises didn't represent respectable academic-style research. But that's exactly one of my points! Such an all-too-widespread attitude within the Fed explains how so much relevant information can get dismissed.

64. Governor Jeremy C. Stein, "Evaluating Large-Scale Asset Purchases," speech at the Brookings Institution, October 11, 2012, p. 4. In this regard, I finally saw in print in early September something that I suspected applied to no more than a few FOMC members, though possibly including Governor Stein himself. Not that Mathew Klein offered any hard-and-fast evidence of broader applicability when he contended that the Fed's revelation of its conditional intention to cease new open-ended asset purchases by mid-2014 arose "because Fed policy makers no longer believe that asset purchases have a positive impact and also believe that QE comes with costs." See Mathew C. Klein, "Porn Shutdown Shock Won't Stop Fed from Tapering," *Bloomberg, The Ticker*, September 6, 2013. In light of the innumerable reasons proffered to justify speculation about the likely pace of tapering that really represented little more than empty silliness, I greatly appreciated the article's headline, along with the accompanying photo of a comely starlet assuming a come-hither pose. I suppose their use was rationalized by the story's following insight:

    > One of the big surprises in today's report was the 6 percent decline in the number of people working in the "motion picture and sound recording industries." Wags on Twitter proceeded to list their least-favorite summer flops as explanations, but Jim Tankersley at the *Washington Post* had a better idea: the U.S. porn industry stopped working for a week after an actress tested positive for HIV. Once it became clear that no one else had the disease, work resumed. The one-week shutdown would affect the jobs numbers for the month of August but tells us nothing about the broader state of the U.S. economy. Had those 22,000 people been working, employment growth in August would have modestly beaten expectations. Fed officials are probably writing off this month's weakness for that very reason.

65. Caroline Salas Gage, "Dudley Says Fed Must 'Forcefully' Push Against Headwinds," *Bloomberg Business*, September 23, 2013. The same point was made by a participant in the December FOMC meeting. (Minutes of the Federal Open Market Committee meeting, December 17–18, 2013, p. 3.)
66. See Jon Hilsenrath, "Tense Negotiations Inside the Fed Produced Muddled Signals to Markets," *Wall Street Journal*, October 8, 2013. As another editorial comment, I thought the tone of the Minutes was considerably more downbeat about economic prospects than the statement. That's not to say that additional economic weakness itself, unlike shutdown uncertainties, logically would have affected my view of the wisdom of the delay in tapering.
67. Figure 9.1 is taken from the *Semiannual Monetary Policy Report to the Congress,* February 11, 2014, Figure 42, p. 34.
68. Board of Governors of the Federal Reserve System, *H.3, Aggregate Reserves of Depository Institutions and the Monetary Base*, February 6, 2014.
69. Rich Miller and Simon Kennedy, "Yellen, Carney Face Explaining Policy as Benchmarks Near," *Bloomberg Business*, February 9, 2014.
70. Julianna Goldman, "Yellen Said to Push White House to Pick Fischer for Fed," *Bloomberg Politics*, January 10, 2014.

71. Kazuo Ueda, "Japan's Deflation and the Bank of Japan's Experience with Non-Traditional Monetary Policy," *Center for Advanced Research in Finance, CARF Working Paper 235,* October 2010; revised October 2011, p. 10.
72. An economic historian, Kenzo Yamamoto now is Chairman, NTT Data Institute of Management Consulting, although up until mid-2012 he was executive director at the Bank of Japan, and before that chief representative of the Bank of Japan at the New York office, where I befriended him.
73. Personal communication, July 18, 2014. I quote Yamamoto's answer to his own question in Chapter 13.
74. In June 2007, Bernanke said to the FOMC, "I actually—and I'm speaking entirely for myself—would be not at all displeased if that became known as the Federal Reserve's comfort zone or informal definition of price stability." Transcript of the Federal Open Market Committee meeting, June 27–28, 2007, p. 242.
75. Transcript of Chairman Bernanke's Press Conference, June 19, 2013, p. 1.
76. The FOMC's median funds rate projection in December 2013 was 0.75 percent for late 2015 and 1.25 percent for late 2016. By contrast, consider the forecast with a backward-looking Taylor rule consistent with the empirical estimate for the Greenspan era up to then in my 2003 book. (David E. Lindsey, *A Modern History of FOMC Communication: 1975–2002*, FOMC Secretariat, Board of Governors of the Federal Reserve System, June 24, 2003, Table 31, p. 239.) The simplified coefficients for determining the funds rate at the end of this year are 1.5 on this year's 4-quarter core inflation rate, minus 2.0 on the unemployment rate gap in this year's fourth quarter, a natural real funds rate of 2.0 percent, and an annualized value of 0.115 on the funds rate at the end of the previous year. We'll use the FOMC's projections of the unemployment rate gap shown in Table 9.2 but the simulated values for core consumer inflation in that table. The implied end-of-year funds rates are 1 percent for 2014, 2-1/4 percent for 2015, and 3-1/2 percent for 2016. After these calculations were made, a useful study by Citi appeared, though it used the FOMC's core inflation projections and didn't account for inertia in policymaking. (Benjamin R Mandel and Robert A. Sockin, "When Will the Fed Start Hiking Rates? Hints from the FOMC's Forecasts," *Citi Research*, January 6, 2014.)

    Long after I composed the description and simulation of this particular theory of inflation, the FOMC released on March 4, 2015, the transcripts of its meeting on December 15–16, 2009. The meeting concluded with a special briefing in which Jeff Fuhrer, executive vice president at the Boston Fed, without specifying my exact model, anticipated many of my conclusions and confirmed many of my results. (See the briefing by Jeff Fuhrer, "The Role of Expectations and Output in the Inflation Process," Transcript of the Federal Open Market Committee meeting, December 15–16, 2009, pp. 151–155 and 230–247.)

    Then on July 24, 2015, the Board revealed that confidential forecasts of its staff econometric model for the unemployment rate, core PCE inflation, and the funds rate prepared for the mid-June FOMC meeting had appeared by accident on the Board's website in late June. (Incidentally, after allowing for the delay of a year and a half in the timing of the calculation of the two simulations, those results were qualitatively quite similar to the findings shown above in Table 9.2 and earlier in this footnote.) Specifically, the Board reported the following:

    > Economic projections prepared by Federal Reserve Board staff as background for the June 16–17, 2015, meeting of the Federal Open Market Committee (FOMC) were inadvertently included in a computer file posted to the Board's public website on June 29. Because the information has already been released, the Federal Reserve is today providing general public notification and making those projections more easily accessible on our website within the FRB/US model package (ZIP) data folder. ("Press Release,"

Board of Governors of the Federal Reserve System, http://www.federalreserve.gov/newsevents/press/monetary/20150724a.htm; see also http://www.federalreserve.gov/econresdata/frbus/files/frbus_package.zip, Figure 1.)

Finally, Chair Yellen spoke publicly and in detail about inflation dynamics and monetary policy on September 24, 2015. Her theoretical conceptions and empirical evidence, though much more fully developed, bore some notable similarities to those expounded in this book. However, her talk described an econometric model of core inflation that differed in some respects from this book's specific theoretical model in part because her specification relied on long-run not short-run inflation expectations and incorporated explicitly the transitory effects of relative import prices. Also, in contrast to this book's analysis of Japanese inflationary developments in Chapter 13, she expressed a skeptical view of the impact on inflationary expectations of the announcement of alterations in a central bank's inflation goal alone without an accompanying by-and-large-successful record of performance. See Chair Janet Yellen, "Inflation Dynamics and Monetary Policy," Board of Governors of the Federal Reserve System, remarks at the Philip Gamble Memorial Lecture University of Massachusetts, Amherst, September 24, 2015.

77. Minutes of the Federal Open Market Committee meeting, July 29–30, 2014, p. 3.
78. Ibid.
79. Transcript of Chair Yellen's Press Conference, September 17, 2014, p. 15.

Part III

1. Henry Lawson, "Rain in the Mountains," *The poetry of Henry Lawson, arranged by year*, 1889, http://www.ironbarkresources.com/henrylawson/index3.html.
2. Anne Applebaum, "The world is watching," *Washington Post*, October 3, 2013. I later found compelling an argument that the government shutdown represented another sign of an ongoing historical decline of Toynbeesque proportions in the democratic values of Western Civilization. (Daniel Luzer, "This government shutdown won't be our last: Get used to government shutdowns. Serious budget problems are a common feature of large states in decline," *Pacific Standard*, October 7, 2013.) Larry Summers didn't relieve my sadness by warning of "a chance future historians will see today's crisis as the turning point where American democracy was shown to be dysfunctional—an example to be avoided rather than emulated." (Lawrence Summers, "Beyond the Budget Impasse," *Reuters,* October 14, 2013.) Jonathan Chait, writing later in *New York* magazine, made me even more morose. "The Republican pragmatists believe Heritage, Ted Cruz, and other hucksters manipulated the tea party into endorsing a doomed maneuver. But the shutdown was the tea party's attempt to stop Obamacare in roughly the same sense the Days of Rage was Weatherman's attempt to stop the Vietnam War." (Jonathan Chait, "The Shutdown Was Not a Failed Strategy. It Wasn't a Strategy at All," *New York*, October 22, 2013, p. 3.) And Alice Rivlin had only made matters worse by voicing apprehension that "most importantly, breaching the debt ceiling has become a credible threat." (Alice Rivlin, "Today's Budget Impasse Is Much More Dangerous Than '95," *RealClearMarkets*, October 7, 2013.) As a fiscal expert and former Board vice chair, her warning had to be taken seriously. But to my fevered brain she was sounding the same apocalyptic alarm that made Yeats ask, "And what rough beast, its hour come round at last, slouches to Jerusalem to be born?" (William Butler Yeats, "The Second Coming," available at http://www.potw.org/archive/potw351.html.) Late in the year, just after holiday cheer brightened my mood, I suffered a psychosomatic relapse upon reading "What you're seeing is how a civilization commits suicide,' says Camille Paglia." (Bari Weiss, "A Feminist

Defense of Masculine Virtues: The cultural critic on why ignoring the biological differences between men and women risks undermining Western civilization itself, "The Weekend Interview with Camille Paglia," *Wall Street Journal*, December 28–29, 2013.)

Chapter 10

1. Congressional Budget Office, "Budget and Economic Outlook: Historical Budget Data," January 26, 2011, Table E-13, p. 14.
2. "Manfred Neumann, professor emeritus of economics at the Institute for Economic Policy at the University of Bonn, said . . . 'The positive effect of austerity is much stronger than most people believe.'" Steven Fidler, "Austerity Debate a Matter of Degree: In Europe, Opinions Differ on Depth, Timing of Cuts; International Monetary Fund Has Change of Heart," *Wall Street Journal*, February 16, 2012. I became acquainted with Neumann on his visits with Karl Brunner at The Ohio State University in the late 1960s and early 1970s. The economic snapback in the present–day Ireland, Latvia, Portugal, Spain, and United Kingdom after a program of austerity are examples.
3. John M. Berry, "A Japanese Debt Crisis?!?" *International Economy*, Spring 2012, p. 42.
4. Tom wrote the following in a personal communication to me on July 21, 2012:

> This is the Reinhart-Rogoff reference that introduces the 90 percent threshold; it is not in their long book: Carmen Reinhart and Kenneth Rogoff, "Growth in a Time of Debt," NBER Working Paper 15639, published in *American Economic Review*, May 2010. [The main conclusions of this paper remained unscathed by the subsequent valid discovery of computational errors in the original Reinhart and Rogoff paper uncovered in Thomas Herndon, Michael Ash, and Robert Pollin, "Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff," April 15, 2013. For the corrections see Carmen M. Reinhart and Kenneth S. Rogoff, "Errata: 'Growth in a Time of Debt," May 5, 2013.]
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> A related very recent paper is Carmen M. Reinhart, Vincent R. Reinhart, and Kenneth S. Rogoff, "Public Debt Overhangs: Advanced-Economy Episodes Since 1800," *Journal of Economic Perspectives* 26, no. 3, Summer 2012.
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> An earlier version of the first paper mentioned by *Bloomberg Business* on July 19 is Cristina Checherita and Philipp Rother, "The Impact of High and Growing Government Debt on Euro Area Growth: An Empirical Investigation for the Euro Area," *European Central Bank Working Paper No. 1237,* August 2010, forthcoming in *European Economic Review*.
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> This is a paper that I coauthored with my econometrician colleague, Mehmet, and a World Bank colleague, Fritzi: Mehmet Caner, Thomas Grennes, and Fritzi Koehler-Geib. "Tipping Point: When Sovereign Debt Turns Bad," *Sovereign Debt and the Financial Crisis*, Chapter 3, eds. Carlos Prima Braga and Gallina A. Vincelette, World Bank, October 2010.
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> Here's one from the BIS: Stephen Cecchetti, M. S. Mohanty, and Fabrizio Zampolli, "The Real Effects of Debt," *Bank for International Settlements Working Paper No. 352,* presented at the Growth Symposium, Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, 2011.
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> The paper mentioned today by *Bloomberg Business* in Simon Kennedy, "Fed Ignores Money Supply as ECB Uses New Tools: Cutting Research," *Bloomberg Business*, July 19, 2012, is Anja Baum, Cristina Checherita-Westphal, and Philipp Rother, "Debt And Growth: New Evidence For The Euro Area," *European Central Bank Working Paper No 1450*, July 2012. The paper said, "The short-run impact of debt on GDP growth is positive, but decreases to close to zero beyond public debt-to-GDP ratios

of around 67% (i.e. up to this threshold, additional debt has a stimulating impact on growth). This result is robust throughout most of our specifications. . . . For really high debt ratios (above 95%), additional debt has a negative impact on economic activity. . . . Furthermore, we can show that the long-term interest rate is subject to increased pressure when the public debt-to-GDP ratio is above 70%, broadly supporting the above findings." (p. 2.)

All these papers find some kind of threshold within the range 65 percent–90 percent of debt to GDP using the broad definition of debt that includes all government bonds, whether they are held outside the government or by other government agencies. (This ratio for the US now is just over 100 percent.) If you look at IMF data, it is what they call gross debt.

5. Carmen M. Reinhart, Vincent R. Reinhart, and Kenneth S. Rogoff, "Public Debt Overhangs: Advanced-Economy Episodes Since 1800," *Journal of Economic Perspectives* 26, no. 3, Summer 2012, pp. 79–80.
6. Governor Ben S. Bernanke, "Some Thoughts on Monetary Policy in Japan," speech before the Japan Society of Monetary Economics, Tokyo, Japan, May 31, 2003. The appendix examines this speech in some detail.
7. The accurate use of "dynamic scoring" would show only a minor positive offset on tax revenue, which still would be reduced appreciably on balance by the rate reduction. For an entrée into the literature, see Christina D. Romer, "That Wishful Thinking About Tax Rates," *New York Times*, March 17, 2012. Also, in contrast to supply-side doctrine, which for example calls for a lower tax rate on capital gains, Henry Simons, writing in the 1930s, had it absolutely right: Justice requires that all true sources of income be considered exactly alike and taxed at an identical rate. See Henry C. Simons, "A Positive Program for Laissez-Faire: Some Proposals for a Liberal Economic Policy," published as "Public Policy Pamphlet," No. 15, Harry D. Gideonse, editor, The University of Chicago Press, 1934; reprinted in *Economic Policy for a Free Society*, The University of Chicago Press, 1948.
8. I'm in favor of lowering tax rates only in the context of extensive tax reform and loophole closing, as actually was accomplished in 1986 to the credit of Bill Bradley (Democrat, New Jersey) in the Senate and Ronald Reagan (Republican, California) in the White House. Incidentally, while we're radically reforming the tax structure, we may as well massively cut federal spending and introduce means testing of payments for new entrants into all the entitlement programs, which of course should have been the case from the outset. Bringing the ratio of the federal deficit to GDP down to equality with the normal average interest rate on Treasury debt would prevent federal debt from tending to grow faster than GDP, a sustainable state of affairs. Promising initial steps along these lines appeared in the reports of the Domenici-Rivlin and Simpson-Bowles commissions released in the final months of 2010. (An informative analysis of where the fiscal programs advocated by President Barack Obama and challenger Mitt Romney during the 2012 campaign fell far short is Austan Goolsbee, "Mitt Romney's Tax Plan and the Middle Class," *Wall Street Journal*, August 21, 2012.) The concluding chapter of this book, though, will quote Thomas Sowell in explaining why any hopes for major fiscal reforms are just pie in the sky.
9. In accord with the previous footnote, a more recent effort at tax reform predictably bit the dust. During the debt-ceiling crisis of 2011, just after mid-July President Obama entered into negotiations with House Speaker John A. Boehner on a "grand bargain" for fiscal restraint amounting to many trillions of dollars over the next decade. The tentative deal included $800 billion in higher tax revenue as part of tax reform. Anyone who has tuned in to the most popular show on cable TV, the History Channel's *Pawn Stars,* instinctively knows that suddenly doing an about face and asking for new terms farther away from one's negotiating counterparty is unthinkable. But read on: On July 19, "[a]fter the 'Gang of Six' proposes more new tax revenue than the Obama-Boehner

framework, White House aides worry they will have a harder time selling a deal to Democratic lawmakers. The White House sends a new proposal, increasing the tax revenue over the next decade from $800 billion to $1.2 trillion." (Peter Wallsten, Lori Montgomery, and Scott Wilson, "He Promised Change in Washington. Then the Debt Deal Collapsed. So Obama Changed Course: Evolution of a President: Obama and Washington," *Washington Post*, March 18, 2012.) What would anyone on *Pawn Stars* have done? Boehner understandably bolted. Even if the original negotiation had worked out, whether Boehner could have convinced a majority of House Republicans to accept the associated increase in tax revenue is another matter, given that they had been exposed to supply-side doctrine. Recall, though, that with enough Democratic votes, a majority of Republicans is not necessary for legislation to pass the Republican-controlled House of Representatives, as demonstrated in the year-end 2012 vote that avoided the originally scheduled sequester. (In February 2013, in light of the supportive results of the 2012 election, President Obama demanded new revenue in addition to spending cuts as a "balanced" alternative to the sequester. Bob Woodward's statement of the obvious somehow offended Gene Sperling, economic adviser to President Obama, who emailed Woodward on February 22, 2013, "But I do truly believe you should rethink your comment about saying that Potus asking for revenues is moving the goal post." See Jim Vandehei and Mike Allen, "Exclusive: The Woodward, Sperling Emails Revealed," *Politico*, February 28, 2013, and the original piece, Bob Woodward, "Obama's Deal-Changer: The Long, Tortuous Road to the Sequester," *Washington Post*, February 24, 2013.)

10. Ezra Klein, "Dual Triggers Mean Republicans Have Dealt Themselves a Bad Hand: The only way for Republicans to avoid this nightmare is to somehow to persuade Democrats to bail them out," *Washington Post*, November 24, 2011.
11. Janet L. Yellen, "The Economic Outlook and Monetary Policy," speech at the Money Marketeers of New York University, April 11, 2012, pp. 2–3.
12. Alan Blinder, "Memo to Mitt: The Safety Net Needs Fixing," *Wall Street Journal*, February 13, 2012. His claim that extending unemployment-insurance benefits was a no-brainer unquestionably was true, though not in the sense he meant. In early 2014, Democrats advocated still another extension but to no avail. Because the benefits had finally ended, the unemployment rate would have tended to fall further despite a quite small loss to spending partly because some previous job searchers were induced ether to accept work or to leave the labor force. (Also, an NBER working paper later estimated that ending extended unemployment benefits had raised employment in 2014 by 1.8 million by creating additional jobs. See Marcus Hagedorn, Iourii Manovskii, Kurt Mitman, "The Impact of Unemployment Benefit Extensions on Employment: The 2014 Employment Miracle?" NBER Working Paper Series, Working Paper No. 20884, National Bureau of Economic Research, January 2015, Table 3.)
13. Mark Zandi, "U.S. Macro Outlook: Training Wheels Still Needed," Moody's Analytics, *Dismal Scientist*, February 15, 2012, p. 3.
14. Alec Phillips, "US Daily: The Election and the 'Fiscal Cliff' (Phillips)," *Goldman Sachs Global Economics, Commodities and Strategy Research,* April 4, 2012, p. 2.
15. Mark Zandi, "U.S. Macro Outlook: Training Wheels Still Needed," Moody's Analytics, *Dismal Scientist*, February 15, 2012, p. 4.
16. Peter Schroeder, "Bernanke warns lawmakers country headed for 'massive fiscal cliff,'" *On the Money: The HILL's Finance and Economy Blog*, February 29, 2012.
17. Transcript of the Federal Open Market Committee meeting, May 22, 1979, p. 22.
18. Another self-inflicted wound was his opposition to the public accommodations section of the 1964 civil rights act on the grounds that it abridged the property rights of the owners of the outlets. For a racially homogenous society, such as South Korea, his position has much to recommend it and for all I know actually is embedded in the law of the land.

But for a racially heterogeneous society like the United States, such a position is untenable and unacceptable. An influential external wound to his candidacy was the TV spot created by ad agency Doyle Dane Bernbach and acquired by Bill Moyers, Jack Valenti, and Richard Goodwin. It showed a darling little girl plucking a daisy that turned out to be a countdown to nuclear holocaust. George Will, who supported Goldwater, considered it to be within appropriate bounds. By contrast, the Johnson campaign "quietly and quickly pulled the ad, and it never ran again. But the networks (only three of 'em, remember?) duly registered the GOP ire and—to show people what all the fuss was about—ran "Daisy" ad nauseam. Result: The one-time-only spot was shown over and over. And under the aegis of newscasts, it undoubtedly picked up credibility along the way." Drew Babb, "The Legacy of One 'Daisy,'" Sunday Opinion, *Washington Post*, September 7, 2014.

19. Aki Ito, "DeLong Says 'Not Time to Cut U.S. Budget with Free Lunch,'" *Bloomberg Business*, March 13, 2013.
20. In summarizing the economic impact of sequestration, one observer got sarcastic: "The sequester may or may not have been 'mindless,' but it really wasn't all that 'austere.' Discretionary spending has plateaued because of the budget caps and the sequester, but it has not been cut significantly from 2009 levels. Of course, the GAO did report that precisely one government employee lost his job as a result of the sequester. God protect us from such austerity." Michael Tanner, "Obama's 'Mindless Austerity': Don't worry—he wants more deficits and more debt, but he also wants higher taxes," *National Review Online*, February 4, 2015. See United States Government Accountability Office, "2013 SEQUESTRATION: Agencies Reduced Some Services and Investments, While Taking Certain Actions to Mitigate Effects," March 2014.
21. Paul Krugman claimed that Republicans had graduated from "stupid" to "crazy!" Paul Krugman, "The Crazy Party," *New York Times*, September 20, 2013.
22. It is no consolation that the president had agreed to negotiate on issues related to the "budget," unlike those surrounding the debt ceiling. "President Obama has asserted that his health law has 'nothing to do with the budget.' His argument is eagerly echoed by an at-best ignorant media. The Affordable Care Act was passed under 'reconciliation'—a legislative process that is used only for budget measures and which limits congressional debate." Kevin Hassett and Abby McCloskey, "Obama Rewrites Debt-Limit History," *Wall Street Journal*, October 4, 2013.
23. Savanna Guthrie, *Meet the Press*, October 7, 2013, available at http://www.nbcnews.com/video/meet-the-press/53201098.
24. Obviously, the debt ceiling law should be repealed forthwith, but don't stake your life on it. At least President Obama's strategy of not negotiating on any conditions for raising the ceiling proved to be genuinely inspired, unlike the Republican counter-strategy. For a time it seemed that the favorable outcome of the partial shutdown for the president, his party, and America itself may have contributed to avoiding comparable confrontations down the road. But another debt-ceiling crisis became more probable in February 2014 when Republican leaders—apparently having learned nothing from the partial shutdown—again promised that meeting some conditions would be a quid pro quo for the necessary action to suspend the ceiling.
25. Personal communication, July 21, 2012.
26. David Greenlaw, James D. Hamilton, Peter Hooper, and Frederic S. Mishkin, "Crunch Time: Fiscal Crises and the Role of Monetary Policy," prepared for the US Monetary Policy Forum, New York City, February 22, 2013; also see comments by Governor Jerome H. Powell, "Discussion of 'Crunch Time: Fiscal Crises and the Role of Monetary Policy,'" and Eric S. Rosengren, president of the Federal Reserve Bank of Boston, "Comments on the Paper 'Crunch Time: Fiscal Crises and the Role of Monetary Policy.'" Previously,

an exceptionally well-done related *FEDS* paper on the mechanics of the Fed's presumed exit from quantitative easing, of the Fed's interest payments on bank reserves, and of the impact of capital losses on actual Treasury remittances over time appeared in early 2013: 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," Board of Governors of the Federal Reserve System, *Finance and Economics Discussion Series, 2013-01*, January 2013.

27. The citations are William G. Gale and Peter R. Orzsag, "The Economic Effects of Long-Term Fiscal Discipline," Tax Policy Center Discussion Paper, 2002; Vincent Reinhart and Brian Sack, "The Economic Consequences of Disappearing Government Debt," *Brookings Papers on Economic Activity 2000:2*; Noriaki Kinoshita, "Government Debt and Long-Term Interest Rate," *IMF Working Paper 06/63*, 2006; Thomas Laubach, "New Evidence on the Interest Rate Effects of Budget Deficits and Debt," *Journal of the European Economic Association* 7, 2009; and Emanuele Baldacci and Manmohan S. Kumar, "Fiscal Deficits, Public Debt, and Sovereign Bond Yields," *IMF Working Paper WP/10/184*, 2010.
28. Congressional Budget Office, *The Budget and Economic Outlook*: 2014–2024, February 2014, Summary Table 1, p. 2.

Chapter 10 Appendix

1. Ben S. Bernanke, "Some Thoughts on Monetary Policy in Japan," speech delivered at the Japan Society of Monetary Economics, May 31, 2003, pp. 8–9.
2. Robert Barro, "The Ricardian Approach to Budget Deficits," *Journal of Economic Perspectives* 3, no. 2, Spring 1989.
3. Chairman Ben S. Bernanke, "Monetary Policy since the Onset of the Crisis," Speech at the Federal Reserve Bank of Kansas City Economic Symposium, Jackson Hole, Wyoming, August 31, 2012.
4. Of course, currency held by either the public or banks, which bears no interest, is totally irrelevant to the issue because the demand by either entity would be unaffected by the introduction of interest on reserves or the Fed's heavy purchases of securities.
5. I am incredibly grateful to Chairman Ben Bernanke for his public comment at his monetary policy testimony of February 27, 2013, when he went out of his way both in his prepared remarks and the Q & A session to make crystal clear that the CBO's measure of government debt "held by the public" actually includes Federal Reserve ownership of Treasury securities. (My nomenclature calls that concept net* debt.) In contrast to his clarity, the Board's *Semiannual Monetary Policy Report to the Congress* as well as the relevant CBO report, both released in February 2013, had left undefined the meaning of the identical idiosyncratic usage of "debt held by the public." (By February 2014, CBO had become explicit. Congressional Budget Office, *The Budget and Economic Outlook*: 2014–2024, February 2014, footnote 12, p. 16.) Bernanke's initially puzzling comment directly led me to undertake the dense but instructive analysis in this appendix.
6. The analysis of QE in this appendix—and in the book in general—can be compared with that of the FOMC members in Minutes of the Federal Open Market Committee meeting, December 17–18, 2013, pp. 2–3:

    > The staff presented a short briefing summarizing a survey that was conducted over the intermeeting period regarding participants' views of the marginal costs and marginal efficacy of asset purchases. Most participants judged the marginal costs of asset purchases as unlikely to be sufficient, relative to their marginal benefits, to justify ending the purchases now or relatively soon; a few participants identified some possible costs

as being more substantial, indicating that the costs could justify ending purchases now or relatively soon even if the Committee's macroeconomic goals for the purchase program had not yet been achieved. Participants were most concerned about the marginal cost of additional asset purchases arising from risks to financial stability, pointing out that a highly accommodative stance of monetary policy could provide an incentive for excessive risk-taking in the financial sector. It was noted that the risks to financial stability could be somewhat larger in the case of asset purchases than in the case of interest rate policy because purchases work in part by affecting term premiums and policymakers have less experience with term premium effects than with more conventional interest rate policy. Participants also expressed some concern that additional asset purchases increase the likelihood that the Federal Reserve might at some point suffer capital losses. But it was pointed out that the Federal Reserve's asset purchases would almost certainly provide significant net income to the Treasury over the life of the program, especially when the effects of the program on the broader economy were taken into account, and that potential reputational risks to the Federal Reserve arising from any future capital losses could be mitigated by communicating that point to the public. Further, participants noted that ongoing asset purchases could increase the difficulty of managing exit from the current highly accommodative policy stance when the time came. Many participants, however, expressed confidence in the tools at the Federal Reserve's disposal for managing its balance sheet and for normalizing the stance of policy at the appropriate time. Regarding the marginal efficacy of the purchase program, most participants viewed the program as continuing to support accommodative financial conditions, with a number of them pointing to the importance of purchases in serving to enhance the credibility of the Committee's forward guidance about the target federal funds rate. A majority of participants judged that the marginal efficacy of purchases was likely declining as purchases continue, although some noted the difficulty inherent in making such an assessment. A couple of participants thought that the marginal efficacy of the program was not declining, as evidenced by the substantial effects in financial markets in recent months of news about the likely path of purchases.

Chapter 11

1. Personal communications on March 27 and April 1, 2009.
2. National Monetary Commission, *Report on Banking and Central Banking*, Government Printing Office: Washington, DC, 1910 and 1911; Nelson W. Aldrich, *The Work of the National Monetary Commission,* Sen. Doc. No. 406, 61st Cong., 2nd Session, Government Printing Office: Washington, DC, 1910; and the January 9, 1912, "Aldrich Plan" incorporating draft legislation, Report of the National Monetary Commission, Sen. Doc. No. 243, 62nd Cong., 2nd Session, Government Printing Office: Washington, DC; and Financial Crisis Inquiry Commission, *The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*, Public Affairs, January 2011.
3. Gregory D. L. Morris, "The Secret Meeting That Launched the Federal Reserve: Echoes," *Bloomberg Business*, February 15, 2012.
4. Gerald T. Dunne, *A Christmas Present for the President: A Short History of the Creation of the Federal Reserve System*, The Federal Reserve Bank of St. Louis, 1963, p. 6.
5. Similarly, *The Squam Lake Report* by 15 financial economists was published in May 2010, two months *before* the Dodd-Frank legislation that implemented some of its recommendations to reform the financial system. Kenneth R. French, Martin N. Baily, John Y. Campbell, John H. Cochrane, Douglas W. Diamond, Darrell Duffie, Anil K. Kashyap,

Frederic S. Mishkin, Raghuram G. Rajan, David S. Scharfstein, Robert J. Shiller, Hyun Song Shin, Matthew J. Slaughter, Jeremy C. Stein, René M. Stulz, *The Squam Lake Report: Fixing the Financial System*, Princeton University Press, 2010.

6. Andrew W. Lo, "Reading About the Financial Crisis: A 21 Book Review," January 9, 2012, p. 1, prepared for the *Journal of Economic Literature.*
7. Gordon Gekko personifies Hollywood's vision of the true character of a capitalist in the financial services industry, being a fictionalized protagonist in two movies: *Wall Street* in 1987 and *Wall Street: Money Never Sleeps* in 2010. "Greed, for lack of a better word, is good," he said in the first movie. "Mr. Gekko, a creation of the movie's co-writers, Oliver Stone and Stanley Weiser, was a high rolling trader who flouted securities laws to manipulate stocks and bilk investors." (Jenny Strasburg and Reed Albergotti, "Insider Targets Expanding: FBI Is Building Cases on 1120 People for Alleged Illegal Trading, Enlists Douglas," *Wall Street Journal*, February 28, 2012.) On the off chance that the reader has any interest in the truth on this matter, note that the father of modern conservatism, Edmund Burke, in fact decried the avarice of the East India Company, a monopolist sponsored by the British government. (See Jerry Z. Muller, *The Mind and the Market: Capitalism in Modern European Thought,* Alfred A. Knopf, 2002, pp. 121–126.) Max Weber later made a related observation:

   > In the new preface for *The Protestant Ethic and the Spirit of Capitalism* written toward the end of his life, Weber took issue with those who identified capitalism with unscrupulous greed. The impulse to acquisition, he wrote, was itself not a defining characteristic of capitalism. That desire exists at all times. "It should be taught in the kindergarten of cultural history that this naïve idea of capitalism must be given up once and for all. *Unlimited greed for gain is not in the least identical with capitalism, and is still less its spirit*," Weber asserted, [Max Weber, "Vorbermerkung," in *Gesamtausgabe Ausätzezur Religions-soziologie*, vol.1 (Tübingen,1988 = 1920 edition), p. 4; Max Weber, *The Protestant Ethic and the Spirit of Capitalism,* trans. Talcott Parsons, New York, 1958, p. 17.] for in fact, "the universal reign of absolute unscrupulousness in the pursuit of selfish interests by the making of money has been a specific characteristic of precisely those countries whose bourgeois-capitalistic development . . . has remained backward." He dubbed the notion that modern capitalism is characterized by *greater* greed than other forms of life "the illusions of modern romanticists." [Max Weber, "Die protestanische Ethic und der Geist des Kapitalismus," in Weber, *Gesamtausgabe Ausätzezur Religions-soziologie*, pp. 38–42; *Protestant Ethic*, pp. 56–57. (Jerry Z. Muller, *Capitalism and the Jews*, Princeton University Press, 2010, p. 55.)]

   Along these lines, while I myself don't put much value on making big bucks, I don't begrudge anyone else the right to do so, just so long as their activity is legal. A leading virtue of a capitalist, democratic system is precisely that one is permitted to pursue happiness legally by one's own lights, whether or not those lights are "politically correct." For example, media criticism in March 2012 in association with hearings conducted by Senator Carl Levin (Democrat, Michigan) of the pursuit of profits by employees at Goldman Sachs was misguided. It failed to distinguish the earlier transition from the old days of a mainly investment-banking orientation emphasizing the interests of clients to the new days with a largely market-making and trader orientation. More recent sophisticated counterparties need to, and actually want to, look out for themselves in pursuing their own interests. (Not that the behavior of certain employees at Goldman Sachs was sufficiently seemly that I'd be willing to engage in it myself! Indeed, in early August 2013, the Securities and Exchange Commission won a civil case in court alleging that Goldman Sachs employee Fabrice Tourre had committed fraud during the financial crisis.

Still, Adam Smith explained in 1776 that, with a surrounding legal structure designed to punish force or fraud, markets are guided as if by an "invisible hand" to reconcile diverse private interests with the public interest. But don't expect the reactionary editors of the op-ed page of the *New York Times* or certain hidebound Senate Democrats to have assimilated already such new-fangled notions.)

8. At least the report discussed the GSEs. For a treatment of the sources of the financial meltdown that doesn't even mention them or federal housing policy at all, if you can believe it, see the first part that ran on April 24, 2012, of the two-part PBS program, "Money, Power, and Wall Street," *Frontline*, which allegedly "tells the inside story of the global financial crisis."
9. Dissenting Statement, "Introduction," December 24, 2011, in Financial Crisis Inquiry Commission, *The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*, PublicAffairs, January 2011, and his full dissent on the Commission's website www.fcic.gov. A number of his related papers can be found on the American Enterprise Institute website, http://www.aei.org/. In early 2015, he published a book with his view how governmental housing regulations engendered the financial meltdown and remain a threat: Peter J. Wallison, *Hidden in Plain Sight: What Really Caused the World's Worst Financial Crisis and Why It Could Happen Again*, Encounter, 2015. His analysis relied on a new data set constructed by Edward Pinto. Particularly interesting in overturning conventional wisdom is Wallison's Chapter 7 (p. 182–218), which is entitled "Force Fed: Why the Affordable Housing Goals, and Not Market Share or Profit, Were the Sole Reason the GSEs Acquired Nontraditional Mortgages." For a similar interpretation to Wallison's, see W. Scott Frame, Andreas Fuster, Joseph Tracy, and James Vickery, "The Rescue of Fannie Mae and Freddie Mac," *Federal Reserve Bank of New York Staff Reports, no. 719*, March 2015.

    I am indebted to Philip Wellons for pointing out that many observers, however, are persuaded by counter-arguments to the assertion that Fannie and Freddie played a pivotal role. See, for example, articles during 2008–2012, such as these by Paul Krugman in the *New York Times*:

    "Fannie, Freddie and You," July 14, 2008, http://www.nytimes.com/2008/07/14/opinion/14krugman.html?_r=0.
    "Things Everyone in Chicago Knows," Krugman blog, June 3, 2010, http://krugman.blogs.nytimes.com/2010/06/03/things-everyone-in-chicago-knows/?_r=0.
    "Fannie Freddie Follies," December 20, 2011, http://krugman.blogs.nytimes.com/2011/12/20/fannie-freddie-follies/.

    A similar viewpoint is adopted in the recent book by Alan Blinder to be discussed in detail below.
10. Alan S. Blinder, *After the Music Stopped: The Financial Crisis, the Response, and the Work Ahead*, Penguin Press, 2013, pp. 288–9.
11. US Department of the Treasury, *Financial Regulatory Reform: A New Foundation—Rebuilding Financial Supervision and Regulation*, Washington, DC: US Government Printing Office, June 3, 2009.
12. Timothy Geithner, then Treasury Secretary, can't be accused of intellectual inconsistency over time. Five years later, his analysis still misdiagnosed the fundamental source of the crisis and mentioned only fleetingly the government's crucial affordable housing mandates and effects on underwriting standards and the GSEs before cavalierly dismissing their influence. (Timothy F. Geithner, *Stress Test: Reflections on Financial Crises*, Crown Publications, 2014, pp. 389–391.)
13. Andrew G. Haldane and Vasileios Madouros, "The Dog and the Frisbee," presented at the Federal Reserve Bank of Kansas City's 36th economic policy symposium, "The

Changing Policy Landscape," Jackson Hole, Wyoming, August 31, 2012, p. 10. I've never encountered an economist's paper so well written. Caroline Baum, as did I, liked one of his subsequent phrases in Raymond Zhong, "The Banker Who Cried 'Simplicity'," The Weekend Interview with Andrew Haldane, *Wall Street Journal*, December 21–22, 2013. She wrote, "Rarely have I read more intelligent words on the subject of financial regulation than those of Andrew Haldane, the Bank of England's director for financial stability, in the *Wall Street Journal*'s weekend interview. He says that somewhere along the line, 'the goal of financial regulation became to capture every raindrop rather than to look out for thunderstorms.'" (Caroline Baum, "Baum on Money: Looking for Storms, Not Raindrops," *Bloomberg Business*, December 23, 2013.)

14. Charlie Gasparino, "Why Financial Reform Won't Work," *The Daily Beast*, June 26, 2010.
15. Statement by Chairman Ben S. Bernanke, *Press Release*, Board of Governors of the Federal Reserve System, July 15, 2010.
16. Sheila Bair, *Bull by the Horns: Fighting to Save Main Street from Wall Street and Wall Street from Itself,* Free Press, 2012.
17. Randall Smith and Aaron Lucchetti, "Biggest Banks Manage to Dodge Some Bullets," *Wall Street Journal*, June 26–27, 2010. I got to know Patrikis early in my Board career.
18. Let me invoke the author's prerogative here in saying that the bureau's ultimate translation of the incompressible language of the common mortgage contract into everyday prose alone is sufficient to justify its existence. The worst experience of my life to date involved sitting through a lawyer's explanation of an impenetrable trust contract two decades ago, which was more horrible than the surgery to remove my tonsils.
19. David Skeel, *The New Financial Deal: Understanding The Dodd-Frank Act And Its (Unintended) Consequences*, John Wiley and Sons, 2011, pp. 156–7.
20. Victoria McGrane and Jon Hilsenrath, "Fed Writes Sweeping Rules from Behind Closed Doors," *Wall Street Journal,* February 21, 2012. By late October 2013, "more than three years after Dodd-Frank was enacted, only 40 percent of the rules required under Dodd-Frank have been finalized, another 30 percent have been proposed, and another 30 percent have not yet been proposed, according to Davis Polk & Wardwell, a law firm that is tracking the Dodd-Frank rulemaking progress." (John W. Schoen, "Policing Banks: The Feds' Big Fail," CNBC.com, October 31, 2013.)
21. William D. Cohan, "Ending the Moral Rot on Wall Street, Part 2," *Bloomberg Business*, August 15, 2011.
22. Dawn Kopecki, "The Banker Who Took on Bernanke," *Washington Post*, September 18, 2011.
23. Aki Ito, Craig Torres and Joshua Zumbrun, "Shirakawa Says Central Banks Must Consider Risks of Low Rates," *Bloomberg Business*, March 25, 2012.
24. Shortly after the July 18, 2012 monetary policy testimony before the same House committee, an op-ed piece revealed the committee's estimate that private sector compliance with the higher 224 regulations by then completed would necessitate a little more than 24 million person-hours. (See Representative Jeb Hensarling, a Republican from Texas, "Dodd-Frank's Unhappy Anniversary," *Wall Street Journal*, July 26, 2012.) Both at that hearing and at a hearing of the same committee with Treasury Secretary Timothy Geithner on July 25, 2012, Representative Barney Frank, ranking Democratic member, extolled the bipartisanship of Ben Bernanke. Frank emphasized that he was appointed by President George W. Bush to the Board, then to the chairmanship of the Council of Economic Advisers, and then to a first term as chairman of the Board. All of this background proved Bernanke's objectivity, at least insofar as not being congenitally biased in favor of the Dodd-Frank bill owing to its sponsorship by members of the Democratic Party. Frank went on to say that when considering the uncertainties currently restraining the

economy, neither Chairman Bernanke's written testimony nor the accompanying *Semi-annual Monetary Policy Report to the Congress* made any mention whatsoever of any retardation from the Dodd-Frank Act, so there must not have been any. In his oral response, Bernanke attempted to walk back this justification for drawing any such inference, but his statement was so diplomatic that I'm afraid the import of his clarification was lost on everyone. Incidentally, Frank neglected to mention an alternative interpretation—that the original absence of any mention of adverse incentives pointed less to the sources of economic weakness and more to an omission in the written testimony and report.

25. The Editorial Board, "Bedeviled by Details," *Wall Street Journal*, August 23, 2013.
26. Azy Paybarah, "Bloomberg: 'Plain and Simple,' Congress caused the mortgage crisis, not the banks," *Capital*, November 1, 2011.
27. Paul Volcker, "Financial Reform: Unfinished Business," *New York Review of Books*, November 24, 2011, p. 8.
28. David Brooks, "Who Is James Johnson," *New York Times*, June 7, 2011.
29. Elizabeth MacDonald, "Fannie and Freddie Reflate Housing?" *Emac's Bottom Line, Fox Business*, March 20, 2012. She added more later, quoting from the *Boston Globe*:

    > On the problems at the insolvent Fannie Mae and Freddie Mac, two companies he had duties to oversee and regulate while in Congress . . . "I was late in seeing it, no question."
    >
    > "Frank, in his most detailed explanation to date about his actions, said in an interview he missed the warning signs because he was wearing ideological blinders."
    >
    > In July 2008, then-Treasury Secretary Henry Paulson called Frank and told him the government would need to spend "billions of taxpayer dollars to backstop the institutions from catastrophic failure," according to Paulson's recent book. Frank, despite that conversation, appeared on national television two days later and said the companies were "fundamentally sound, not in danger of going under." (See Elizabeth MacDonald, "#mythoughtsarefacts," *Emac's Bottom Line, FOXBusiness*, November 7, 2013.)

30. Edward Pinto, "How Fannie, Freddie and Politicians Caused the Crisis," *RealClearMarkets*, January 12, 2012.
31. Edward Pinto, "Crime Scene Investigation: The Premeditated Assault on the Prime Mortgage," *RealClearMarkets*, August 15, 2012.
32. Nick Timiraos, "FHA, Facing Losses, Likely to Tap Treasury," *Wall Street Journal*, September 26, 2013, and Dina ElBoghdady, "FHA to Draw on $1.7 billion in Taxpayer Funds: Subsidy a First for Agency: Money will cover losses, maintain cash cushion," *Wall Street Journal*, September 28, 2013.
33. A roadmap is provided in *House of Cards: Reforming America's Housing Finance System,* Satys Thallam, ed., Mercatus Center, George Mason University, March 2012.
34. Nick Timiraos, "Jumbo Mortgage Hit Milestone," *Wall Street Journal*, September 5, 2013. Instead, in effect as a Christmas present for new homeowners, Mel Watt, the new head of the Federal Housing Finance Agency starting on January 6, 2014, said two weeks earlier that he intended to postpone another hike in the GSE's mortgage fees scheduled for April 1, 2014.
35. Nick Timiraos, "Loan Size to Be Cut for Fannie, Freddie," *Wall Street Journal*, September 9, 2013.
36. See Viral V. Acharya, Matthew Richardson, Stijn Van Nieuwerburgh, and Laurence J. White, *Guaranteed to Fail: Fannie Mae, Freddie Mac, and the Debacle of Mortgage Finance*, Princeton University Press, 2011, pp. 139–141.
37. The rationale for the complete selloff of the Fed's MBS is microeconomic not macroeconomic. But in June 2013 the FOMC instead decided to allow those securities to mature.

38. For a comparison of all four bills, see Structured Finance Industry Group, May 18, 2014, http://www.sfindustry.org/uploads/GSELegislativeProposalsComparison.pdf.
39. After the takeover, the two GSEs had required a gross infusion of $188 billion in taxpayer funds. The Treasury decided in August 2012 that henceforth it alone would get all of their profits. Around year-end 2013, the two GSEs repaid the Treasury in full, but the payments kept coming.
40. See, for example, Edward J. Pinto, "Government Housing Policies in the Lead-up to the Financial Crisis: A Forensic Study," Discussion Draft, November 4, 2010. It also vindicated the aforementioned dissent to the report of the FCIC that cited Pinto's research by Peter J. Wallison, Arthur F. Burns Fellow in Financial Policy Studies at the American Enterprise Institute. (See Dissenting Statement, "Introduction," December 24, 2011, in Financial Crisis Inquiry Commission, *The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*, PublicAffairs, January 2011, p. 441, and his full dissent on the Commission's website, www.fcic.gov. A number of his related papers can be found on the American Enterprise Institute website http://www.aei.org/.) After the release of the suit, these two authors summarized the SEC's findings in Peter J. Wallison and Edward Pinto, "Why the Left Is Losing the Argument over the Financial Crisis," *The American: The Journal of the American Enterprise Institute*, December 27, 2011. Also see Peter J. Wallison and Edward J. Pinto, "Free fall: How government policies brought down the housing market," American Enterprise Institute, April 26, 2012. Pinto's refined estimates were highlighted in Peter J. Wallison, *Hidden in Plain Sight: What Really Caused the World's Worst Financial Crisis and Why It Could Happen Again*, Encounter, 2015.
41. Alan S. Blinder, *After the Music Stopped: The Financial Crisis, the Response, and the Work Ahead*, Penguin Press, 2013. He introduced the discussion of the housing bubble on p. 32. The quotation appeared on p. 352.
42. Paul Sperry, "Frank Fesses Up: Gov't Shares Blame For Financial Crisis," *Investor's Business Daily*, September 26, 2013.
43. Jed S. Rakoff, "The Financial Crisis: Why Have No High-Level Executives Been Prosecuted?" *New York Review of Books,* January 9, 2014, pp. 4–5.
44. Alan Greenspan, "Government-Sponsored Enterprises," testimony before the Committee on Banking, Housing, and Urban Affairs, US Senate, February 24, 2004; Alan Greenspan, "Regulatory Reform of the Government-Sponsored Enterprises," testimony before the Committee on Banking, Housing, and Urban Affairs, US Senate, April 6, 2005; and Alan Greenspan, "Government-Sponsored Enterprises," remarks to the Conference on Housing, Mortgage Finance, and the Macroeconomy, Federal Reserve Bank of Atlanta, Atlanta, Georgia, May 19, 2005. Also see Viral V. Acharya, T. Sabri Öncü, Matthew Richardson, Stijn Van Nieuwerburgh, and Laurence J. White, "The Government-Sponsored Enterprises," Chapter 14 in Viral V. Acharya, Thomas F. Cooley. Matthew Richardson, and Ingo Walter, eds., *Regulating Wall Street: The Dodd-Frank Act and The New Architecture of Global Finance*, New York University Stern School of Business, John Wiley and Sons, 2011, http://www.wiley.com/buy/9780470768778; Viral V. Acharya, Matthew Richardson, Stijn Van Nieuwerburgh, and Laurence J. White, *Guaranteed to Fail: Fannie Mea, Freddie Mac, and the Debacle of Mortgage Finance*, Princeton University Press, 2011, pp. 29–30, http://www.stern.nyu.edu/Newsroom/FacultyResearch/CON_024693); and Gretchen Morgenson and Joshua Rosner, *Reckless Endangerment: How Outsized Ambition, Greed, and Corruption Led to Economic Armageddon*, Times Books, 2011, pp. 251–3.
45. For papers that insufficiently appreciated the role of the various crisis-era programs in avoiding a collapse of the financial system à la the one during the Great-Depression, see Peter J. Wallison, "The Error at the Heart of the Dodd-Frank Act," *AEI Outlooks*

& On The Issues, September 6, 2011; Peter J. Wallison, "Magical Thinking: The Latest Regulation from the Financial Stability Oversight Council," American Enterprise Institute for Public Policy Research, *Financial Services Outlook,* October–November 2011; Peter J. Wallison, "False 'Interconnectivity' Theories Give Us Poisonous Dodd-Frank," *RealClearMarkets*, November 18, 2011; Peter J. Wallison, "Dodd-Frank and the Myth of 'Interconnectedness," *Wall Street Journal*, February 10, 2012; John H. Cochrane, "Lessons from the Financial Crisis," *Regulation*, Winter 2009–2010; John B. Taylor, "Big Think Interview with John Taylor: More Ideas from Taylor," Transcript of interview on December 21, 2009, January 19, 2010, p. 10; and John B. Taylor, "Getting Off Track and the Panic of 2008 Revisited ," *Economics One, A Blog by John B. Taylor*, Tuesday, February 21, 2012. For a critique of the positions of Cochrane and Taylor, see Paul Krugman, "It Was Lehman Wot Did It," *Conscience of a Liberal*, February 14, 2012. Krugman cites the apt, if uncharitable, blog posts "Mind-Boggling Nonsense from John Cochrane," *Economics of Contempt: Thoughts on, inter alia, finance, economics, and politics*, February 14, 2010, and "A Few More Assorted Thoughts on Financial Reform," *Economics of Contempt: Thoughts on, inter alia, finance, economics, and politics*, Friday, January 22, 2010. Taylor, however, still supported many of the Fed's initiatives after late September 2008. See John B. Taylor, "Commentary: Monetary Policy after the Fall," Symposium "Macroeconomic Challenges: The Decade Ahead," Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 28, 2010, p. 6.

46. "Yahoo to Lay off 2000 Workers: Panel issues rule for non-bank firms," *Washington Post*, April 5, 2012.
47. Ben S. Bernanke, "Fostering Financial Stability," at the 2012 Federal Reserve Bank of Atlanta Financial Markets Conference, Stone Mountain, Georgia, April 9, 2012. This speech gives an overview of the Fed's many efforts in this area.
48. Paul Volcker, "Panel 4: The 1980s in Retrospect," *History of the 1980s—Lessons for the Future: Volume II: Symposium Proceedings,* January 17, 1997, p. 90.
49. Kenneth R. French, Martin N. Baily, John Y. Campbell, John H. Cochrane, Douglas W. Diamond, Darrell Duffie, Anil K. Kashyap, Frederic S. Mishkin, Raghuram G. Rajan, David S. Scharfstein, Robert J. Shiller, Hyun Song Shin, Matthew J. Slaughter, Jeremy C. Stein, René M. Stulz, *The Squam Lake Report: Fixing the Financial System*, Princeton University Press, 2010, p. 142. (The SEC was the same agency that had failed to prosecute Bernard Madoff before the belated confessions of his sons in December 2008, although Harry Markopolos had repeatedly warned it that Madeoff had been running a long-standing Ponzi scheme.)
50. Indeed, one study places significant blame for the crisis and associated severe recession on the financial regulators *themselves*: James R. Barth, Gerard Caprio Jr., and Ross Levine, *Guardians of Finance: Making Regulatory Work for Us*, MIT Press, 2012.
51. Charles A. E. Goodhart, Anil K Kashyap, Dimitrios P. Tsomocos, Alexandros P. Vardoulakis, "An Integrated Framework for Multiple Financial Regulations," prepared for the Board of Governors of the Federal Reserve System and International Journal of Central Banking conference on "Central Banking: Before, During, and After the Crisis," March 23/24, 2012, p. 0.
52. Jane Dokko, Brian Doyle, Michael T. Kiley, Jinill Kim, Shane Sherlund, Jae Sim, and Skander Van den Heuvel. "Monetary Policy and the Housing Bubble," *Economic Policy* 26, April 2011, pp. 276–277.
53. Hester Peirce, "It's Time to Ask If Dodd-Frank Will Help, or Hinder?" *RealClearMarkets*, August 28, 2013.
54. Paul Volcker, "Financial Reform: Unfinished Business," *New York Review of Books*, November 24, 2011, p. 10.
55. "Jamie Dimon on Financials and Europe," CNBC Video, August 10, 2011.

56. Daniel Wagner, "JPMorgan Chase Discloses $2 billion Trading Loss," *Associated Press*, May 11, 2012, accessible at http://www.sandiegouniontribune.com/news/2012/may/11/tp-chase-discloses-2b-trading-loss/. A later story on the incident was Jessica Silver-Greenberg and Susanne Craig, "JPMorgan Trading Loss May Reach $9 Billion," *DealB%k*, Andrew Ross Sorkin, founder, *New York Times*, June 28, 2012. On the first page they wrote, "Nonetheless, the sharply higher loss totals will feed a debate over how strictly large financial institutions should be regulated and whether some of the behemoth banks are capitalizing on their status as too big to fail to make risky trades." They obviously meant "capitalizing on their status as 'too big to fail' to make risky trades." But things had reached such a state that I initially misread their text to say "capitalizing on their status as 'too big' to fail to make risky trades."
57. Todd E. Petzel, "The Only Perfect Hedge Is in an English Garden," Offit Capital, July 1, 2012, p. 3. He concluded, "These lessons cannot be taught by regulators. Regulators, almost by definition, lag behind even average managements of the firms they oversee. To avoid these kinds of problems in the future requires boards of directors to be active participants in demanding the best risk management practices at their firms" (p. 3). I'm not sure his solution realistically will work very well. But I agree with him about leaving our fate to regulators, so I end up opposing trying to regulate every detail of hedging at commercial banks, à la the Volcker rule in Dodd-Frank. Instead, I support strictly prohibiting them from engaging in any investment banking activities, à la the Glass-Steagall law, as subsequent paragraphs in this chapter explain more fully.
58. See US Senate, Permanent Subcommittee on Investigations, "JPMorgan Chase Whale Trades: A Case History of Derivatives Risks and Abuses," Washington, DC, March 15, 2013. Levine quoted the report at length:

    In December 2011, JPMorgan Chase instructed the CIO to reduce its Risk Weighted Assets (RWA) to enable the bank, as a whole, to reduce its regulatory capital requirements. In response, in January 2012, rather than dispose of the high risk assets in the SCP—the most typical way to reduce RWA—the CIO launched a trading strategy that called for purchasing additional long credit derivatives to offset its short derivative positions and lower the CIO's RWA that way. That trading strategy not only ended up increasing the portfolio's size, risk, and RWA, but also, by taking the portfolio into a net long position, eliminated the hedging protections the SCP was originally supposed to provide.

    In the first quarter of 2012, the CIO traders went on a sustained trading spree, eventually increasing the net notional size of the SCP threefold from $51 billion to $157 billion. By March, the SCP included at least $62 billion in holdings in a U.S. credit index for investment grade companies; $71 billion in holdings in a credit index for European investment grade companies; and $22 billion in holdings in a U.S. credit index for high yield (non-investment grade) companies. Those holdings were created, in part, by an enormous series of trades in March, in which the CIO bought $40 billion in notional long positions which the OCC later characterized as "doubling down" on a failed trading strategy. By the end of March 2012, the SCP held over 100 different credit derivative instruments, with a high risk mix of short and long positions, referencing both investment grade and non-investment grade corporations, and including both shorter and longer term maturities. JPMorgan Chase personnel described the resulting SCP as "huge" and of "a perilous size" since a small drop in price could quickly translate into massive losses. (Matt Levine, "New York Fed Caught Sight of London Whale and Let Him Go," *Bloomberg Business*, October 5, 2014.)

59. Peter Coy, "How Big Losses Distorted JPMorgan's Sense of Reality," *Bloomberg Businessweek Markets and Finance*, March 15, 2013.

60. Sheila Bair, "Regulators Let Big Banks Look Safer Than They Are," *Wall Street Journal*, April 2, 2013.
61. Scott Patterson and Deborah Solomon, "A Simple Bank Rule Proves Difficult to Write," *Wall Street Journal*, September 11, 2013. This article gave a depressing account of how bureaucratic "turf battles" led to protracted infighting among the five agencies that went well beyond the inherent problems of implementing the Volcker rule. It also usefully catalogued what had been accomplished versus what remained to be done.
62. Goldman Sachs had been joined by Morgan Stanley in these two sentences in earlier drafts, but the reference had to go after its former chief economist, John Paulus, said that Morgan Stanley has issued retail deposits of very roughly $100 billion.
63. Thomas Hoenig, now vice chairman of the FDIC and previously president of the Kansas City Fed, enunciated a more limited proposal that in my view didn't deal adequately with bank hedging. He would have allowed narrow banks to take deposits, make loans, provide stock and bond underwriting, and offer advisory services but prohibit market making and proprietary and customer trading of securities and derivatives, *except* to hedge its assets and liabilities. See Thomas M. Hoenig and Charles S. Morris, "Restructuring the Banking System to Improve Safety and Soundness," Federal Reserve Bank of Kansas City, May 2011, revised December 2012. A bipartisan group of Senators, including Elizabeth Warren (Democrat, Massachusetts) and John McCain (Republican, Arizona), more nearly approximated my position by introducing legislation in July 2013 to reinstate most of the Glass-Steagall provisions.
64. The Editorial Board, "A Dodd-Frank Capitulation," *Washington Post*, September 6, 2013.
65. Floyd Norris, "Banks Again Avoid Having Any Skin in the Game," *New York Times*, October 23, 2014.
66. Alan S. Blinder, "Five Years Later, Financial Lessons Not Learned," *Wall Street Journal*, September 11, 2013.
67. The Editorial Board, "A Dodd-Frank Capitulation," *Washington Post*, September 6, 2013.
68. Alan Zibel and Andrew Ackerman, "Softened Mortgage Rule Advances," *Wall Street Journal*, June 11, 2014.
69. Jeffrey Friedman and Wladimir Kraus, *Engineering the Financial Crisis: Systemic Risk and the Failure of Regulation*, University of Pennsylvania Press, 2011
70. Sheila Bair, "Regulators Let Big Banks Look Safer Than They Are," *Wall Street Journal*, April 2, 2013.
71. For an analysis of the interplay between the Dodd-Frank Act and Basel III see Viral V. Acharya, "The Dodd-Frank Act and Basel III: Intentions, Unintended Consequences, and Lessons for Emerging Markets," *ADBI Working Paper 392*, Asian Development Bank Institute, October 2012, http://www.adbi.org/workingpaper/2012/10/29/5292.dodd.frank.act.basel.iii.emerging.markets/. Also see his earlier coauthored work: Viral V. Acharya, Thomas F. Cooley, Matthew Richardson, and Ingo Walter, eds., *Regulating Wall Street: The Dodd-Frank Act and The New Architecture of Global Finance*, New York University Stern School of Business, John Wiley and Sons, 2010, http://www.wiley.com/buy/9780470768778; Viral V. Acharya, Thomas F. Cooley, Matthew Richardson, and Ingo Walter, *Dodd-Frank: One Year On.* NYU-Stern School of Business and Center for Economic and Policy Research e-book, 2011, http://www.voxeu.org/index.php?q=node/6742; Viral V. Acharya, Matthew Richardson, Stijn Van Nieuwerburgh, and Laurence J. White, *Guaranteed to Fail: Fannie Mae, Freddie Mac and the Debacle of Mortgage Finance.* Princeton University Press, 2011, http://www.stern.nyu.edu/Newsroom/FacultyResearch/CON_024693. Also see the *International Journal of Central Banking, Special Issue: The Theory and Practice of Macroprudential Regulation* 6, no. 4, December 2010.
72. Tom Braithweight and Patrick Jenkins, "JPMorgan chief says bank rules 'anti-US,'" *Financial Times*, September 12, 2011.
73. See Governor Daniel K. Tarullo, "Financial Stability Regulation," Speech at the Distinguished Jurist Lecture, University of Pennsylvania Law School, October 10, 2012, p. 7.

74. Andrew G. Haldane and Vasileios Madouros, "The Dog and the Frisbee," presented at the Federal Reserve Bank of Kansas City's 36th economic policy symposium, "The Changing Policy Landscape," Jackson Hole, Wyoming, August 31, 2012.
75. Financial Crisis Inquiry Commission, *The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*, PublicAffairs, January 2011, p. 3.
76. The observer was named Mitt Romney. (See James Pethokoukis, "Would Mitt Romney break up the banks? Would Paul Ryan?" *AEI Ideas: Freedom. Opportunity. Enterprise. The public policy blog of the American Enterprise Institute*, August 15, 2012.)
77. This analyst, a close economic advisor to President Bill Clinton, was named Alan Blinder. (See Alan S. Blinder, *After the Music Stopped: The Financial Crisis, The Response, and the Work Ahead*, Penguin Press, 2013, p. 5.)
78. Dashiell Bennett, "No One Will Charged with a Crime for the MF Global Collapse," *The Atlantic Wire, Yahoo News*, August 16, 2012.
79. When Mike Prell and I visited the Trading Desk at the New York Fed in 1977 shortly after I had joined the Board after six years of college teaching, I had lunch with the head of risk management at Goldman Sachs—Jon Corzine. Actually, though I tried my best to ask penetrating questions about how the firm managed its risk, I was too wet behind the ears to sound very knowledgeable, unlike him.
80. I appreciate helpful comments on the next two paragraphs by Donald Kohn, former Board vice chairman, and at the time senior fellow at the Brookings Institution. In addition, as member of the Financial Policy Committee at the Bank of England since February 11, 2011, he appeared along with Governor Mervyn King, Deputy Governor Paul Tucker, and Paul Fisher, executive director, Markets, at the Bank of England's testimony before the Treasury Select Committee on July 17, 2012. The hearing was preoccupied with the Libor scandal.
81. Gaspard Sebag and Aoife White, "Deutsche Bank to RBS Fined by EU for Rate Rigging," *Bloomberg News*, December 04, 2013.
82. An instructive op-ed piece is Gary Gensler, "Libor, Naked and Exposed," *New York Times,* August 6, 2012.
83. The Editorial Board, "New York Fed to Barclays: 'Mm hmm,'" *Wall Street Journal*, July 17, 2012. This editorial was embarrassingly ill-informed. As Chairman Bernanke explained to Senators later that day, the quoted conversations with the Barclays's employees were not with aggressive New York Fed officials doing an investigation but rather only with polite lower-level staffers obtaining daily "market color."
84. See www.parliament.uk, November 25, 2008, Mr. Mervyn King's answer to question 34 from the chairman.
85. A week after the announcement of the penalty, Diamond resigned after Governor Mervyn King indicated that he had lost the confidence of the Bank of England. I actually could sympathize with Diamond, having been on the receiving end of a forceful Tucker critique myself. The incident occurred at the previous Board conference in March 2012 to honor retiring Vice Chairman Donald Kohn, specifically in the Q & A session after Darrell Duffie's paper on risks to the plumbing of the financial system. I provocatively asked him how come his paper didn't mention the Fed's policy of imposing a small charge when banks overdrew their reserve accounts during the day. I verbally supported the Fed's fee on daylight overdrafts incurred by banks clearing payments, having gently pushed the Board in that direction in 1988 in the report of a task force that I headed up. (See *Controlling Risk in the Payments System,* Report of the Task Force on Controlling Payment System Risk to the Payment System Policy Committee of the Federal Reserve System, Board of Governors of the Federal Reserve System, August 1988.) That report had emphasized the deleterious effects of two types of externalities that would have marred the operation of a full-blown market for intraday credit. I cited in my question the opposition of William McDonough, who had replaced Gerald Corrigan as president of the

New York Fed. With the concurrence of its General Counsel Ernie Patrikis, McDonough asserted that the Board's contemplation of adopting the low daylight-overdraft price amounted to "looking over the cliff into the abyss." (Does that phrase remind you of a similar tactic leading up to automatic fiscal developments at the start of 2013?) But after Board Vice Chairman David Mullins disputed that characterization, the Board voted to implement such pricing. Paul Tucker's later animated comment responding to my question criticized the Fed's approach. Instead of pricing daylight credit, he advocated simply requiring all overdrafts to be collateralized, as consistent with the conclusions of more recent studies minimizing the threat of daylight overdrafts and supporting the alternative policy initiative. (See Federal Reserve System, "Consultation Paper on Intraday Liquidity Management and Payment System Risk Policy," *Federal Register* 71, no. 119, Docket No. OP-1257, June 21, 2006, pp. 35679–35687; Federal Reserve System, "Policy on Payments System Risk," *Federal Register* 73, no. 46, Docket No. OP-1309, March 7, 2008, pp. 12417–12443; and Financial Sector Assessment Program: United States of America, "Selected Issues on Liquidity Risk Management in Fedwire Funds and Private Sector Payment Systems: Technical Note," *Monetary And Capital Markets Department, International Monetary Fund*, May 2010.) My memory was that our study actually had argued that collateralization of daylight overdrafts also would impose implicitly a small financial burden. Duffie then wisely declined to answer my impertinent question, on the grounds that any answer could not avoid touching what obviously was "the third rail" of policy toward payments system risk. When asked privately by Duffie after the session broke up what explained the New York Reserve Bank's position, I speculated that perhaps its concern derived from a perception that the proposed fee would overly impair the financial interests of the large banks clearing through the Fed.

86. Dan Fitzpatrick and Victoria McGrane, "Stress Tests Buoy U.S. Banks: Most Big Firms Have Healthy Capital, Some Raised Dividends," *Wall Street Journal*, March 14, 2010.
87. Jia Lynn Yang and Zachary A. Goldfarb, "15 of 19 U.S. Banks Pass Federal Reserve Stress Test," *Washington Post*, March 13, 2012, http://www.washingtonpost.com/business/economy/15-of-19-us-banks-pass-federal-reserve-stress-tests/2012/03/13/gIQAJk8HAS_story.html.
88. Andrew Ross Sorkin, "Realities Behind Prosecuting Big Banks," *New York Times*, March 11, 2013. In numerous TV interviews hawking his book four years later, Geithner had become more equivocal, contending that under panic conditions *in extremis,* allowing the effectuation of a too-big-to-fail policy still may remain unavoidable.
89. ABA Dodd-Frank Tracker, "Keating Fires Back at 'Too-Big-to-Fail' Op-Ed," Thursday, March 14, 2013.
90. *Joint Press Release*, Board of Governors of the Federal Reserve System, July 9, 2013, p. 1.
91. In an amusing report we learned that "the Fed didn't want to say it was being tougher or breaking from the international regulatory pack. Instead, it said its proposed rules were 'super-equivalent' to others. Marveling at the 'wonders of regulatory prose,' Karen Petrou of Federal Financial Analytics wrote in a note late last week: 'I'm pretty sure that this means that, if a person is 200 pounds, he is 'super-equivalent' to someone weighing in at 150." *Wall Street Journal*, October 28, 2013.
92. Alan Greenspan, "The Crisis," *Brookings Papers on Economic Activity*, Spring 2010, p. 244.
93. Id., p. 231.

Chapter 12

1. Sir Arthur Conan Doyle, "Silver Blaze," in *The Complete Sherlock Holmes*, *Volume 1,* Doubleday & Company, Inc., 1953, p. 307.

2. These suits under Edward DeMarco's leadership at FHFA had the consequence, perhaps unintended, of inducing the bank residential mortgage lenders that sold their products to the agency to raise appreciably their underwriting standards, including FICO scores signaling credit worthiness, well above those required by FHFA rules. Accordingly, overall mortgage lending came to be significantly restrained. When Mel Watt took over as agency head, he was forced to stiffen noticeably the criteria under which suits would be brought, hoping to boost originations.
3. Jean Eaglesham and Suzanne Kapner, "SEC Cops Want to Fight U.S. Judge: Agency's Enforcement Unit Expected to Recommend That Commissioners Appeal Citigroup Ruling," *Wall Street Journal*, December 15, 2011.
4. Elizabeth MacDonald, "Exclusive: Citi's Embarrassing Emails Reveal Mutiny over Risky Investments," *FoxBusiness*, December 12, 2011.
5. Karen Freifeld, "Mortgage Task Force Set to Take Action Over Financial Crisis," *Reuters*, September 21, 2012.
6. stopfraud.gov: Financial Fraud Enforcement Task Force.
7. See "Bank Battle: It's time to wrap up the robo-signing negotiations," *Washington Post*, September 6, 2011.
8. After a year-and-a-half, regulators had uncovered 1,135 such cases. See Alan Zibel and Dan Fitzpatrick, "Scant Relief in Foreclosure Payouts: Most Borrowers to Get $1,000 or Less as Part of a $9.3 Billion Settlement Between U.S. and Banks," *Wall Street Journal*, April 10, 2013.
9. Nick Timiraos, "Mortgage Deal Built on Tradeoffs," *Washington Post*, March 12, 2012.
10. Tom Braithwaite and Patrick Jenkins, "JPMorgan Chief Says Bank Rules 'Anti-US,'" *Financial Times*, September 12, 2011.
11. Dan Fitzpatrick, Nick Timiraos and Christopher Bjork, "'Whale' Fines Are Readied," *Wall Street Journal*, August 28, 2013.
12. Erik Larson, "BofA Fails to Win Dismissal of U.S. Mortgage Fraud Suit," *Bloomberg Business*, June 19, 2014.
13. The Editorial Board, "A Bad Example: The settlement with JPMorgan Chase won't solve the financial sector's problems," *Washington Post*, October 24, 2013.
14. The Editorial Board, "Little Orphan Fannie: Washington rewrites financial-crisis history to punish JPMorgan," *Wall Street Journal*, October 28, 2013.
15. The rest of the negotiations initially stalled over JPMorgan's debatable claim that despite the bank's fulfillment of Treasury's request for it to purchase of all of WaMu's assets and liabilities, somehow the S&L's legal liabilities still resided with the FDIC. As if an unjustified prosecution would necessarily justify the abrogation of normal property rights.
16. Andrew Ross Sorkin, "Realities Behind Prosecuting Big Banks," *New York Times*, March 11, 2013.
17. Alan Zibel and Brent Kendall, "Holder: Banks May Be Too Large to Prosecute," *Wall Street Journal*, March 6, 2013.
18. Neil M. Barofsky, *Bailout: An Inside Account of How Washington Abandoned Main Street While Rescuing Wall Street*, Free Press, an imprint of Simon & Schuster, 2013, pp. 15–17.
19. Jean Eaglesham, "Financial Crimes Bedevil Prosecutors," *Wall Street Journal*, December 6, 2011.
20. While such innocence generally had been the case, criminal intent on the part of junior bank employees was provable on one occasion. In early February 2012, federal prosecutors brought the only successful criminal proceeding against any commercial or investment banker—specifically, three former Credit Suisse traders. Two of the three who were charged with conspiracy pled guilty to fraudulent bookkeeping of $3 billion of mortgage-backed bonds in early 2008 that masked the plunging value of the bank's subprime investments. (Susan Pulliam, Jean Eaglesham, and Chad Bray, "Guilty Pleas

Hit the 'Mark': Moves in Bond Inquiry Are First Successful Criminal Case Related to Meltdown," *Wall Street Journal*, February 2, 2012.) Their supervisor pled guilty to a related criminal charge over a year later. Bob Van Voris, "Ex-Credit Suisse CDO Chief Serageldin to Plead Guilty," *Bloomberg Business*, April 12, 2013.

21. Eleanor Bloxham, "Goldman and other big banks are not out of the woods," *CNN Money: A Service of CNN, Fortune & Money*, CNN, August 10, 2012.
22. Charles Lane, "Banks Aren't the Bad Guys," *Washington Post*, November 19, 2013.
23. Michael Erman, "Five Years after Lehman, Americans Still Angry at Wall Street: Reuters/Ipsos Poll," *Reuters*, September 15, 2013.
24. The Editorial Board, "The Morgan Shakedown," *Wall Street Journal*, October 21, 2013. The website *In Today's Paper, Online Journal E-mail Center* added this subtitle "A landmark that shows how much politicians now control U.S. finance."
25. "The Financial Crisis: A Timeline of Events and Policy Actions," The Federal Reserve Bank of St. Louis, June 29, 2010, p. 41.
26. John Berry, "Bloomberg vs. the Fed: Was the news organization excessive in its demands for central bank transparency?" *International Economy*, February 2012, p. 66. I thank John Berry for his personal communication on February 13, 2012, pointing out the need to cover these points. Also see David Warsh, "In Which the Bloomberg Kids Put on a Show," in his blog, *Economic Principles*, April 22, 2012, accessible at http://www.economicprincipals.com/issues/2012.04.22/1360.html.
27. Bob Ivry, Bradley Keoun, and Phil Lutz, "Secret Fed Loans Gave Banks Undisclosed $13 billion," *Bloomberg Business*, November 27, 2011.
28. Bob Ivry, Bradley Keoun, and Phil Lutz, "Big Banks Got $13 billion in Undisclosed Fed Loans [sic]: Rescue remained secret as Congress doled out even more money," *Washington Post*, November 29, 2011.
29. Bob Ivry, Bradley Keoun and Phil Lutz, "Secret Fed Loans Gave Banks Undisclosed $13 billion," *Bloomberg Business*, November 27, 2011.
30. Ibid.
31. David Enrich, "Some Europe Banks Shun ECB Loans," *Wall Street Journal*, February 7, 2012.
32. "Bloomberg News Responds to Bernanke Criticism of Rescue Coverage," *Bloomberg Business*, December 6, 2011.
33. Charles Goodhart, "Myths about the Lender of Last Resort," in Forrest H. Capie and Geoffrey E. Wood, eds., *The Lender of Last Resort*, Routledge, 2007, p. 319.
34. The intention of the Fed to make emergency loans at a rate above normal market rates was discussed extensively by Brian Madigan, "Bagehot's Dictum in Practice: Formulating and Implementing Policies to Combat the Financial Crisis," presented at the Federal Reserve Bank of Kansas City's Symposium on Financial Stability and Macroeconomic Policy, Jackson Hole, Wyoming, August 2009. Also see Michael J. Fleming, "Federal Reserve Liquidity Provision during the Financial Crisis of 2007–2009," *Federal Reserve Bank of New York Staff Report No. 563*, July 2012, pp. 11–12.
35. Almost two years later, editors at *Bloomberg Business* still were making similar assertions; see "Free the Fed. And Watch It Closely," *Bloomberg Business*, November 11, 2013.
36. Jon Hilsenrath, "Bernanke's Legacy at Fed: Still a Lagging Indicator," *Wall Street Journal*, December 13, 2011.
37. Binyamin Applebaum, "Central Banks Take Joint Action to Ease Debt Crisis," *New York Times, NYTimes.com*, November 30, 2011.
38. Anusha Shrivastava, "ECB Curbs Bar Some Banks," *Wall Street Journal*, December 7, 2011.
39. For example, two testimonies by Steven B. Kamin, the newly appointed director of the Division of International Finance at the Board, do not mention the sign of the spread between the rate charged by the Fed on swap drawings compared with the private FX swap

rate. See Steven B. Kamin, "The Economic Situation in Europe," before the Subcommittee on TARP, Financial Services, and Bailouts of Public and Private Programs, Committee on Oversight and Government Reform, US House of Representatives, December 16, 2011, and "The European Financial Situation," before the Committee on Banking, Housing, and Urban Affairs, US Senate, February 16, 2012. By the time of his second testimony, the volume of swap lending to European central banks had risen to more than $100 billion, which Kamin considered to have been among "some of the positive effects on dollar funding markets" (p. 3). But by the time of a statement by Bernanke a little more than a month later, dollar-related stresses in Europe had abated, and the amount of those swap drawings had receded partly. That testimony, like Kamin's earlier ones, was silent on the issue of relative pricing. See Ben S. Bernanke, "The European Economic and Financial Situation," testimony before the Committee on Government Oversight and Reform, US House of Representatives, Washington, DC, March 21, 2012.

40. The very worry about forced premature disclosure that had induced the FOMC under Burns to discontinue the Memoranda of Discussion in May 1976 was resuscitated in March 2012 by the Fed's release of partial transcripts in response to a Freedom of Information Act request. Judge Joseph Waddy had ruled in 1976 that the Memorandum of Discussion was not entirely deliberative, and therefore not fully exempt from prompt disclosure under FOIA. In his judgment, whenever the factual parts of the Memoranda of Discussion not involving FOMC deliberations were requested, they had to be released immediately without the five-year delay. Burns was less concerned about the potential workload of future requests than about the possibility that a subsequent court could require immediate disclosure of the entire document. Now the FOMC Secretary must have decided that Waddy's ruling also applied to the transcripts. In mid-April, Dylan Rattigan reported that the Fed had released heavily redacted transcripts for 2007 to 2010 containing only non-deliberative portions in response to a public-records request.
41. Kenneth Kuttner, "The Federal Reserve as Lender of Last Resort during the Panic of 2008," *Working Paper,* Department of Economics, Williams College, 2008. Quoted in George Selgin, William D. Lastrapes, and Laurence H. White, "Has the Fed Been a Failure?" *Cato Working Paper*, revised December 2010, p. 47.
42. Allan Meltzer, *A History of the Federal Reserve*, *Volume 2, Book 1: 1951–1969* and *Book 2: 1970–1986*, The University of Chicago Press, 2003, pp. x, 1243, 1251, and 1252.
43. Ben S. Bernanke, "Central Bank Independence, Transparency, and Accountability," presented at the Institute for Monetary and Economic Studies International Conference, Bank of Japan, Tokyo, Japan, May 25, 2010, p. 4. His quotation is from David Ricardo, "Plan for the Establishment of a National Bank," 1824, reprinted in J. R. McCulloch, ed., *The Works of David Ricardo—With a Notice of the Life and Writings of the Author*, John Murray, 1871, p. 506.
44. Richard H. Timberlake, *Monetary Policy in the United States: An Intellectual and Institutional History*, The University of Chicago Press, 1978, 1993, p. 20. Timberlake's footnote cites David Ricardo, "The High Price of Bullion," in *Economic Essays*, ed. E. C. K. Gonner, G. Bell and Sons, 1923, p. 21.
45. Governor Ben S. Bernanke, "Some Thoughts on Monetary Policy in Japan," speech before the Japan Society of Monetary Economics, Tokyo, Japan, May 31, 2003, p. 9.
46. Real Clear Politics Video, "Newt Gingrich: I Would Fire Ben Bernanke," December 6, 2011.
47. Clea Benson and Dawn Kopecki, "Gingrich Said to Be Paid at Least $1.6 Million By Freddie Mac," *Bloomberg Business*, November 16, 2011.
48. Board of Governors of the Federal Reserve System, "The U.S. Housing Market: Current Conditions and Policy Considerations," January 4, 2012, p. 2.
49. Zachary A. Goldfarb, "Fed's Push on Housing Crosses a Line, Critics Say," *Washington Post*, February 22, 2012.

50. Quoted in John M. Berry, "When Rates Are at Zero, Some Want the Fed Handcuffed and Gagged," *Stone & McCarthy Research Associates*, March 5, 2012, p. 1.
51. Paul A. Volcker, "Three Year Later: Unfinished Business in Financial Reform," The William Taylor Memorial Lecture, September 23, 2011, p. 11.
52. Craig Torres, "Stanford's Taylor Says Fed Activism Puts Independence at Risk," *Bloomberg Business*, March 27, 2012.
53. Rachelle Younglai, "Romney Says More Fed Stimulus Would Not Help U.S. Economy," *Reuters*, Monday, August 6, 2012.
54. Caroline Salas Gage, "Bernanke Economy Shows Critics Wrong on Fed," *Bloomberg Business*, February 8, 2012.
55. John B. Taylor, "Monetary Policy Going Forward: Why a Sound Dollar Boosts Growth and Employment," testimony before the Joint Economic Committee at the Hearing on March 27, 2012, p. 5.
56. Craig Torres, "Stanford's Taylor Says Fed Activism Puts Independence at Risk," *Bloomberg Business*, March 27, 2012.
57. Jon Hilsenrath, "Bernanke Questioned on Fed's New Policies," *Wall Street Journal,* February 3, 2012, except for the last sentence, which is from Joshua Zumbrun, "Bernanke Sees Improvement in Economy," *Bloomberg Business*, February 2, 2012.
58. Janet L. Yellen, "The Economic Outlook and Monetary Policy," speech at the Money Marketeers of New York University, April 11, 2012, pp. 5, 17.
59. Ben S. Bernanke, Transcript of Chairman Bernanke's Press Conference, April 24, 2012, pp. 10–11.
60. Of course, the simulation exercise *assumed* that, apart from the welfare effects of excess unemployment as well as funds rate variations, social welfare would be maximized by always maintaining the 2 percent long-run inflation goal, whereas the critics advocated lifting that goal for a number of years to lower real interest rates appreciably. Paul Krugman had asserted, "If the Fed were to raise its target for inflation—and if investors believed in the new target—expected inflation over the medium term, say the next 10 years, would be higher." See Paul Krugman, "Earth to Ben Bernanke: Chairman Bernanke Should Listen to Professor Bernanke," *New York Times Magazine*, April 24, 2012.
61. Stephen Dinan, "House Passes Ron Paul's Fed Audit Measure: Bernanke opposes 'nightmare'," *Washington Times,* July 25, 2012.
62. Lisa Lerer and Julie Hirschfeld Davis, "Romney Calls for Fed Audit as Party Mulls Platform Plank," *Bloomberg Business,* August 20, 2012.
63. James Politi and Robin Harding, "Fed insists politics did not affect QE3," September 14, 2012, *Financial Times, ft.com*.
64. Robin Harding and Chris Giles, "Global economy: Not so different this time," *Financial Times, ft.com*, September 9, 2012.
65. John Cochrane, "The Federal Reserve: From Central Bank to Central Planner," *Wall Street Journal,* September 1–2, 2012.
66. Tobias Adrian and Nellie Liang, "Monetary Policy, Financial Conditions, and Financial Stability," *Federal Reserve Bank of New York Staff Report Number 690*, September 2014, p. 1. Their knowledgeable article with its comprehensive bibliography also affords an entrée into the burgeoning technical literature on macroprudential policy.
67. John H. Cochrane," The Danger of an All-Powerful Federal Reserve," *Wall Street Journal*, August 27, 2013.
68. Simon Kennedy, "We're All Macroprudentialists Now as Bubble Policy Dawns," *Bloomberg Business*, June 17, 2014. I have reordered the paragraphs.
69. Donald Kohn, "The Interactions of Macroprudential and Monetary Policies: A View from the Bank of England's Financial Policy Committee," speech at the Oxford Institute for Economic Policy, *Brookings*, November 6, 2013, p. 2. In October 2014, the Bank of

England issued its plans for resolving banks, building societies, and certain investment firms in "The Bank of England's Approach to Resolution," The Bank of England, October 2014, available at http://www.bankofengland.co.uk/financialstability/Documents/resolution/apr231014.pdf.

70. Donald Kohn, personal communication, July 9, 2014. I couldn't agree more that some externalities justify intervention, such as the Fed's imposing a low price for daylight overdrafts of bank reserve accounts. (See the previous discussion of the Bank of England's then Deputy Governor Paul Tucker in Chapter 11 of this book.) But the argument can be over-extended inappropriately and thus must be used carefully. As Murray Rothbard, "Mr. Libertarian," remarked to me in early 1973, "Civilization is one gigantic externality!"
71. Donald Kohn, personal communication, July 9, 2014. Additional analysis by principals appears in Donald Kohn, "Institutions for Macroprudential Regulation: the UK and the U.S.," speech delivered at the Kennedy School of Government, Harvard University, April 17, 2014, available at www.brookings.edu/research/speeches/2014/04/17-institutions-macroprudential-regulation-kohn, and Stanley Fischer, Vice Chairman, Board of Governors of the Federal Reserve System, "Financial Sector Reform: How Far Are We?" speech delivered as the Martin Feldstein Lecture, National Bureau of Economic Research, July 10, 2014.
72. "Failing to End 'Too Big to Fail': An Assessment of the Dodd-Frank Act Four Years Later," Report Prepared by the Republican Staff of the Committee on Financial Services, US House of Representatives, 113th Congress, Second Session, Jeb Hensarling, Chairman; Patrick McHenry, Chairman, Subcommittee on Oversight and Investigations, July 2014 , pp. 24–45.
73. Testimony of the Honorable Barney Frank before the House Committee on Financial Services Assessing the Impact of the Dodd-Frank Act Four Years Later, July 23, 2014, p. 1.
74. "Barney Frank splits with Elizabeth Warren over new Glass-Steagall: Recap," *Capitol Report, MarketWatch*, July 23, 2014, p. 7.
75. Donald Kohn, "Federal Reserve Independence in the Aftermath of the Financial Crisis: Should We Be Worried?" paper presented at a conference, "Central Banking after the Great Recession: Lessons Learned and Challenges Ahead," *Brookings*, January 16, 2014, p. 2.

Chapter 13

1. Masaaki Shirakawa, "One Year Under 'Quantitative Easing'," *IMES Discussion Paper Series 2002-E-3,* The Bank of Japan, April 2002, p. 33.
2. Leika Kihara, "Outgoing Bank of Japan head warns no quick fix to Japan's deflation," *NBCNews.com*, March 19, 2013. The quotes in the text are arranged in my own order.
3. "Bank of Japan governor Shirakawa resigns," *Biz China Weekly*, March 19, 2013.
4. Jun Hongo, "Shirakawa exits after 'turbulent' BOJ term," *Japan Times*, March 20, 2013.
5. This analysis draws on Hiroshi Ugai, "Effects of the Quantitative Easing Policy: A Survey of Empirical Analyses," *Monetary and Economic Studies,* March 2007; Kazuo Ueda, "Japan's Deflation and the Bank of Japan's Experience With Non-Traditional Monetary Policy," *Center for Advanced Research in Finance, CARF Working Paper 235,* October 2010; revised October 2011; Kazuo Ueda, "Deleveraging and Monetary Policy: Japan Since the 1990s and the United States Since 2007," *CIRJE Discussion Paper, CIRJE-F*-828, December 2011, revised July 2012; Kazuo Ueda, "The Effectiveness of Non-Traditional Monetary Policy Measures: The Case of the Bank of Japan," *The Japanese Economic Review* 63, no. 1, March 2012; Masaaki Shirakawa, Governor of the Bank of Japan, "Deleveraging and Growth: Is the Developed World Following Japan's Long and Winding Road?" London School of Economics (co-hosted by the Asia Research Centre and STICERD, LSE), January 10, 2012; and Masaaki Shirakawa, Governor of the Bank

of Japan, "The Bank of Japan's Efforts toward Overcoming Deflation," Japan National Press Club, February 17, 2012.

6. Kazuo Ueda, "Japan's Deflation and the Bank of Japan's Experience With Non-Traditional Monetary Policy," *Center for Advanced Research in Finance, CARF Working Paper 235,* October 2010; revised October 2011, p. 1.
7. Kazuo Ueda, "The Effectiveness of Non-Traditional Monetary Policy Measures: The Case of the Bank of Japan," *The Japanese Economic Review* 63, no. 1, March 2012, p. 4.
8. Id., p. 6.
9. Mariko Ishikawa, Yumi Ikeda and Kazumi Miura, "BOJ's Bond Paralysis Seen Spreading Across Markets: Japan Credit," *Bloomberg Business*, June 16, 2014.
10. Personal communication, July 18, 2014 (same date as the one cited in Chapter 9).
11. On Japanese policy in that decade, see Barry Eichengreen, *Hall of Mirrors: The Great Depression, the Great Recession, and the Uses—and Misuses—of History*, Oxford University Press, 2015, pp. 255–258.
12. I heard King give a talk at the Board in the mid-1990s when he still served as chief economist at the BOE. I finally met him in March 2012 at the Board conference to honor Don Kohn.
13. Mervyn A. King, "Monetary Policy in the UK," *Fiscal Studies 15, No. 3*, p. 118.
14. Charles Goodhart, "The Monetary Policy Committee's Reaction Function: An exercise in estimation," *Discussion Paper 495*, Financial Markets Group, London School of Economics and Political Science, London, 2004.
15. Charles Bean, "The Great Moderation, the Great Panic and the Great Contraction," Schumpeter lecture at the Annual Congress of the European Economic Association, August 25, 2009, *BIS Review 101*, 2009, p. 815. The reference is to A. Meier, "Panacea, curse or non-event? Unconventional monetary policy in the United Kingdom," *IMF Working Paper,* July 2009.
16. Jason Douglas, "U. K. Stimulus Effort Fed Inflation," *Wall Street Journal*, September 19, 2011.
17. Michael Joyce, Matthew Tong and Robert Woods of the Bank's Macro Financial Analysis Division, "The United Kingdom's quantitative easing policy: design, operation and impact," *Quarterly Review*, 2011 Q3, p. 206.
18. Michael Joyce, Matthew Tong, and Robert Woods of the Bank's Macro Financial Analysis Division, "The United Kingdom's quantitative easing policy: design, operation and impact," *Quarterly Review*, 2011 Q3, [pp. 127–8 of the working paper version]. The BOE implausibly took these results at face value to derive impacts on the distribution of income and wealth. See Bank of England, "The Distributional Effect of Asset Purchases," July 12, 2012, released August 23, 2012.
19. Posen went on to advocate that the Fed readopt and the ECB adopt the same large-scale security purchases. See Adam S. Posen, "Central Bankers: Stop Dithering. Do Something," *New York Times*, November 20, 2011.
20. Jack Meaning and Feng Zhu, "The impact of recent central bank asset purchase programmes," *BIS Quarterly Review*, December 2011, abstract.
21. Jason Douglas, "Osborne Gives BOE More Leeway on Inflation Target," *Wall Street Journal*, March 20, 2013.
22. David Ignatius, "Britain's Heir to Keynes," *Washington Post*, April 25, 2913.
23. "Bank of England maintains Bank Rate at 0.5% and the size of the Asset Purchase Programme at £375 billion," Bank of England statement after the meeting of the Monetary Policy Committee, July 4, 2013.
24. Jennifer Ryan and Scott Hamilton, "BOE Keeps QE on Hold as Officials Assess Forward Guidance," *Bloomberg Business*, August 1, 2013.
25. Doug Higgins, "Legal Issues Involving the ECB as Sovereign Lender of Last Resort," *Trading Thoughts*, November 13, 2011, p. 5.

26. "The euro: Beware of Falling Masonry: The crisis in the euro area is turning into panic and dragging the zone into recession. The risk that the currency disintegrates within weeks is alarmingly high," *The Economist*, November 26, 2011, pp. 5–6. Also see "The Euro Zone: Is this really the end? Unless Germany and the ECB move quickly, the single currency's collapse is looming," *The Economist*, November 26, 2011. (Walter Bagehot was its editor from 1861 to 1877.)
27. Neil Irwin, *The Alchemists: Three Central Bankers and a World on Fire*, Penguin Press, 2013.
28. US Treasury Secretary Tim Geithner made a trip to Europe to reinforce the determination of Euro-zone countries to address adequately their debt crisis. He "said the currency block will need a sustained commitment of political will to resolve its difficulties." See Sudeep Reddy, "Geithner Presses Europe for a Political Solution," *Washington Post*, December 7, 2011.
29. William L. Watts, "ECB Provides Liquidity Flood, But Nixes Bond Hopes: Draghi Floods System with Liquidity But Rules Out Unlimited Bond Buys," *MarketWatch*, December 8, 2011, p. 2.
30. Mario Draghi, "Verbatim of the Remarks Made by Mario Draghi," speech delivered at the Global Investment Conference, London, July 26, 2012; available at www.ecb.int /press/key/date/2012/html/sp120726.en.html. His next-to-last sentence has a construction similar to the "whatever is necessary" one quoted above that was used by a questioner at his first press conference seven months before. Then, after another seven months, Haruhiko Kuroda, Governor of the Bank of Japan, uttered this phrase on April 4, 2013, when he promised to do "whatever it takes" to end deflation. (See "Bank of Japan chief to do 'whatever it takes' to end deflation," *South China Morning Post*, April 5, 2013.) Kuroda's usage ironically was fitting because in critiquing the BOJ Ben Bernanke coined a variant of the phrase in 2000: "But Roosevelt's specific policy was, I think, less important than his willingness to be aggressive and experiment—in short, to do whatever it took to get the country moving again." (See Ben Bernanke, "Japanese Monetary Policy: A Case of Self-Induced Paralysis?", Chapter 7 in *Japan's Financial Crisis and Its Parallels to US Experience*, Institute for International Economics Special Report 13, 2000, Adam S. Posen and Ryoichi Mikitani, editors.)
31. Jeff Black, "ECB Keeps Rates as Draghi Pressured to Bring Down Yields," *Bloomberg Business*, August 2, 2012.
32. "IMF Statement on Cyprus at the Eurogroup Meeting," *Press Release No. 13/80*, March 16, 2013.
33. Athanasios Orphanides, "The Euro Area Crisis: Politics over Economics," *MIT Sloan Research Paper No. 5091-14*, Massachusetts Institute of Technology—Sloan School of Management, June 2014, p. 14.
34. Id., p. 16.
35. Mario Draghi, president of the ECB, and Vítor Constâncio, vice-president of the ECB, "Introductory statement to the press conference," July 4, 2013.
36. For further discussion, see Richard Barley, "Vagueness Has a Value for ECB Guidance," *Wall Street Journal*, September 6, 2013.
37. Mario Draghi, President of the ECB, "Unemployment in the Euro Area," speech at the annual central bank symposium in Jackson Hole, August 22, 2014, p. 4.
38. Stefan Riecher & Kristian Siedenburg, "Euro Zone's Fizzling Growth Seen to Back Draghi Cut Case," *Bloomberg Business*, November 11, 2013.
39. On Christmas Eve 2013, this news story hardly imparted a hopeful holiday message: "Europe's Reform Push Essentially Has Come to a Halt." (Matthew Karnitschung, "Merkel Hits Wall with Euro Fix," *Wall Street Journal*, December 24, 2013.)

40. Athanasios Orphanides, "The Euro Area Crisis: Politics over Economics," *MIT Sloan Research Paper No. 5091-14*, Massachusetts Institute of Technology—Sloan School of Management, June 2014, pp. 23–24.
41. At the end of May 2012, Professor Volker Wieland, Institute for Monetary and Financial Stability in Frankfort, consultant to the European Central Bank, and formerly on the Board staff, expressed doubt that a fiscal union was even "feasible." (See interview with BBC Radio 5, May 31, 2012.)
42. The table's source is European Commission, Directorate-General for Economic and Financial Affairs, *European Economic Forecast*, Winter 2014, Table 1.6, p. 26.
43. Brian Blackstone, Matthew Karnitschnig, and Robert Thomson, "Europe's Banker Talks Tough: Draghi Says Continent's Social Model Is 'Gone,' Won't Backtrack on Austerity," *Wall Street Journal*, February 24, 2012. Also see Peter Praet, member of the Executive Board of the ECB, "Heterogeneity in a monetary union: What have we learned?" Speech, June 15, 2012.
44. Jeremy Warner, "Time to put the doomed euro out of its misery: Europe can't accept that the economics of the single currency condemn it to failure," *Telegraph*, April 14, 2012. He expanded on his point: "Data compiled by Germany's CESifo Institute show that, relative to the median, the "Giips"—Greece, Ireland, Italy, Portugal, and Spain—have seen a 30 percent appreciation of prices since the euro began. Germany, the leading surplus nation, has by contrast seen real depreciation of 22 per cent. In other words, the Giips have suffered a massive loss of competitiveness. They have appreciated while the Germans have devalued—the very reverse of what would have happened in a system of free-floating exchange rates."
45. Robert J. Samuelson, "Grim Choices for Europe," *Washington Post*, June 4, 2012. *The Economist* later published an insightful analysis of Germany's best escape from Europe's problems. It took the form of a hypothetical memo to Chancellor Merkel with two alternatives to the prevailing unsatisfactory policy of just muddling through. The article contained highly plausible predictions of the particulars of an eventual breakup of the Euro-zone, envisioning the exit either of Greece alone or of five countries also including Portugal, Ireland, Cyprus, and Spain. ("Breaking up the euro area: The Merkel memorandum," *The Economist*, August 11, 2012.)
46. Georg Wilhelm Friedrich Hegel, *Introduction, Lectures on the Philosophy of History*, 1832.

Chapter 14

1. Binyamin Appelbaum, "The Audacious Pragmatist," *New York Times,* August 22, 2013.
2. Thomas Mayer, *Monetary Policy and the Great Inflation in the United States: The Federal Reserve and the Failure of Macroeconomic Policy, 1965–79*, Edward Elgar, 1998, p. 8.
3. Phil Rizzo, "Forecasters Predict Fed Will Do More to Spur Recovery," *Wall Street Journal*, July 12, 2012.
4. Minutes of the July 31–August 1, 2012, Federal Open Market Committee meeting, p. 8.
5. Transcript of Chairman Bernanke's Press Conference, March 20, 2013, p. 15.
6. PBS *NewsHour* transcript, December 18, 2013.
7. Figure 14.1 is taken from Scott Grannis, "QE3 R.I.P.," *Calafia Beach Pundit*, October 29, 2014. See http://scottgrannis.blogspot.com/.
8. James Hamilton, "Evaluation of Quantitative Easing," *Resilience*, originally published by Econbrowser, November 3, 2014.
9. The decision to adopt QE3, which had been in train for some time, must have developed a certain momentum. See Zachary A. Goldfarb, "Bernanke Points the Fed in a New Direction: A central bank transformed: chairman eyes a more open, forceful approach," *Washington Post*, September 24, 2012. He wrote:

> By late July, for instance, Bernanke thought the jobs market was weak, and he was ready to launch a major intervention. At the Fed's meeting July 31 and Aug. 1, Bernanke circulated open-ended language the Fed would later release.
>
> Over six weeks of lobbying, Bernanke convinced the other committee members that the labor market was extremely weak and that additional action could help. He told them he expected new stimulus to help create 500,000 jobs.

Also see Jon Hilsenrath, "How Bernanke Pulled the Fed His Way," *Wall Street Journal*, September 28, 2012.

10. Jack Kalchbrenner and Peter Tinsley, "On the Use of Feedback Control in the Design of Aggregate Monetary Policy," *American Economic Review,* Papers and Proceedings, May 1976, and Jack Kalchbrenner and Peter Tinsley, "On Filtering Auxiliary Information in Short-Run Monetary Policy," in K. Brunner and A. Meltzer, eds., *Optimal Policies, Control Theory, and Technology Exports,* Volume 7, Carnegie-Rochester Series on Public Policy, 1977.
11. From a book review by Warren Coats, *Cayman Financial Review*, January 11, 2013. Coats was reviewing William A. Barnett, *Getting It Wrong: How Faulty Monetary Statistics Undermine the Fed, the Financial System, and the Economy,* MIT Press, 2011. I am indebted to Warren for alerting me to the existence of Barnett's volume. His quotation is from David E. Lindsey and Paul Spindt, "An Evaluation of Monetary Indexes," Board of Governors of the Federal Reserve System, *Special Studies Paper 195*, March 1986. Warren was an effective chief of several of my two-week IMF-led technical-assistance missions to the national banks of Kazakhstan and Kyrgyzstan in the early 1990s.
12. Axilrod somehow found the time to write a column for the *American Banker*. After he retired from Nikko, he initially wrote a book about the Fed. (Stephen H. Axilrod, *Inside the Fed: Monetary Policy and Its Management, Martin through Greenspan to Bernanke*, MIT Press, 2009.) Two years later, he published a substantially revised edition that incorporated new material on the financial crisis and on the problems for macroeconomic stability and for sustainable Fed independence that were prompted by the central bank's responses to the meltdown. (Stephen H. Axilrod, *Inside the Fed: Monetary Policy and Its Management, Martin through Greenspan to Bernanke*, MIT Press, revised edition, 2011.) He subsequently summarized the salient features of the Fed. (Stephen H. Axilrod, *The Federal Reserve: What Everyone Needs to Know* [paperback], Oxford University Press, 2013.)
13. He then served as assistant secretary of the US Treasury for International Affairs until early 2001, when he joined the Peterson Institute for International Economics, but he briefly returned to the Treasury as counselor to the secretary for three months in 2009.
14. John M. Berry, "The Barons and the Board," *Central Banking Journal* 7, no. 2, Spring 1997.
15. Laurence H. Meyer, *A Term at the Fed: An Insider's View*, HarperBusiness, 2004, pp. 26–8, based on John Cassidy, "Fleeing the Fed," *New Yorker*, February 19, 1996, and John M. Berry, "At the Fed, a Power Struggle Over Information," *Washington Post*, July 8, 1996.
16. Governor Daniel K. Tarullo, "Financial Stability Regulation," Speech at the Distinguished Jurist Lecture, University of Pennsylvania Law School, October 10, 2012, p. 12.
17. Forrest Capie, Charles Goodhart, and Norbert Schnadt, "The development of central banking," p. 91, and Charles Goodhart, "Presentation, Conference proceedings," p. 240, in Forrest Capie, Charles Goodhart, Stanley Fischer, and Norbert Schnadt, eds., *The Future of Central Banking: The Tercentenary Symposium of the Bank of England*, Cambridge University Press, 1994, reprinted 1997.
18. I naïvely inquired, "About your claim that the Fed exercises control over the money stock, doesn't the fact that the money stock displays a distinct seasonal pattern that we didn't impart imply that, at least in the short run, it instead is wholly determined by the amount of the public's demand?"

19. See Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024*, February 4, 2014, Summary Figure 3, p. 5.
20. Ben Cassleman and Marcus Walker, "Help Wanted: Struggles of a Lost Generation," *Wall Street Journal*, September 14–15, 2013.
21. Carmen M. Reinhart and Kenneth Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (hardcover), Princeton University Press, 2009.
22. Despite a well-demonstrated tendency to impede private economic activity, inordinately expensive social welfare programs that breed excessive dependency are an inevitable product of Western democratic systems. Although such programs would need to be more carefully monitored and abridged to address adequately our serious budgetary problems, don't hold your breath awaiting practical reforms. This analysis by economist Thomas Sowell, Rose and Milton Friedman Senior Fellow at Stanford University's Hoover Institution, has justified such advice:

    > Growing numbers of Americans on food stamps, jobs preserved by bailouts, people living on extended unemployment payments and people behind in their mortgage payments being helped by government interventions are all potential voters for those who rescued them—even if their rescuers are the reason for hard times, in the first place.
    >
    > The economy was far worse during the first term of Franklin D. Roosevelt than it has been under Obama. Unemployment rates under FDR were more than double what they have been under Obama. Yet FDR was reelected in a landslide. Dependency pays off for politicians, even when it damages an economy or ruins a society. (Thomas Sowell, "The Anti-Romney Vote," *RealClearPolitics*, February 9, 2012.)

23. As noted above, after his initial electoral success in 1994 with the "Contract for America," Speaker of the House Newt Gingrich's actions in closing the government helped to stop the Republican Party's popular momentum in its tracks. He then achieved victories with negotiated reforms to welfare and fiscal policy. But Gingrich reverted to impairing the electoral prospects of Republicans, as reoccurred in the wake of his pressing for impeachment of President Clinton, attacking Mitt Romney in the primary debates of in 2012, and supporting the Republican strategy that resulted in the government shutdown of 2013. But by June 2014 he seemed to have altered his advice: "As it stands, Gingrich said, his party lurches between two strategies: 'Either we suicidally charge into Barack Obama and shut down the government and get beaten, or we basically do nothing and hope someday we elect a Republican president.'" (Karen Tumulty, "GOP Dilemma: Be the 'party of no,' or risk offering new ideas?", *Washington Post*, June 12, 2014.)
24. IBD Editorials, "Lackluster Jobs Report Underscores Epic Failure of Obamanomics," *Investors.com*, October 22, 2013.
25. Masaaki Shirakawa, Governor of the Bank of Japan, "Deleveraging and Growth: Is the Developed World Following Japan's Long and Winding Road?" London School of Economics, (Co-hosted by the Asia Research Centre and STICERD, LSE), January 10, 2012, p. 12.
26. The replacement in March 2014 at the start of Yellen's leadership of quantitative thresholds with qualitative guidance about the future inception of monetary firming was another move in this opposite direction.
27. Long after I completed a second draft of this concluding chapter, I ran across these earlier imaginative musings by Raghuram Rajan, then at the University of Chicago's Booth School of Business but after September 4, 2013, Governor of the Reserve Bank of India:

    > Churchill could well have said on the subject of unconventional monetary policy, "Never in the field of economic policy has so much been spent, with so little evidence, by so few." Unconventional monetary policy has truly been a step in the dark. But

this does raise the question of why central bankers have departed from their usual conservatism—after all, "innovative" is usually an epithet for a central banker.

The Fed, led by perhaps the foremost monetary economist in the world, proposed creative solutions that few in policy circles, including the usually conservative multilateral institutions, questioned. After all, they no longer had the influence of the purse or the advantage in economic training.

This is, however, not a satisfactory explanation . . .

As with much about recent unconventional monetary policies, there is a lot we can only guess at. The bottom line is that if there is one myth that recent developments have exploded it is probably the one that sees central bankers as technocrats, hovering cleanly over the politics and ideologies of their time. Their feet too have touched the ground. (Raghuram Rajan, "A Step in the Dark: Unconventional Monetary Policy after the Crisis," Andrew Crockett Memorial Lecture delivered at the Bank for International Settlements, June 23, 2013, pp. 14–15.)

28. Masaaki Shirakawa, Governor of the Bank of Japan, "Deleveraging and Growth: Is the Developed World Following Japan's Long and Winding Road?" London School of Economics, (Co-hosted by the Asia Research Centre and STICERD, LSE*),* January 10, 2012, pp. 10–11. But it took a non-central banker named Jeff Rubin to get it just right, "In a quest to get economic activity churning again, the Fed and other growth-hungry central banks are running headlong into a bleak irony—the longer they stick with extraordinary measures, the less extraordinary those measures become." Jeff Rubin, "Why the Fed's Efforts Are Putting the U.S. Economy at Risk," *Financial Sense* (http://www.financialsense.com), September 27, 2013.
29. Chairman Ben S. Bernanke, "The Federal Reserve: Looking Back, Looking Forward," remarks at the Annual Meeting of the American Economic Association, Philadelphia, Pennsylvania, January 3, 2014. On January 16, Liaquat Ahamed interviewed him at a Brookings conference, "Central Banking after the Great Recession: Lessons Learned and Challenges Ahead."
30. Valid criticisms of CBO's estimates of large Keynesian multipliers for government expenditure and taxes would emphasize the permanent income hypothesis for consumption advocated by Milton Friedman and the closely related research by Franco Modigliani and Albert Ando. In contrast, the modern research of John Taylor and Volker Wieland, yielding model simulations with small fiscal multipliers, suffers from a reliance on the assumption of rational expectations in labor and product markets.
31. A day later in a panel discussion at the same convention, New York Fed president William Dudley well exemplified the practice of assuming what one is trying to prove: "'We don't understand fully how large-scale asset purchase programs work to ease financial market conditions,' Dudley said today in a speech in Philadelphia. 'Is it the effect of the purchases on the portfolios of private investors, or alternatively is the major channel one of signaling?'" (Steve Matthews, "Dudley Sees Fed Needs Better Grasp of How QE Works," *Bloomberg Business*, January 4, 2014.)
32. Masaaki Shirakawa, Governor of the Bank of Japan, "Central Banking: Before, During, and After the Crisis," remarks at a Conference Sponsored by the Federal Reserve Board and *The International Journal of Central Banking,* March 24, 2012, p. 8. A similar point was made later by Aaron Klein, the director of the Financial Regulatory Reform Initiative at the Bipartisan Policy Center in Washington, and a former Treasury official. Klein said the Fed board needs to "avoid problems of group think, where everyone is reading the same academic literature. Even if it is from different sides of the debate, everyone is trapped in the world of the same small set of academic journals." Joshua Zumbrun, "Greenspan's Bequest to Yellen Is Board Harmony Shown in Records," *Bloomberg Business*, November 7, 2013.

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