The Education of Ben Bernanke

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Ben Bernanke's first exposure to monetary policy was reading the works of Milton Friedman, the Nobel laureate. That was 30 years ago, when Bernanke was a graduate student at M.I.T., and he has been studying central banking ever since. By the time President Bush nominated him to run the Federal Reserve, at the end of 2005, Bernanke knew more about central banking than any economist alive. On virtually every topic of significance — how to prevent deflationary panics, for instance, or to gauge the effect of Fed moves on stock-market prices — Bernanke wrote one of the seminal papers. He championed ideas for improving communications between the Fed — whose previous chairman, Alan Greenspan, spoke in riddles — and the public, believing that clearer guidance about the Fed's aims would help the economy run more smoothly. And having devoted much of his career to studying the causes of the Great Depression, Bernanke was the academic expert on how to prevent financial crises from spinning out of control and threatening the general economy. One line from his "Essays on the Great Depression" sounds especially prescient today: "To the extent that bank panics interfere with normal flows of credit, they may affect the performance of the real economy."

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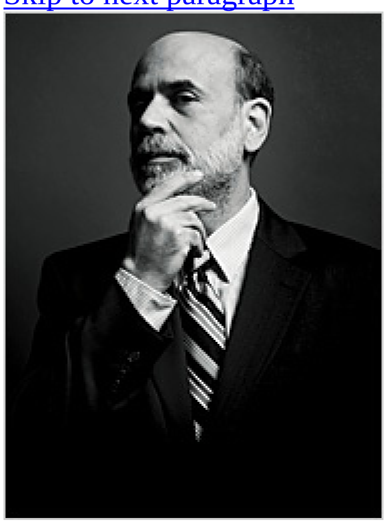

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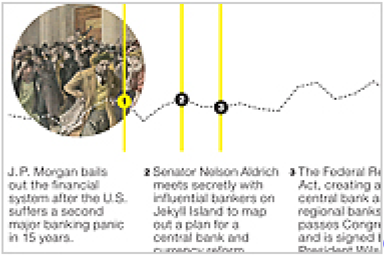

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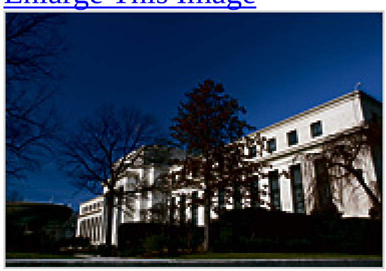

Nigel Parry for The New York Times

The headquarters of the Federal Reserve, in Washington.

Bernanke, who came to the job with a refreshing humility — a desire to be less an oracle like Greenspan than a plain-speaking technocrat —faces exactly this sort of crisis now. Ever since last summer, a meltdown in financial markets has led to daunting losses in the banking industry and throughout Wall Street. Despite having written extensively on how to deal with such episodes, Bernanke has thus far been unable to reinstill a sense of confidence. His faith in modern forecasting models notwithstanding, he failed to foresee that the sudden rise in homeowner defaults, which triggered the crisis, would have such far-reaching effects. And the monetary medicine that he has prescribed, including some of the very tools that he lovingly detailed in his research, have yet to produce a turnaround.

At the same time, Bernanke's attempt to improve the way the Fed communicates has misfired and often left investors confused, partly because he has repeatedly shifted course over the future direction of interest rates. His hero, Milton Friedman, is said to have warned against an indecisive Fed acting like a "fool in the shower" fumbling with first the hot water and then the cold. Bernanke has gotten close. Perhaps worst of all, he has failed to persuade investors that the Federal Reserve, which was formed in 1913 for the very purpose of halting market panics, is up to the job. "Bernanke is seriously behind the curve," says David Rosenberg, chief North American economist for Merrill Lynch, one of many critics who maintain that the Fed has not responded to the crisis with sufficient vigor.

For Bernanke, who is now 54, it has been an education unlike any at M.I.T. And yet there is a case to be made that he has made many more right moves than wrong ones. The current crisis is a hangover from a half-decade of heady speculation in both housing and home mortgages and does not necessarily admit to a speedy fix. Moreover, it has fallen into Bernanke's lap just as oil prices have spiked to a record $100 a barrel, the dollar has hit an all-time low against the euro and unemployment has ticked upward. None other than Alan Greenspan has said that constellation of problems facing Bernanke is tougher than anything he experienced in the 18 years that he held the job.

Many observers, including Lawrence Summers, the former Treasury secretary, as well as a group of bearish stock traders, say the United States may already be sinking into a recession. The rise in unemployment reported two weeks ago stoked those fears. The White House has started talking about proposing relief. And just recently, Bernanke sent the clearest signal yet that the 17-member Federal Open Market Committee (which governs the Fed's interest-rate policy, and over which Bernanke presides) would cut interest rates when it meets at the end of the month. In a speech, Bernanke warned that "the downside risks to growth have become more pronounced," a gloomier assessment of the economy than he had given previously.

Bernanke also has strong reasons to worry, however, about easing rates too much. Inflation has failed to fall as the Fed expected. (In fact, lately it has been rising.) Also, lower interest rates induce foreigners to switch out of dollar-denominated investments like Treasuries and into currencies with higher yields. Thus, any rate cut would tend to escalate the stampede out of the dollar.

Perhaps the last Fed chief to face such a difficult one-two punch of inflation and slowing growth was Arthur Burns, who was also the last academic to hold the job. President Richard Nixon, concerned that high unemployment could cost him re-election in 1972, told Burns to concentrate on revving up the economy. "No one ever lost an election on account of inflation," Nixon confidently told him. Burns did as he was directed. An eventual result was runaway inflation and, for Burns, a legacy of failure.

Bernanke is aware that he holds the same potential for influence as Burns — which is to say he has a profound ability to affect the political landscape this year. Polls show that the economy is now the most important issue to voters in the presidential election (more important even than the war). A recession would seem to be a clear repudiation of President Bush's policies and, by extension, the Republican Party. Those who know Bernanke, however, say he is not motivated by politics. "He wants to be known as a great central banker," says Mark Gertler, his close friend and an economics professor at New York University. "Those with the worst reputations are the ones who helped politicians."

A wage-and-price spiral similar to that in the 1970s would not only be a political nightmare for the Republicans, it would also be a crushing blow to Bernanke's reputation as a Fed chief. And with oil and food prices going through the roof, inflation is already a worry. The consumer price index surged 4.3 percent over the past 12 months — more than twice the inflation rate that Bernanke has delineated as the upper bound of his comfort range. (The widely watched "core" rate of inflation, which does not include volatile food or energy prices, is not as high as the overall rate, but it, too, has edged higher than Bernanke would like.)

"I think Bernanke is in a very difficult situation," Paul Volcker told me. Volcker was the Fed chief who preceded Greenspan and who conquered, painfully, the great inflation of the 1970s and early '80s. (He was chairman from 1979 to 1987.) "Too many bubbles have been going on for too long," Volcker added. "The Fed is not really in control of the situation."

This past fall, as markets and sometimes the world seemed to be tumbling all around Bernanke, I met him in his office for a mostly off-the-record chat. We sat at a coffee table from which I could make out a Bloomberg terminal at his desk, some framed bills from the first series of Federal Reserve notes, his certificate of nomination by President Bush and shelves of economics books. I returned for a second visit a month later for lunch in his private dining room (Bernanke ordered turkey and steamed vegetables) and followed up, at Bernanke's suggestion, with a third and final interview, this time by phone.

Bernanke has a serious manner, befitting a scholar who once expected to spend his entire career in academia. He is shy and seemed faintly ill at ease, stiffly folding his arms while we talked; his hand trembled slightly when he gave me one of his books. He answered questions with an absence of emotion but with a torrent of carefully worded fact.

"It's been a challenging economic situation," he granted, "and also a difficult, rather tenacious set of problems in credit markets. However, I have the advantage of having a terrific committee" — the Federal Open Market Committee — "and strong staff support, and I think we have a good hold and understanding of the situation."

Behind the modesty and blandness of such remarks, Bernanke is uncommonly thoughtful and also resilient. He was late to recognize the severity of the subprime mortgage crisis, which intensified when European banks experienced credit problems in August, but he has dealt with it deliberately and creatively since then. With more than a million households facing the possibility of home foreclosure in the next year, he will need all of his resourcefulness and more. "Every central-bank governor goes through tests of some sort," says Stanley Fischer, the governor of the Bank of Israel and the man who was Bernanke's thesis adviser at M.I.T. "Usually, the gods oblige by providing a test early on." Bernanke's exam looks like a doozy.

The Fed is facing two distinct threats — an apparent slowing of the economy over the intermediate term and a short-term market panic that has caused lenders (both banks and investors) to tighten credit lines, putting a squeeze on banks and other institutions that rely on short-term borrowing.

To ease the immediate crisis, the Fed has made credit more available through the so-called "discount window," where it lends to private banks. Among other things, the Federal Reserve Bank is a bank — actually a group of banks with branches around the country. Lending at the discount window is one way that the Fed fulfills its unstated mission, which is to be the banker of last resort in times of crisis.

The Fed also has two formal missions that are codified in law: to promote "maximum employment" (thus its duty to head off recessions) and, of course, to maintain a stable purchasing power, which is generally interpreted as keeping the inflation rate at a tolerable level. There is a general notion that the Fed has vast powers over the economy itself. This is an impression enhanced by Greenspan's Delphic pronouncements (anyone so inscrutable must have been pulling all the strings, or so it was tempting to believe). As Bernanke notes, the public has high expectations for what the Fed can do. Actually, it has very little influence over most of what makes the economy tick, like improvements in productivity, educational levels or whether commodity prices are trending higher or lower and so forth.

The Fed's principal power is its control over the supply of money. You can think of the Fed as the banker in a national game of Monopoly. Normally, everyone gets $200 when they pass "Go," but when business conditions slump, the Fed can give the economy a boost — much like hiking the "Go" rate to $300. Or, if the prices of the little green houses and red hotels are rising too swiftly, it can hand out less money.

Of course, the Fed doesn't really hand out money. Its principal monetary lever is something called the federal funds rate, which is the rate that private banks charge one another for overnight loans.

The Federal Open Market Committee cannot "set" the fed funds rate by fiat; when it wants to, say, lower the rate, which as of this writing was 4.25 percent, it directs the New York Fed to inject cash into the system. The New York Fed lends money to major dealers in government securities, taking Treasuries as collateral. (Conversely, to tighten rates, the New York Fed borrows money.) This power to expand the money supply is unique. If one bank purchases bills from another, there is no net change in the banking system's liquidity. Only the central banker, the Fed, can create new money.

The fed funds rate does not directly affect rates on car loans or leveraged buyouts or anything else. But when the fed funds rate eases, it's an indication that the Fed has added liquidity to the system. Since the only thing banks can do with liquidity is lend it out, a flush banking system will act like a healthy heart, pumping credit into the economy.

During the Volcker era, the Fed conducted policy by adding or subtracting money until the total of bank reserves and checking accounts (what is commonly referred to as the "money supply") reached a desired level. But with innovations in the financial system, like brokerage checking accounts, the lines between "money" and other financial assets blurred, and counting the money supply became too difficult.

So Greenspan switched the Fed’s methodology. Now it simply monitors the interest rate. If it wants to ease the rate, for instance, it keeps adding liquidity until banks react by reducing overnight rates to the target level.

During the first years of the new century, Greenspan lowered the fed funds rate to 1 percent, which was exceptionally low. Low rates were partly an attempt to revive the economy after the dot-com fiasco. In an illustration of how one bubble seems to beget another, however, the Greenspan rate cut greatly stimulated the housing industry. In particular, since adjustable-rate mortgages are determined by short-term interest rates, low rates paved the way for the explosion in ARMs, the very mortgages that lately have been defaulting at an epidemic pace.

As demand for mortgages swelled, banks began to engage in highly dubious lending practices, including issuing mortgages without verifying the income of borrowers. The Fed, which apart from its monetary role is also one of the federal agencies that regulates banks, was warned that standards were slipping. Greenspan, however, ignored the warnings, and the speculative lending continued, reaching a peak during Bernanke’s first year. Thus, in both of its main areas of responsibility — monetary and regulatory policy — Fed laxity has seemingly contributed to the current mess. Bernanke deflects such criticisms, partly because he maintains that the mortgage fiasco had many fathers and partly because he has a scholar’s disdain for perfect-hindsight-type judgments.

Bernanke has also shown his academic bent in how he runs the Fed. He has democratized interest-rate policy by giving the members of the Open Market Committee more of a voice. Bernanke’s collegial style worked at Princeton, where he taught. But as the point man for the U.S. economy in a time of crisis, perhaps the Fed chief should be more commanding, suggests Alan Blinder, a former Fed vice chairman and a former Princeton colleague.

The shadow of the czarlike Greenspan lingers over Bernanke, and as Greenspan has been promoting his memoirs and has otherwise been keeping visible, it is unlikely to go away. Greenspan was known to insist on unanimous support from committee members at critical junctures, to assure the country of the Fed’s resolve; Bernanke has not. Somewhat embarrassingly, he has suffered dissents on both ends of the spectrum. In October, a committee member voted against a Bernanke rate cut; in December, one dissented in favor of a bigger cut than Bernanke wanted.

Under Bernanke, the various Open Market Committee members have felt freer to speak their minds, and they have done so. This free speech has sometimes sounded cacophonous; the president of the Philadelphia Fed has clamored for a more hawkish policy, the Boston Fed for a dovish one. (In Fed parlance, hawks want to tighten rates; doves favor easing them.) Not surprisingly, Wall Street has found this dissonance confusing. Bruce Kasman, chief economist at JPMorgan Chase, insists that several times in recent months the market hasn’t heard what the Fed is saying.

One of Bernanke's Open Market Committee colleagues admits that he worries about the extent to which "democracy," however admirable, has dulled the Fed's aura and, perhaps, its ability to lead. On the other hand, Bernanke has held the group together (committee members respect him enormously), and the wide diversity of their opinions points to Bernanke's greatest strength, which is teasing out a consensus. "He is very good at hearing what everyone else has to say — of summarizing the discussion and then making his own observations," says Charles Plosser, the president of the Philadelphia Fed and a hawk on the committee. "Does he persuade? He listens very carefully. He summarizes. Then he tries to shape what we should do."

The Federal Open Market Committee is an unwieldy and archaic body in the best of times; it includes seven Fed governors in Washington (at the moment there are only five) and the presidents of the Fed's 12 regional banks, which are dispersed in cities like Richmond and Cleveland, in the country's industrial centers circa 1913, when the Fed was founded.

This hydralike form is a result of the country's abiding fear of concentrated financial power. Congress twice set up central banks in the early years of the republic but let their charters lapse. Throughout the 19th century the country frequently experienced banking panics. After the Civil War, the United States adopted a gold standard, but without a central bank, the amount of money in circulation was fixed according to the available supply of gold — a rigid structure that the economy was outgrowing. The demand for credit was variable. For instance, it was heavy in the fall when the crops came to market.

In 1907, the U.S. suffered a brutal recession in which thousands of banks failed. The panic subsided only when J. P. Morgan Sr., then 70 and semiretired, personally rescued the stock exchange. Financiers realized that America needed a public lender of last resort: a central bank.

Paul Warburg, the scion of a German-Jewish banking family, was frustrated by the primitive financial system of the United States, his adopted home, and he formed a tentative alliance with Nelson W. Aldrich, the powerful chairman of the Senate Finance Committee. In 1910, Aldrich, Warburg and a group of other bankers met in secret on Jekyll Island, off the coast of Georgia, to write a plan for a central bank. Reporters were told they were going duck hunting.

The public was highly suspicious of financiers, especially East Coast financiers, and the Federal Reserve was consciously designed to allay their fears. The regional Fed banks were to be semiautonomous, and they were chartered with their own boards, whose members were drawn from the local communities and a majority of whom could not be bankers. Political authority was vested in Washington; the Fed's capital, however, was contributed by private banks all over the country.

In its early decades, the Fed had the ability to provide an elastic currency, but was unwilling to use its power to add liquidity except to support an influx of gold, or to finance so-called "real bills" — meaning paper backed by industrial and agricultural goods. In the ’30s, the Fed followed this principle into catastrophe. The head of the Philadelphia Fed lamented, in the midst of the Depression, “If we were to expand now we would be putting out credit when people don’t need it.” He was warning against the very tonic — a little extra liquidity — that might have allowed businesses to start investing money and hiring workers. The Fed did expand the money supply in the mid ’30s, and a recovery ensued, but it contracted too quickly, and business collapsed again.

Early scholarship blamed the Depression largely on Wall Street speculators, who were thought to have fueled overexpansion by businesses. Milton Friedman and Anna Schwartz, however, fingered the Fed for failing to adequately expand the money supply as the economy contracted. That view is now widely accepted, and Bernanke’s scholarship added a dimension by emphasizing the pivotal role of banking panics in aggravating the monetary failure. For Bernanke, the Depression was the unique laboratory for learning his craft. As he is fond of saying, “If you want to learn about seismic activity, you study earthquakes, not tremors.”

Bernanke updates Bush and Vice President Cheney several times a year, but he prizes his political independence. Unlike Greenspan, he has avoided taking positions on economic issues that do not relate to the Fed’s mission. (An exception is his affirmation that he “believes in the laws of arithmetic,” a none-too-subtle rejection of the Bush ideology that championed deficit-spawning tax cuts.)

Tension with the White House was long part of the Fed chief’s job description, largely because the bank’s dual mandate (fighting inflation and promoting growth) was seen to be in conflict with itself. No president wants inflation, but most want high interest rates even less. Franklin D. Roosevelt wanted to finance World War II with cheap money, and Henry Morgenthau Jr., his Treasury secretary, simply directed the Fed to buy Treasury bills at a fixed rate of 2.5 percent. This kept rates flat, but led to inflation after the war.

The Fed was liberated from the Treasury in a famous accord in 1951. William McChesney Martin Jr., who was appointed Fed chairman that year, battled Harry Truman and successive presidents to establish the prototype for an independent Fed chief. It was Martin who proclaimed that the chairman’s job was to “take away the punch bowl just as the party gets going” — in other words, to raise interest rates when a booming economy threatened to cause inflation. And it was Martin who created the quasi legend that Fed chiefs could decide an election. He tightened rates in the latter part of 1959, triggering a recession that began in April 1960. Nixon, the incumbent vice president and Republican presidential nominee that year, blamed Martin for sabotaging his chances in November.

Martin ran into even tougher pressure from Lyndon B. Johnson, who tried to browbeat him into easing rates. One version of what occurred, according to Richard Fisher, the current head of the Dallas Fed, who has studied the history, is that “Lyndon took Martin to his ranch and asked the Secret Service to leave the room. And he physically beat him, he slammed him against the wall, and said, ‘Martin, my boys are dying in Vietnam, and you won’t print the money I need.’ ” Martin ultimately caved. By the time he retired, in 1970, inflation was a worrisome 6 percent. Soon after, President Nixon told Burns to promote maximum employment. In fairness to Burns, he was laboring under the unforgiving strictures of an academic model known as the Phillips curve, which held that low inflation and economic growth were incompatible opposites. If you wanted to raise employment, you had to permit more inflation. And that's what Burns did.

By the late '70s, inflation was as much a psychological condition as an economic one. As prices rose, unions scored automatic cost-of living hikes, and so businesses raised prices even more. With inflation in double digits, Jimmy Carter finally nominated Volcker, an aloof, 6-foot-7 career public servant, who seemed to garble much of what he said through a half-chewed cigar. From the intelligible part, it was clear that Volcker intended to break the inflationary cycle. Volcker tightened the money supply so much that the fed funds rate soared to 20 percent. This led to a brutal recession, which was especially tough on workers and businesses in interest-rate-sensitive industries like real estate. "It's no fun raising interest rates," Volcker admitted. Idle builders were so enraged that some sent him two-by-fours in the mail. High interest rates took a terrible toll on President Carter. In September 1980, with Carter and Ronald Reagan in a close race, Volcker administered the coup de grâce by hiking the discount rate. A decade later, President George H. W. Bush blamed Alan Greenspan's tight money policy for his own defeat.

For Bernanke's generation, the great inflation served as a bookend to the 1930s. It was an object lesson on the dangers of creating too much liquidity. Once again, Milton Friedman changed the profession's understanding, this time by deciding that, in the long run, the Phillips curve was wrong. Printing money (or as Friedman famously quipped, dropping bundles of bills from a helicopter) would spur the economy only temporarily. At first, as the money supply expanded, businesses would hire more workers and produce more goods. The economy would be "tricked" into operating at a higher gear. But after a while, workers would insist on wage hikes, and companies would jack up prices. The higher prices would cool off the economy again. So the net result of printing money would be just inflation — no gains in production. In the long term, neither the Fed nor anyone could spur an economy to grow faster than its "natural rate" — which is determined by all those other factors: productivity, population changes, technological advances, demand for exports and so forth.

Thus the dictum that inflation would lead to jobs was out. According to the new thinking, low inflation is consistent with, and even a prerequisite for, reaching whatever the economy's potential is. That means that Fed chiefs and presidents are on the same side. Bill Clinton bought into the idea, which is to say he broke with precedent and left Greenspan alone. Only in the very short term — say, when a stimulus is needed — are the Fed's two mandates in conflict. Of course, since elections are decided in the short term, the potential for political infighting remains.

To Bernanke, the political dimensions of the job came as a mild shock. The day we met, he had come from breakfast with Treasury Secretary Henry Paulson Jr.; the day before, he met with a congresswoman. (The Fed is a creature of the Congress, and Bernanke must take care not to alienate it.) A few months back, when Senator Christopher Dodd invited Bernanke and Paulson to discuss some "current issues," the senator, who was then running for the Democratic nomination, staged a news conference for a score of media members whom he had, conveniently, also invited. This is the sort of thing they don't train you for at M.I.T.

Bernanke grew up in the small town of Dillon, S.C., at the tail end of the segregation era (in high school he wrote a schoolboy's novel about whites and blacks coming together on the basketball team). His father and his uncle ran a local drug store. Folks trustingly called them Dr. Phil and Dr. Mort. Ben, who skipped first grade, was obviously smart from the get-go. He played the saxophone, just as Greenspan did, and waited tables two summers and worked construction another. The Bernankes were observant Jews, and Ben's folks fretted when he got into Harvard that if he strayed from home he might wander from his religious teachings. It was never a risk. Judaism is important to Bernanke, though, as with other personal subjects, he does not discuss it. As a doctoral candidate at M.I.T., he blossomed into a star, and at the tender age of 31 he received a tenured position in the economics department at Princeton.

His academic research was steeped in the increasingly sophisticated discipline of econometrics, which uses computer models to simulate (and predict) the economy. By contrast, Greenspan often relied on his hunches. The difference is partly generational, but Bernanke is clearly more comfortable working with mathematical formulas than with anecdotal examples. (One looks in vain in his Depression writings for stories of banks that failed or of workers who lost their jobs.)

At Princeton, as a self-deprecating, tweedy professor, he discovered a talent for leadership and became department chairman. (He also served two terms on the local school board.) The Princeton economics faculty is roughly as cohesive as the various ethnicities of the former Yugoslavia, with the principal cleft being between the "empiricists" and the "theoreticians." Department meetings were so contentious that two professors stopped speaking to each other. Bernanke eased the tension and also raised the department's profile, chiefly by making it plain that he was listening to all sides. Burton Malkiel, himself a former chairman, says: "I thought I was pretty darn good, and Ben was the best chair we ever had, and for the reasons that actually inform his current job. He was extraordinarily good at working diverse viewpoints."

In Princeton, where he and his wife, Anna, a Spanish-language teacher, reared two children, Bernanke evidenced an ambition that surprised his colleagues, and perhaps himself. Bernanke is exceptionally methodical; he once told Alan Blinder, his Princeton colleague, that you can learn a lot about people by noting when they fish their car keys from their pocket; Bernanke does so as he leaves the office, long before he reaches his car. He is also determined. He and Alan B. Krueger, another colleague, were once waiting in Newark airport for a flight to Boston. A thunderstorm rolled in, and the flight was delayed. Krueger suggested renting a car. Bernanke, who had a fear of flying, told him, "No, I promised myself if I got to the airport, I'd get on the plane."

While at Princeton, Bernanke wrote policy-oriented papers that raised his profile in Washington. One Bernanke idea was a direct response to the market's frustration with

Greenspan, who refused to be tied down on what his inflation objective was. Bernanke maintains that if the Fed is clear about its policies, the public will tailor its behavior accordingly. For instance, if the Fed can demonstrate that it has the fortitude to snuff out inflation, individual businesses will be less likely to worry that their costs will rise, and thus less apt to raise their prices. Following this logic, Bernanke and two colleagues proposed that the Fed become more transparent and publicize an explicit inflation target.

In 2002, President Bush asked Bernanke to become a Fed governor. When the White House called, Bernanke happened to be in California, in the midst of an editing session with Robert Frank, a Cornell University economist with whom he was writing a textbook. Frank, who had been working with Bernanke for two years, said, “What’s Bush doing appointing a Democrat?” Bernanke said, “Actually, I’m a Republican.” Bernanke rarely discusses his politics, and he tends to look at issues through a nonideological lens.

Being a Fed governor was a low-profile job, especially with Greenspan making all the decisions. But Bernanke delivered a series of often-provocative speeches (albeit in a monotone) that made him visible. In one speech, he presented an alternative, less worrisome explanation for the trade deficit. In another, he gave an overview of the Open Market Committee, whose job he likened to driving a car with a foggy windshield and an unreliable speedometer. As he put it, “Not a vehicle for inexperienced drivers.” In yet another, he discussed his personal transition from academic to policy maker, which he said was eased by the fact that the Fed relies on econometric formulas that “feel comfortably familiar.”

But as governor, Bernanke made a small contribution to a problem that would blossom in a big way on his watch. In the aftermath of the 2001 recession, inflation was at its lowest level in decades. Though consumer prices were rising, Bernanke feared a possible bout of deflation — the potentially devastating phenomenon in which prices drop, leading to lessened business activity and then still lower prices and so forth. This occurred during the Depression and also in Japan in the 1990s.

Bernanke’s argument provided a major element of support to Greenspan for keeping interest rates low. (To what extent he influenced Greenspan is hard to determine.) Both men were proponents of the risk-management approach to central banking, which argues in favor of taking out “insurance” to minimize even small risks — in this case, the risk of deflation. The deflation never occurred. It’s possible that it would have occurred had rates not been kept low, but in any case, Bernanke must be regarded as one of the intellectual authors of the low-rate policy that fed the housing bubble.

Bernanke is also firmly opposed to the notion that central banks should raise rates to prick bubbles in the stock market or elsewhere. In a paper written at the height of the dot-com mania, in late 1999, Bernanke and his friend Gertler argued that it is virtually impossible to identify a bubble before it pops. Many Wall Streeters dismiss this out of hand. Robert Barbera, the chief economist at ITG, remarked of 1999, “A child of 4 had to know it was a bubble.” Regardless, Bernanke maintains, the interest rate is too blunt a tool for addressing a narrow sector of the economy like tech stocks or even housing.

Indeed, Bernanke says he believes that the Fed's actions to cool off stock-market speculation in 1929 contributed to the Depression and was a grievous error. This view remains highly controversial. Asset bubbles are bound to burst, and various foreign central bankers argue that when they do, the economy suffers and people lose jobs. Ignoring them is hardly without risk.

When Bernanke was nominated to be the Fed chief, a meltdown was not on many people's radar. He was easily confirmed and pressed ahead on one of his main goals: to make the Fed more transparent. The Fed now reports more frequently, and also more exhaustively, on the economy. But he learned that "transparency" is a double-edged virtue. A few months after his February 2006 confirmation, at the annual White House correspondents' dinner, he told the CNBC anchor Maria Bartiromo that markets had misinterpreted his testimony in Congress as dovish. When his comments were reported, stock and bond markets tanked. Since then, the chief has spoken with more care, even among his friends.

Bernanke has discovered that even standard communication with the public — not just off-the-cuff remarks — can be fraught with peril. In recent years, a highly watched futures contract has developed that enables investors to bet on the outcomes of Open Market Committee meetings rather like Las Vegas bookmakers laying odds on the Super Bowl. The result is a weird hall of mirrors. Investors scrutinize the every utterance of Fed officials and vote with their dollars, whereupon the committee must either fulfill investors' expectations or risk a market crash. Though the committee members that I talked to (half of the current group) denied that they feel obligated to ratify the fed funds futures, none dispute that it is a factor. "There is excessive emphasis on reading the entrails of the Federal Reserve," grumbles Fisher, the Dallas Fed chief. "We get put on a table and sliced open."

The Open Market Committee has eight regularly scheduled meetings a year. The week before the members gather, they are sent the "green book," with the staff's economic outlook, and also the "blue book," with a menu of policy options. The other governors, whose offices are down the hallway from Bernanke's, typically know which way the chairman will be leaning. But the bank presidents, who generally do not confer between meetings, often arrive in Washington with no firm idea of what Bernanke wants. The group assembles around a massive, 27-foot Honduran-mahogany table in the conference room, which adjoins the chairman's office, and at 8:30 a.m. the room falls silent, a side door opens and Bernanke enters.

After briefings from the staff, the members go around the table as if it were a Princeton seminar, each expounding on his or her view of the economy (transcripts of Bernanke meetings are running much longer than those under Greenspan). The bank presidents give an idea of conditions around the country, and the governors tend to coalesce around Bernanke's view. In Greenspan's era, the chairman led off by giving a lengthy disquisition of his outlook and policy recommendations. Every member had a chance to speak after him, but the pressure to agree with the maestro was daunting. In a profound switch, Bernanke now presents his views last.

The committee also consults academic formulas that derive the theoretically “correct” fed funds rate according to the level of inflation and other economic indicators. The most famous of these formulas, known as the Taylor Rule, correctly predicts the decisions of the Federal Open Market Committee about 85 percent of the time. Bernanke disputes the idea that he could be replaced by a computer, but to some extent, the success of modern economics has downsized his job.

At least this seemed to be the case until last summer. The housing meltdown has defied the forecasting abilities of the Fed’s 220 crack economists, computers and all. As late as May, Bernanke gave a speech in which he opined that “the effect of the troubles in the subprime sector on the broader housing market will likely be limited.”

It has proved to be anything but. The country’s banks have admitted to mortgage-related losses of almost $100 billion, and the full extent of the damage, as homeowners continue to default, is not known. As the crisis unfolded last summer and fall, Bernanke repeatedly faced a devil’s choice. He could cut interest rates and risk inflation and a run on the dollar and, at the same time, be seen as bailing out people and institutions who made bad bets on subprime mortgages. Or he could do nothing and run the risk that the troubles in housing would leach into the general economy, causing people to lose jobs and possibly a recession. No decision could be made in isolation, since every move would be reflected in that hall of mirrors. And it would take time to see the effect of each decision because, as Bernanke never tires of pointing out, monetary policy works with a lag. The Open Market Committee can never know until well after the fact — until, say, a recession occurs — whether it has made the wrong move.

Soon after Bernanke’s speech in May, two hedge funds organized by Bear Stearns reported huge mortgage-related losses. Credit markets were suddenly jittery. When the committee met on Aug. 7, many expected it to give markets a little relief by easing the fed funds rate, then at 5.25 percent.

The committee voted to hold rates firm. It hotly debated, however, what to say in its statement. Some members wanted to signal that the committee considered an economic slowdown to be the greater risk. Markets, well-versed in Fed-speak, would interpret that to mean that a rate cut might be in the offing later. Bernanke maintained that inflation was still the greater risk, and he prevailed.

Two days later, France’s biggest bank, BNP Paribas, was forced to freeze three investment funds because of mortgage-related losses. By day’s end, Countrywide Financial, a leading purveyor of cheap loans during America’s mortgage boom, would announce that “unprecedented disruptions” in markets could jeopardize its financial condition. This triggered a liquidity crisis. Banks were paying as much as 6 percent for overnight money — far more than the official Fed rate of 5.25 percent. It was a moment with depression overtones: banks were hoarding liquidity.

Bernanke, who had canceled plans for a vacation to Myrtle Beach, S.C., was now confronting the specter of a financial implosion of the sort he had so often written about.

Although he knew the experience of the 1930s in his sleep, he was, in truth, unfamiliar with the exotic mortgage instruments that were failing now. Bernanke has no ego about such matters, and he consulted extensively with Timothy Geithner, the president of the New York Fed, as well as with Kevin Warsh, a fast-rising 37-year-old Fed governor and former investment banker at Morgan Stanley, whose unofficial role is to keep tabs on Wall Street. He had also forged a close relationship with Donald Kohn, his vice chairman, who has been with the Fed for 32 years and has a deep understanding of the institution and its abilities.

This unofficial war cabinet deliberated in a series of urgent telephone conversations about how to respond. On Friday, Aug. 10, the New York Fed pumped $38 billion into the markets, several times as much as on a normal Friday. Meanwhile, some of the governors, as well as William Dudley, a former Goldman Sachs economist and now the markets chief of the New York Fed, were canvassing C.E.O.'s, bank executives, traders and the like. Warsh, who was dialing contacts from his Wall Street days, was alarmed by what he heard. A source he described as a "hedge-fund billionaire" told him that credit assets weren't trading; people didn't want them at any price. "Markets weren't functioning," he says. "That is very dangerous for a central banker to hear."

Bernanke, a fan of brainstorming sessions, began to raise alternatives with his more market-savvy colleagues. Meanwhile, the stock market plunged 6 percent in a week. The central bankers were still looking for a golden mean — a way to arrest the particularized distress of banks without overheating the economy in general. On Aug. 16, in a special meeting convened by telephone, Bernanke led the Fed in just such a two-pronged effort. They cut the discount rate (for lending to banks) but left the fed funds rate unchanged. The Open Market Committee's statement, however, seemed to leave room for a cut in the future. And in the regular meeting of mid-September, they did cut the fed funds rate — by a hefty half-point. Markets were momentarily calmed.

But the pattern resumed: Fed action followed by a respite in the crisis followed by new turmoil and renewed pressure on the Fed. One bank after another — Citigroup, then Merrill Lynch, then Morgan Stanley — reported massive subprime losses. More disquietingly, although the fed funds rate was a half-point lower, various other interest rates — the ones that people and institutions actually borrow at — hadn't moved by as much. This meant that the Fed's rate cut hadn't worked: credit conditions had not really eased.

Of particular concern to Bernanke, prices of seemingly sound credit instruments (like jumbo mortgages, which were not experiencing unusual default rates) plunged, and credit for corporate acquisitions evaporated. Clearly, the subprime crisis could no longer be regarded as a little problem of Wall Street or even of the housing industry. Securities backed by subprime mortgages plummeted, but securities backed by other, more stable assets also weakened. When specific problems breed generalized selling, central bankers get nervous.

On Oct. 31, as the Open Market Committee gathered, the Commerce Department reported that in the third quarter, the economy grew at 3.9 percent, a surprisingly robust clip. Americans were still buying cars; factories were churning out goods. The news solidified the feeling of the committee hawks that they should hold rates firm. But Bernanke — ever the believer in tailoring policy to conditions as they are forecast, and not just as they are — figured that the economy was bound to weaken. The committee cut the rate by a quarter-point. Minutes of the meeting would describe it as a "close call," suggesting a significant amount of internal disagreement.

As if to forestall criticism that the Fed had bowed to markets, its statement said "the upside risks to inflation roughly balance the downside risks to growth" — a clear indication that no more cuts were anticipated. Still, Jim Cramer, the high-voltage CNBC stock tout, gloated, "The Fed has got your back," implying gleefully that the Fed would protect investors at all costs. The Economist charged that the chief was a "pushover" for Wall Street, and The Wall Street Journal opined that the Bernanke Fed had become a "Pavlovian" slave to the market.

The Fed's dance with the futures market is a pressure-packed aspect for Bernanke, who knows that investors stake millions of dollars every day on what the chairman will do, and also react to it with the shortest-term horizon imaginable. But Bernanke cannot ignore the futures market, as tempting as that might be. He was reared on the academic theory of "rational expectations," which posits that for monetary policy to work, the market and the Fed must each have a clear idea of where the other is going. Investors have to watch the Fed, but the Fed also has to take the pulse of investors.

In November, Wall Street began to agitate for a third rate cut. Bernanke and Kohn, the Fed's vice chairman, gave speeches late in the month, indicating that they, too, were adjusting their economic outlook downward, because of repeated signs that bank credit was tightening. But when the rate cut came, in December, it was only a quarter-point instead of a half. Markets went ballistic: the Dow Jones average plummeted 300 points, and traders interpreted the committee's moderate stance as a betrayal. Paul McCulley, a managing director at Pimco, a big bond-trading firm, accused the Fed of "breaking a covenant." Mark Zandi, chief economist of Moody's Economy.com, complained that the Open Market Committee's press release, a waffling statement citing the "uncertainty surrounding the outlook," read as if it were the product of a committee.

Committee members dispute the notion that Bernanke doesn't lead, though it's assuredly more of a group endeavor than it was in the past. As Bernanke told me, "It's a consensus-based system . . . with a leader. It's not that I dictate the answer, but I have to be comfortable with the outcome of the process, and as chairman I aim to shape a process that produces the best outcome."

What about the charge that the Fed is simply bailing out Wall Street? Bernanke invariably insists that the Fed is not concerned with investors per se. However, as he noted in August when central bankers gathered in Jackson Hole, Wyo., "developments in financial markets can have broad economic effects felt by many outside the markets."

When Wall Street shudders, the Fed pays attention — but only, various Fed governors argued to me, because Wall Street's angst is a symptom of real or potential economic problems: in this case, a credit crunch and an economic slowdown.

In late December, Bernanke announced two new initiatives: an auction to lend money to banks (the discount-window loans did not seem to be working) and a proposal to tighten mortgage regulations, which would ideally reduce the odds of another housing bubble down the road. But history will no doubt judge him on how effectively he deals with this housing meltdown.

There is plenty of room to quibble with the Open Market Committee's various decisions, but viewed from a distance, the individual moves and even the directional shifts seem less important. By cutting rates by a total of one point since August, Bernanke has clearly moved toward a policy of stimulus. Perhaps unconsciously, he has mimicked the directive of Irving Fisher, one of the United States' first great economists, who likened the task of central bankers to that of steering a bicycle: "Turn the wheel slightly, and if that is not enough, you turn it some more, or if you turn it too much, you turn it back."

Such an approach can work in normal times. Indeed, the United States has spent only 16 months of the last quarter-century in recession — a vast improvement over previous eras. The recent period has been called the Great Moderation; growth cycles have evened out, and inflation has abated in almost every country around the globe.

But will it work now? The Fed faces not only the twin demons of recession and inflation but also the specter that further rate cuts would cause foreign investors — who own more than $2 trillion of U.S. debt — to bail out, sending U.S. interest rates soaring. That, combined with the steadily worsening housing slump, could make for a long and nasty recession. And it would mark the end to the Great Moderation.

Perhaps the Great Moderation has been the result of good luck. Or perhaps it has been because of improved management skills —business learning not to overstock inventories, for example. Bernanke has written that it is something else. He sees it as a result, in large part, of better monetary policies. He says that central bankers have finally learned how to guide economies — not with mystique but with economic science. If that is so, we will not need a wizard behind the curtain anymore, only intelligent engineers who can steer markets to a promised land of rational expectations. To prove that he is right, Bernanke will need to minimize or, if possible, avoid the looming recession that looks ever more likely. It will not be easy. Bernanke's education has just begun.

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