Economics of Democracy: The Ben Bernanke Project

Presented by

The Echo Foundation

"I'm not one of those people who looks at this as some kind of video game. I come from Main Street, from a small town that's really depressed. This is all very real to me." —Ben Bernanke, December 2009

THE ECHO FOUNDATION
1125 E. Morehead St. Suite 101
Charlotte, NC 28204
704-347-3844
www.echofoundation.org
www.inthefootstepsofeliewiesel.org
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Jack Amoroso, Cannon School
Kate Eiselt, Myers Park High School
Ameena Kapadia, Charlotte Country Day School
Hosana Naod, Providence Day School
Hakim Oden, Charlotte Latin School
Jack Osment, Myers Park High School
Tanisha Paul, Charlotte Country Day School
Sophia Richter, Myers Park High School
Himani Shetti, Providence Day School
Introduction

In these turbulent times, it is more important than ever, to equip young people with knowledge and compassion so that they are motivated to make a positive impact on society and in the world. Opportunities to create a more just and humane world abound, but where are the guidelines? What knowledge is necessary to ensure competent leadership? What world do we hope for?

Young people across the globe will be the leaders of tomorrow; they deserve your finest investment in them, for the world will be in their hands. To that end, The Echo Foundation creates curricula teaching about world humanitarians who are our focus during any given year. The community at large has had the pleasure of learning from Wole Soyinka, Nobel Literature Prize winner, Dr. Paul Farmer, co-founder, Partners in Health, Kerry Kennedy, advocate for Women and Children's Rights around the world and Echo Honorary Chair, Nobel Peace Prize winner, Elie Wiesel – this is to name only a few from whom we have gained strength and amazing insight.

This academic year, we are honored to focus on Dr. Ben Bernanke, former Chairman of the Federal Reserve, and the power of economics that shape a democracy. The information contained in Echo's newest curriculum, the *Economics of Democracy: The Ben Bernanke Project*, is a collection of articles, interviews, resources, study questions and more, compiled by nine high school Echo Interns with guidance from their economic advisors. It is clear to anyone who studies economics, that there are frequently several perspectives to any given condition. We have tried to be even-handed, sharing several points of view so that students may understand the complexity of economics and, at the same time, acquire the knowledge to shape their own, informed opinions.

We give this curriculum to teachers anywhere in the hope that they will find excitement and fulfillment in their work with today's young people. We honor those who devote their lives to the next generation and we thank them for their commitment. To the students: We love you; we believe in you! Soon the world will be yours!

*Stephanie Ansaldo, President*
*The Echo Foundation*
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Ben Bernanke

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"[Bernanke] keeps his feelings and beliefs private... but it's really embedded in who he is." —Mark Gertler (Ben Bernanke close friend and collaborator)
Ben S. Bernanke Biography

Ben S. Bernanke is a Distinguished Fellow in Residence with the Economic Studies Program at the Brookings Institution. From February 2006 through January 2014, he was Chairman of the Board of Governors of the Federal Reserve System. Dr. Bernanke also served as Chairman of the Federal Open Market Committee, the System’s principal monetary policymaking body.

Before his appointment as Chairman, Dr. Bernanke was Chairman of the President’s Council of Economic Advisers, from June 2005 to January 2006. He had already served the Federal Reserve System in several roles. He was a member of the Board of Governors of the Federal Reserve System from 2002 to 2005; a visiting scholar at the Federal Reserve Banks of Philadelphia (1987-89), Boston (1989-90), and New York (1990-91, 1994-96); and a member of the Academic Advisory Panel at the Federal Reserve Bank of New York (1990-2002).

From 1994 to 1996, Dr. Bernanke was the Class of 1926 Professor of Economics and Public Affairs at Princeton University. He was then the Howard Harrison and Gabrielle Snyder Beck Professor of Economics and Public Affairs and Chair of the Economics Department at the university from 1996 to 2002. Dr. Bernanke had been a Professor of Economics and Public Affairs at Princeton since 1985.

Before arriving at Princeton, Dr. Bernanke was an Associate Professor of Economics (1983-85) and an Assistant Professor of Economics (1979-83) at the Graduate School of Business at Stanford University. His teaching career also included serving as a Visiting Professor of Economics at New York University (1993) and at the Massachusetts Institute of Technology (1989-90).

Dr. Bernanke has published many articles on a wide variety of economic issues, including monetary policy and macroeconomics, and he is the author of several scholarly books and two textbooks. He has held a Guggenheim Fellowship and a Sloan Fellowship, and he is a Fellow of the Econometric Society and of the American Academy of Arts and Sciences. Dr. Bernanke served as the Director of the Monetary Economics Program of the National Bureau of Economic Research (NER) and as a member of the NBER’s Business Cycle Dating Committee. In July 2001, he was appointed Editor of the American Economic Review. Dr. Bernanke’s work with civic and professional groups includes having served two terms as a member of the Montgomery Township (N.J.) Board of Education.

Dr. Bernanke was born in December 1953 in Augusta, Georgia, and grew up in Dillon, South Carolina. He received a B.A. in economics in 1975 from Harvard University (summa cum laude) and a Ph.D. in economics in 1979 from the Massachusetts Institute of Technology.

Dr. Bernanke is married and has two children.
Timeline

1953
Born December 13, in Augusta, Georgia to Edna and Philip Bernanke.

1965
Wins South Carolina state spelling bee.

1971-1975
Graduates Dillon High School as valedictorian with top SAT scores in South Carolina.
Enters Harvard University.
Begins working at South of the Border in South Carolina and construction at hospital.

1975
Graduates Harvard with B.A. in economics.
Enters Massachusetts Institute of Technology.

1978
Weds Anna Friedmann.

1979
Graduates MIT with a PhD in Economics.

1979-1983
Assistant Professor of Economics at the Graduate School of Business, Stanford.

1983-1985
Associate Professor of Economics, Stanford University.

1985
Joined faculty at Princeton University.

1985-2002
Professor of Economics and Public Affairs, Princeton University.

1996-2002
Economics Department Chair, Princeton University.

2002-2005
Member of Board of Governors, Federal Reserve.
2005-2006
President’s Council of Economic Advisors, Chairman

2006
Begins first term as Federal Reserve Chairman.

2006-2010
Financial Crisis and Great Recession.

2010
Nominated for second term as Federal Reserve Chairman.

2013
President Barack Obama nominates Janet Yellen as Federal Reserve Chair successor.

2014
January 31 Bernanke steps down as Federal Reserve Chairman. Joins Brookings Institution as a Senior Fellow.
Ben Bernanke's Hometown: Dillon, South Carolina
Important People in Ben Bernanke’s Life

Created by Student Interns, The Echo Foundation

(1) President George W. Bush:
- Appointed Bernanke to be on his Council of Economic Advisers.
- Nominated Bernanke to be the chairman of the Federal Reserve.

(2) President Barack Obama:
- Nominated Bernanke for a second term as chairman of the Federal Reserve.

(3) Mark Gertler:
- Close friend and collaborator with Bernanke.
- Supported him and his morals: “keeps his feelings and beliefs private... but it's really embedded in who he is” (Kessler).

(4) Tim Geithner:
- Treasurer Secretary
- Geithner served as head of the New York Fed during the Bush Administration (he was basically Bernanke’s Ambassador to Wall Street).

(5) Anna Friedmann:
- Ben Bernanke’s wife
- Keeps Bernanke grounded and helps him to remember his morals: “He prefers to eat at home with his wife, who still makes him do the dishes and take out the trash. Then they do crosswords or read” (Grunwald).

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Economics of Democracy: The Ben Bernanke Project
Fun Facts about Dr. Bernanke!

Created by Student Interns, The Echo Foundation

1. In high school, Bernanke enjoyed playing the saxophone in his school band. In addition, he was a part of a small four man band called The FancyPants because they wore plaid trousers!

2. Bernanke's grandfather founded a small drug store in Dillon called Jay Bee Drug Co.

3. Ben Bernanke was nominated Time Magazine Person of the Year in 2009.

4. Bernanke studied 3 other majors before economics.

5. At the age of 11, Dr. Bernanke won the South Carolina state spelling bee!

6. Bernanke's family was one of the only Jewish families in his small Christian community. As a teenager, he participated in the Sabbath services at his local synagogue.

7. While a PhD student at MIT, Dr. Bernanke met his future wife, Anna, on a blind date!

8. As an economics professor at Princeton, Bernanke specialized in teaching about the Great Depression.

9. Instead of attending dinner parties, Bernanke enjoys staying home to eat and play crossword puzzles with his wife, who still makes him wash the dishes!

10. Bernanke is a strong advocate of loose monetary policies.

11. Dr. Bernanke enjoys playing playing basketball in the Federal Reserve Squash Court!

12. There is an exit alongside Interstate Highway 95 in Bernanke's hometown of Dillon called the Ben Bernanke Interchange.

13. A huge fan of the Washington Nationals, Dr. Bernanke rarely misses a game.

Birth and Early Life

Ben Shalom Bernanke was born in Augusta, Georgia but grew up in the small town of Dillon, South Carolina by Bernanke's grandfather, and his mother was a school teacher. Bernanke has two younger siblings, Seth and Sharon. The Bernankees were a strong Jewish family, and the young Ben often volunteered in his local synagogue. As a teenager, Bernanke worked construction and waited tables at South of the Border. He also enjoyed playing the saxophone, and was a very bright student.

Education and Young Adulthood

Growing up, Dr. Bernanke consistently excelled in school. Top of his class, he graduated as valedictorian of his high school, and from the start, it was clear that he was a bright student. Scoring a 1590 out of 1600 on his SAT, he earned the highest score in the whole state of South Carolina! Dr. Bernanke was also a National Merit Scholar, and attended both Harvard and MIT.

Controversy, Support and Opposition

From 2009-2010, support for Dr. Bernanke was very little. As a result of the economic Recession, both republicans and democrats scrutinized Bernanke and many did not favor the idea of his second term. Opponent Russell D. Feingold stated, “Under the watch of Ben Bernanke, the Federal Reserve permitted grossly irresponsible financial activities that led to the worst financial crisis since the Great Depression.” (Chan and Herszenhorn). However, Bernanke did receive support from several democratic senators, such as Christopher J. Dodd and Mary L. Landreiu, who had stated that "failing to reappoint Mr. Bernanke would only add turmoil to markets that are just beginning to recover.” (Chan and Herszenhorn).

Impact

Dr. Ben Bernanke impacted the Federal Reserve in several ways. He worked tirelessly through the financial crisis to preserve the transparency and stability of the banking system. Through frequent testifying and town hall meetings, Bernanke pushed to explain his actions to the citizens and worked to avoid an economic catastrophe. However, he admits he did not realize just how fragile the economy had become, and regrets the hardships that it caused. Dr. Bernanke expresses his hope and confidence that economic growth will continue.
Ben Bernanke: Life Summary

Created by Student Interns, The Echo Foundation

Ben Shalom Bernanke was born on December 13, 1953 in Augusta, Georgia. However, he grew up in Dillon, SC, where his grandfather moved during the Depression, and established a pharmacy called Jay Bee Drugs, which became an “old-fashioned business” on Main Street in Dillon, SC. Bernanke’s father also worked there, and the family pharmacy was one of the few businesses in Dillon that extended credit to African American people.

Bernanke was a brilliant student who thrived in school. He won the state spelling bee at the age of 11, and in high school he taught himself calculus. He also scored the highest SAT score in the state of South Carolina. From there, he was accepted into Harvard University. In 1975, he graduated from Harvard with a bachelor’s degree in economics. Bernanke continued his studies at the Massachusetts Institute of Technology where he received his Ph. D in economics in 1979.

After graduating from MIT, Bernanke became an economics professor at Stanford University. In the mid-1980’s, he went on to teach at Princeton, where he became the head of their department of economics.

Following his career in academia, Bernanke became involved in the Federal Reserve as a scholar and advisor. He went on to become a Federal Reserve governor. Three years later, Bush appointed Bernanke to serve as the chairman for his Council of Economic Advisers. In 2005, with the support of senators such as John Kerry and Charles Schumer, he was nominated to replace Alan Greenspan as chairman of the Federal Reserve, and in January 2006 he began his first term as chairman.

As the 14th chairman of the Federal Reserve, Ben Bernanke helped guide monetary policy during the Recession. He created solutions to aid failing financial institutions in 2008. In 2010, he was nominated for a second term by President Barack Obama. Although there was heated controversy regarding his actions resulting from the 2008 economic crash, he was still approved for his second and final term. In October of 2013, Obama nominated Janet Yellen as Bernanke’s replacement. In January of 2014, after serving two terms, Bernanke stepped down from his role as chairman of the Federal Reserve.

Ben Bernanke was an incredibly influential figure in the Federal Reserve. He utilized his morals and extensive knowledge to guide him in implementing numerous policies. By promoting the transparency of the central bank, he returned the Federal Reserve back to the root of its purpose. He worked to stabilize the banking industry throughout the economic crisis of the late 2000’s.
Student Viewpoints: Influences on Ben Bernanke's Life

Created by Student Interns, The Echo Foundation

Many factors in Dr. Bernanke’s early life and background have had a substantial impact on his work. He grew up in ‘Main Street’ Dillon, South Carolina, where his family ran a small pharmacy. The Bernanke family business was one of the only businesses in Dillon that extended credit to black people, which educated him on diversity and the social differences in society.

Immersed in the culture of the working class, he understood the hardships of living a not-so-luxurious life; working in construction and restaurants as a teenager influenced his perspective on work and formed a life-long understanding and respect for the working class. This respect for the working class had a direct impact on his decisions while he was chairman of the Federal Reserve. He is empathetic toward the issue of unemployment and the effects of the Recession, saying “I really regret all the hardship. The scars of unemployment can last a long time” (Bernanke). After President Obama appointed him to a second term as chairman, he worked hard in the debate over the Federal Reserve and its role. “I understand why people are frustrated. I'm frustrated, too,” Bernanke says. “I'm not one of those people who looks at this as some kind of video game. I come from Main Street, from a small town that's really depressed. This is all very real to me.”

Along with his appreciation of the working class, he was very interested and educated on the Great Depression. His grandfather, Jonas, was an Austro-Hungarian army officer and Russian prisoner of war. He moved to Dillon and started a pharmacy during the Depression to establish a new life for himself. Bernanke is very familiar with the effects of the Depression because of what his grandfather endured. His interest and education on the Depression “instilled a life-long interest in the effects of deflation and its impact on people’s lives” (Smith). As a result, Bernanke made it a priority to prevent deflation as Federal Reserve chairman.

In addition, his religion- Judaism- continues to be a part of his life. As a teenager, “he helped lead services and roll the Torah scrolls in the town’s synagogue” (Kessler). Friend and collaborator Mark Gertler stated that Bernanke “keeps his feelings and beliefs private... but it’s really embedded in who he is.”
An Overview of Bernanke's Work at the Federal Reserve

Created by Student Interns, The Echo Foundation

On February 1st, 2006, Dr. Ben Bernanke was selected to become Chairman of the United States Federal Reserve. As the successor to Al Greenspan, Bernanke was introduced to the world by President Bush as "...the right man to build off the record Alan Greenspan has established." Throughout his time in the Federal Reserve, Bernanke embarked on the quest to lead the Reserve's response to the financial crisis as well as the Great Recession of the late 2000's. Bernanke was responsible for guiding the monetary policy, as well as adopting an inflation target of only 2%. He aimed to "make monetary policy more predictable and more efficient" (Bernanke). He managed to bring interest rates to an all time low, while promising to keep them there.

Dr. Ben Bernanke also led the Federal Reserve in implementing processes such as Quantitative Easing, where the central bank essentially buys billions of dollars worth of long-term Treasuries and mortgage-backed growth in an effort to stimulate economic prosperity. Dr. Bernanke utilized his extensive knowledge on the Great Depression to influence his policy making in an effort to prevent making the same mistakes as in the 1930's. In addition to this, Bernanke sought to push for transparency and better communication of the Fed by holding numerous press conferences. He believed that the clarity of the central bank to the United States citizens was a crucial factor in its success. In his first term, Bernanke supported the takeover of Bear Sterns by JP Morgan Chase, as well as the $150 billion bailout of insurance superpower AIG. He proposed the Bernanke Doctrine, which presented the options available to the Fed in order to control monetary policy and price stability, while combating deflation.

However, throughout his second term, Bernanke was faced with scrutiny regarding controversy of his work as chairman throughout the financial crisis. The New York Times stated that Bernanke "has been attacked for failing to foresee the financial crisis, for bailing out Wall Street, and, most recently, for injecting an additional $600 billion into the banking system to give the slow recovery a boost" (Chan). Bernanke has since apologized for not being able to foresee just how immense the crisis was, and expressed his hope for the continuity of economic growth. However, despite the scrutiny, Bernanke remains a hero for his work at the Reserve because he "energized the stock market, lowered long-term interest rates, supported the interest-rate-sensitive housing and auto markets, and cut unemployment."
Is Ben Bernanke Having Fun Yet?

By Sewell Chan
The New York Times
May 15, 2010

NINE days ago, Ben S. Bernanke, the Federal Reserve chairman, caught a Friday-night flight from here so he could address 1,100 graduates at the University of South Carolina the next morning about “The Economics of Happiness.” After the speech, he took a call in his hotel room from Jean-Claude Trichet, head of the European Central Bank, and the next day pledged billions of dollars to help Europe stave off a financial crisis — a flashback to the huge lending programs the Fed put together in 2008 to forestall economic collapse at home.

Mr. Bernanke, 56, hasn’t had much time to reflect on whether history’s verdict on his extraordinary actions of recent years will be harsh or forgiving. Nor has he had time to read the spate of new books about how he and two Treasury secretaries, Henry M. Paulson Jr. and Timothy F. Geithner, navigated a maelstrom that left millions of Americans jobless, homeless or broke.

Nominated last August to a second four-year term by President Obama, Mr. Bernanke nearly saw his career in public service scuttled by widespread discontent about lax regulation of Wall Street and historic federal bailouts that rescued well-heeled bankers from their own mistakes. After a raucous debate in January, the Senate confirmed Mr. Bernanke by a vote of 70 to 30 — the lowest vote of support for any Fed chief since the central bank’s creation in 1913.

Today, early in his fifth year as chairman, Mr. Bernanke faces challenges far different from any that his predecessor, Alan Greenspan, confronted in his 18-year tenure. As the nation’s all-powerful arbiter of interest rates, which directly affect banks’ willingness to lend the funds that fuel the economy, Mr. Bernanke has held the benchmark short-term rate at nearly zero since December 2008, aiming to shore up faltering financial institutions.

He has to figure out not only when to start raising rates — weighing high unemployment against the fear of inflation — but also how to begin shrinking the Fed’s balance sheet, which has more than doubled, to $2.3 trillion, since the crisis started.
Despite the Fed’s now-notorious failure to rein in years of pell-mell, subprime mortgage lending, the Senate is considering entrusting the Fed with added regulatory powers: oversight of the largest financial institutions, including nonbanks like insurers, and an enhanced duty to monitor the kind of risky behavior that brought the American economy to the precipice.

Just last week, the Fed fought off proposals that would have subjected its monetary policy decisions to routine audits and transferred oversight of thousands of Fed-regulated state-chartered banks to the Federal Deposit Insurance Corporation. But it is also likely to be forced to disclose much more about how, exactly, it went about rescuing the financial sector in the last few years — a matter of heated debate in Congress and the courts.

“Responsible people in Congress have recognized that you can’t have a strong economy without a solid independent central bank that has appropriate regulatory roles,” Mr. Bernanke said in an interview. “I continue to count on good sense and wisdom to trump short-term political advantage.”

He’s also aware that new mandates might just set up the Fed for future rounds of criticism. “We have to manage expectations,” he says. “There is no possibility of eliminating financial crises, even severe ones, but that does not mean there isn’t a meaningful opportunity to reduce the risks and reduce the effects, which is what this is all about.”

A POST-CRISIS conventional wisdom has arisen around Mr. Bernanke, who as a scholar produced ground-breaking research exploring the intersection of macroeconomics and finance.

Some see his failure to anticipate the nature and severity of the financial crisis — and his role in helping Mr. Greenspan keep interest rates at a level that might have fed housing speculation — as unforgivable lapses. Others say there was no one better equipped, once the crisis began, to respond with the force, resolve and imagination he deployed to prevent an economic apocalypse.

The two views are not mutually exclusive, as Mr. Bernanke concedes.

“Some people have asked, ‘Why didn’t the Fed stop this from happening?’ ” he says. “Well, like other regulators, there were some things we could have done, at least with hindsight. But we had neither the mandate nor the tools to be the financial system’s supercop. We had well-defined responsibilities that excluded many of the areas that turned out to be problems.”

Mr. Bernanke says the regulatory apparatus that grew out of the Depression, oriented around commercial banks, didn’t adapt to the dizzying pace of financial innovation and interconnected, fast-moving markets.
In fact, markets can now move so fast that regulators sometimes seem winded just trying to catch up. When the stock market plunged 1,000 points on May 6 before reversing direction almost as quickly, regulators were at a loss to explain why. They still are.

For his part, Mr. Bernanke says he was concerned but not shocked by the drop. He says he and deputies had been girding for spillover effects from the European debt crisis for months and had been in regular contact with their European counterparts.

The brief market plunge “was just a small indicator of how complex and chaotic, in the formal sense, these systems have become,” he says. “Our financial system is so complicated and so interactive — so many different markets in different countries and so many sets of rules. What happened in the stock market is just a little example of how things can cascade or how technology can interact with market panic.”

More than ever, he suggests, the Fed’s supervisory role needs to be reoriented around financial stability.

“I just think it’s not realistic to think that human beings can fully anticipate all of possible interactions and complex developments,” he says. “The best approach for dealing with this uncertainty is to make sure that the system is fundamentally resilient and that we have as many fail-safes and backup arrangements as possible.”

Crisis-fighter was not the primary role that Mr. Bernanke expected when he initially signed on as Fed chairman in 2006. His first two years were dotted with missteps. He memorably and erroneously described the subprime mess as “contained” and underestimated the depths of the broader housing crisis and how intertwined it had become with complex Wall Street trading.

As the crisis accelerated, the Fed lent $29 billion to engineer Bear Stearns’ sale in March 2008 to JPMorgan Chase. The following August, the mortgage behemoths Fannie Mae and Freddie Mac were seized. Then, in September, after a desperate search for a buyer, the Treasury and the Fed let Lehman Brothers go bankrupt.

The Fed helped broker Merrill Lynch’s sale to Bank of America; swooped in with $85 billion in a controversial rescue of the insurance giant A.I.G., and supported Mr. Paulson’s plea to Congress for a $700 billion bank bailout.

Only after this first, experimental and headlong rush to place outsized Band-Aids on the financial system did the Fed seem to get its footing — aggressively dropping rates and deploying an
alphabet soup of lending programs. It spent last year acquiring mortgage bonds, Treasury securities and debts owed by Fannie and Freddie, while also conducting “stress tests” of the largest financial institutions.

Friends and acquaintances say that all the effort and creativity needed to wrestle with the crisis have taken a visible toll on Mr. Bernanke.

“You could see it weighed very heavily on him,” says Alan N. Rechtschaffen, a lawyer and derivatives expert who sees Mr. Bernanke periodically. “He understood the gravity of what was going on. You could see it in his face.”

L. Douglas Lee, an economic forecaster, worried that the chairman might be on the brink of a meltdown of his own during the height of the crisis. “He just looked like he was fatigued,” Mr. Lee says. “He doesn’t look that way now.”

And Maurice Obstfeld, an economist at the University of California, Berkeley, who has been a friend since graduate school, says of Mr. Bernanke: “I don’t know how he has made it through the ordeal that he had to go through.”

Mr. Bernanke, accustomed to working every day of the week, says that he is logging fewer hours, but as he describes his labors he seems more motivated by duty than pleasure.

“My training and experience equipped me to serve the public, and I believe that I have a responsibility to provide that service,” he says. “I am not doing this for personal enjoyment.”

— Ben S. Bernanke, June 9, 2006

BEN BERMANKE was first quoted in a newspaper, The Charlotte Observer, in 1958, asking, “Grandma, why don’t you teach my mommy how to make blintzes?” He was 4 at the time.

His grandparents were Jewish immigrants from Eastern Europe who traced an uncommon route to the Carolinas. His paternal grandparents, Jonas and Pauline, immigrated from what is now Poland and owned a modest Manhattan drugstore. Their son Philip, Mr. Bernanke’s father, was born in Washington Heights, and the family moved in 1941 to Dillon, S.C., where it opened the Jay Bee drugstore, later run by Philip and his brother.

Mr. Bernanke’s maternal grandparents, Harold and Marcia Friedman, were Lithuanian immigrants who ended up in Charlotte, N.C., where Mr. Bernanke’s mother, Edna, was raised. Marcia, who made the blintzes, worked in a shoe factory. After she died, when Ben was 13, Harold, a cantor and kosher butcher, moved in with the Bernakes.
Philip and Edna met while studying at different campuses of the University of North Carolina; Ben was the oldest of their three children and could add and subtract as a toddler. He skipped first grade, memorized baseball statistics and, deploying the Hebrew his grandfather taught him, helped lead services in Dillon’s small synagogue. At 11, he was a spelling-bee champ but flubbed a national round by misspelling “edelweiss.”

At Dillon High School, he played saxophone in the marching band, scored a near-perfect 1,590 on the SAT and won a $500 scholarship and a tour of Europe, thanks to Pan Am. He held summer jobs in hospital construction and at South of the Border, a souvenir hub along Interstate 95. He wore his black hair long and eventually adopted a prominent handlebar mustache.

His high school didn’t integrate until his senior year, but he had black friends — including Kenneth R. Manning, six years older, who was already at Harvard and urged Mr. Bernanke to apply there. The Vietnam war draft was still active when he arrived at Harvard; he had a high lottery number in the draft — 335 — and was never called.

He had planned to study math, then flirted with physics and English before settling on economics. “Ben Bernanke, I learned more from sitting behind you in Ec 10 than from the class,” a classmate, Suzanne Powell Bishopric, wrote in a report for a Class of 1975 reunion that takes place next month. (Mr. Bernanke isn’t attending.)

Dale W. Jorgenson taught Mr. Bernanke econometrics at Harvard and supervised his senior thesis, which used economic models to examine natural-gas pricing — a timely topic in the wake of the 1973 oil crisis.

Mr. Bernanke lived in Winthrop House, a dorm along the Charles River, where classmates included Lloyd C. Blankfein, now C.E.O. of Goldman Sachs (who didn’t know Mr. Bernanke well).

At Mr. Jorgenson’s direction, Mr. Bernanke entered the Ph.D. program in economics at the Massachusetts Institute of Technology. Fellow graduate students there included Paul Krugman and Kenneth S. Rogoff, who would become two of the best-known economists of their generation. (Mr. Krugman also writes a column for The New York Times.)

Alexander S. Kelso Jr., who shared an M.I.T. office with Mr. Bernanke, says his classmate “may have been the smartest one of us, but he had plenty of competition.”

In 1978, Mr. Bernanke married Anna Friedmann, whom he had met on a blind date. A Wellesley alumna, she had been born in Rome, the daughter of Jewish refugees from Croatia, and grew up in Denver.

Mr. Bernanke’s 1979 dissertation explained why firms delay decisions to invest in times of uncertainty. He turned down Harvard for a job at Stanford’s business school. (His wife, a
Spanish teacher, received a master’s in Spanish from Stanford and recently founded a school for disadvantaged teenagers.)

“He was an extremely good teacher from the first,” says Jeremy I. Bulow, a friend from M.I.T. who joined Stanford’s business school at the same time and still teaches there. “He’s probably had to make an effort to learn how to be less clear to do his current job.”

Stanley Fischer, Mr. Bernanke’s adviser at M.I.T., had urged his student to read “The Great Contraction, 1929-1933,” in which Milton Friedman and Anna Jacobson Schwartz blamed the Fed’s failure to expand the money supply for the Depression’s severity and duration.

The book ignited a passion.

“I guess I am a Depression buff, the way some people are Civil War buffs,” Mr. Bernanke once wrote.

In his writings, Mr. Bernanke explained how credit market disruptions — in particular, bank failures and debt deflation — worsened the depth and length of the Depression, and identified a “financial accelerator,” the idea that conditions in financial markets amplify developments in the real economy.

In 1985, he left Stanford for Princeton. His children — Joel, born in 1982, and Alyssa, born in 1986 — enrolled in public schools, and for six years he served on the school board in Montgomery Township, N.J.

It was not his only taste of leadership. In 1996, he became chairman of Princeton’s economics department, where he helped strengthen the finance program.

“There’s a very strong group of egos here, so to get anything done requires a certain amount of diplomatic ability,” recalls Harvey S. Rosen, Mr. Bernanke’s predecessor as department chairman.

Mr. Rosen was surprised when Mr. Bernanke signed up for a second term as chairman; many professors consider the task a distraction. “I think he had accomplished a lot his first term,” Mr. Rosen says, “and he just wanted to go see it through.”
"Because I appreciate the role of chance and contingency in human events, I try to be appropriately realistic about my own capabilities. I know there is much that I don’t know."

— Ben S. Bernanke, May 22, 2009

IN 2002, R. Glenn Hubbard, a top economic adviser to President George W. Bush, asked whether Mr. Bernanke would consider serving as a Fed governor. "I was mildly surprised that Ben wanted to come," Mr. Hubbard recalls. "I reached out to him expecting him to say, 'No way.'"

That Mr. Bernanke was a Republican came as a surprise even to longtime colleagues like Alan S. Blinder, a Princeton economist who had been the Fed's vice chairman during the Clinton administration. Mr. Bernanke, who is soft-spoken, is socially liberal but fiscally conservative.

The economy was slow to recover after the 2001 recession, and Mr. Bernanke and his Fed colleagues backed Mr. Greenspan as the Fed gingerly began to raise rates in 2004, while still keeping them at historically low levels. Critics have argued that easy loans born from artificially low rates helped fuel the housing bubble, an accusation Mr. Greenspan and Mr. Bernanke have denied.

In 2005, the White House tapped Mr. Bernanke to lead the Council of Economic Advisers. By then, he and his wife had bought a house on Capitol Hill, leaving open what they would do next.

Seven months later, he was Mr. Bush's choice to lead the Fed. He had never worked in the markets and was neither politically active nor close to Mr. Bush, but was considered a safe pick. The Senate confirmed him on Jan. 31, 2006, the day Mr. Greenspan retired.

"I never thought I would get this job," says Mr. Bernanke, adding that 9/11 had spurred his interest in public service. "But now that I have it obviously it's important to do the very best I can — which is all I can do."

In a 2006 open letter, the Harvard economist N. Gregory Mankiw urged Mr. Bernanke to "accept a lower public profile than Greenspan" and "become as boring a public figure as possible." The Fed's job, he wrote, "is to create stability, not excitement."
Mr. Bernanke fits that bill. He is reserved, has a dry wit and doesn’t appear to relish the trappings of office. He once lamented that joining the Fed meant he couldn’t wear Hawaiian shirts and Bermuda shorts to work.

“Whatever political skills I have, have been gained painfully over many years,” he says. “I’m not naturally that kind of person.”

In January, as senators took turns denouncing Mr. Bernanke before his reconfirmation vote, he didn’t follow along on television or the Web. He did not learn the vote’s outcome until two aides interrupted a meeting to tell him.

“I had two principal objectives in accepting a second term,” he says. “First, I wanted to see through the process of financial regulatory reform, which will have long-lasting impacts on our economy. Second, I felt that I could play a useful role in managing the exit from our extraordinary policies, including our highly accommodative monetary policies.”

Ever the economic historian, Mr. Bernanke added, “Reflecting on the problems that were caused by the long transition between Presidents Hoover and Roosevelt during the Great Depression, I hoped to provide some policy continuity during the period of presidential transition.”

“Keep a ‘gratitude journal,’ in which you routinely list experiences and circumstances for which you are grateful.”

— Ben S. Bernanke, May 8, 2010

WILL future economists view Mr. Bernanke more charitably than some current ones?

John B. Taylor, a monetary policy expert, has accused Mr. Bernanke of bungling interest rates and conducting ad hoc bailouts. The leading historian of the Fed, Allan H. Meltzer, writes that the institution has been reduced to “a financing arm of the Treasury.” Anna Schwartz, whose work had so influenced the young Mr. Bernanke, called on Mr. Obama to replace him.

And Richard A. Posner, a judge and an authority on law and economics, fumed in a new book, “Bernanke has been shameless in refusing to assign any share of responsibility for the crisis to mismanagement of monetary policy.”

Mr. Bernanke defended the Fed’s monetary policy decisions in a January speech to the American Economic Association. But in private, he seems puzzled and dismayed by the attacks. Friends don’t dispute that.
"When you've gone your whole professional life with people always ecstatic about everything you've done, to have people now go on TV and say, 'This guy is an idiot' — that just can't be fun," Mr. Bernanke says.

Others say that whatever critics think about the Fed's various maneuvers over the last few years, they believe that Mr. Bernanke helped stave off a much deeper crisis that would have occurred if he had merely sat on his hands.

"People just don't get how close the economy was to falling off the cliff," says Mark Gertler, a New York University economist and one of Mr. Bernanke's closest friends. "Yes, you can say the Fed didn't see it coming, but the way it responded after the crisis started to unfold was incredible. I honestly think there's nobody who could have handled the crisis as well as he did."

Mr. Bernanke's given names, Ben Shalom, mean "son of Peace" in Hebrew. Acquaintances say his name is apropos.

"He has been extraordinarily calm throughout — at least he's projected that on the surface," says the Fed's vice chairman, Donald L. Kohn, a close ally.

While Mr. Bernanke and Mr. Greenspan share certain views — that a global "savings glut" helped drive down long-term interest rates; that monetary policy is a poor tool for identifying, much less pricking, asset bubbles; and that the Fed's interest-rate policies didn't cause the crisis — the men differ in crucial ways.

While Mr. Greenspan tightly controlled Fed meetings, Mr. Bernanke is more collaborative. Unlike Mr. Greenspan, he avoids Washington's cocktail circuit. Mr. Greenspan would weigh in regularly with policy recommendations; Mr. Bernanke warns that the United States is on a fiscally unsustainable path but hasn't suggested specific tax increases or spending cuts.

Recently, he has seemed to be regaining his confidence and bearing. John H. Makin, an economist who shares with Mr. Bernanke an interest in Japan and deflation, says that "certainly in the last few months, he's looked a lot more self-possessed."

Mr. Bernanke reads avidly on his Kindle; Agatha Christie is a favorite. Recently, he read "The Immortal Life of Henrietta Lacks," by Rebecca Skloot, about the donor of a cell line used in research; the novel "Push" by Sapphire; and "The Help," by Kathryn Stockett, about maids in early-1960s Mississippi.

He is tempted to buy an iPad but isn't sure he can justify the cost. He likes to drive, but stays under the speed limit, friends say.

To relax, Mr. Bernanke shoots hoops in a squash court at the Fed. As a graduate student at M.I.T., he once skipped classes to cheer the Boston Red Sox against the Cincinnati Reds in the World Series, but he says his loyalties are now with the Washington Nationals.
“Bernanke is normal, which is fairly abnormal in that position,” says John Hope Bryant, a financial literacy advocate who credits Mr. Bernanke for speaking on that topic last June in Anacostia, a low-income neighborhood in southeast Washington.

And, colleagues say, he has grown wiser about how reality has a habit of intruding on well-formed academic theories about the economy.

“Maybe early on, there were some who believed Ben did not fully appreciate the rhythms of the markets,” says Kevin M. Warsh, a Fed governor who has been Mr. Bernanke’s liaison to Wall Street. “But he sure understands the flows of the markets now.”

This article has been revised to reflect the following correction:

Correction: May 23, 2010

An article last Sunday about the challenges facing Ben S. Bernanke, the Federal Reserve chairman, misidentified the university he attended when he went to a 1975 World Series game. He was a graduate student at M.I.T. that fall, not a senior at Harvard. A spokeswoman for the chairman also says now that because it was an evening game, he might not have skipped class to attend, as he said in a 2008 speech.

A version of this article appeared in print on May 16, 2010, on page BU1 of the New York edition.

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- Strengthen American democracy;
- Foster the economic and social welfare, security and opportunity of all Americans; and
- Secure a more open, safe, prosperous and cooperative international system.

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—The Global "Go-To Think Tanks", James G. McGann, Ph.D., January 2012
"When important debates occur in Washington—whether over Middle East peace, global finance, or urban strategy—it's a fair bet that Brookings is driving the conversation. ... From health care reform to recommendations on closing the prison at Guantanamo Bay, Brookings has a breadth of experience that allows it to offer innovative fixes for nearly every critical issue facing the United States today."
—Foreign Policy magazine's Think Tank Index, January 2009

Trust and Impact

"We need the intellectual heft of Brookings to solve our tough economic problems. We need your fresh ideas and new thinking."
—Senator Mark Warner, March 8 2013, Capitol Visitors Center, Brookings Board Meeting

"Brookings has achieved a special measure of respect in Washington because it has risen above partisanship, and that is not an easy thing to do in this town which is sort of built on partisanship."
—Hon. Michael Bloomberg, Mayor, City of New York, August 28, 2007

Among 16 organizations with high impact on public policy, a Harris Poll found Brookings is:

- among the five most powerful
- among the ten most trusted
- equally trusted by Democrats, Republicans and Independents.
—The Harris Poll's nationwide survey on inside-the-beltway groups, December 2007 (pdf)

"Brookings has been at the center of every important policy debate in this country for 90 years."
—Sen. Chuck Hagel, July 28, 2006
Rick Perry vs. Ben Bernanke
Texas Governor and GOP presidential candidate Rick Perry took on the Federal Reserve this past week. But to Ben Stein, Perry’s arguments don’t exactly add up.

On AUG 21, 2011 12:10 PM EDT   SUNDAY MORNING   Play VIDEO

Why can’t Ben Bernanke refinance his mortgage?
The former Fed chairman says his inability to refinance his mortgage is a sign of "excessive" lending standards

On OCT 3, 2014 3:05 PM EDT   By AIMEE PICCHI   MONEY

Interview with Fed Chairman Ben Bernanke
On "60 Minutes" this week, Scott Pelley interviewed Fed Chairman Ben Bernanke, discussing a wide range of economic issues. "60 Minutes Overtime" presents unaired excerpts from that interview.

On DEC 4, 2010 1:42 PM EST   60 MINUTES OVERTIME   Play VIDEO

Interview with Federal Reserve Chairman Ben Bernanke
On "60 Minutes" this week, Scott Pelley interviewed Fed Chairman Ben Bernanke, discussing a wide range of economic issues. Here’s the "60 Minutes Overtime" cut of the Bernanke interview.

On DEC 5, 2010 7:54 PM EST   By OVERTIME STAFF   60 MINUTES OVERTIME

Ben Bernanke and the Washington Consensus
Ben Bernanke gave a speech in Cleveland Wednesday on what we can learn from developing economies about economic growth. The speech revolves around three principles, macroeconomic stability, increased reliance on market forces, and strong political and economic institutions that "are important for...

On SEP 28, 2011 9:14 PM EDT   By MARK THOMA   MARKETS
Chapter 1: Ben Bernanke
Study Questions

Created by Student Interns, The Echo Foundation

1. As a teenager, what kind of jobs did Bernanke work? How do you imagine that this impacted his future views on the working class?

2. How did the location of Bernanke’s hometown affect his perspective on society?

3. What influences do you believe led Ben Bernanke to the Federal Reserve?

4. What personality traits do you believe converged in Ben Bernanke to inspire a small-town person to eventually change the world?

5. What role might Bernanke’s religious background have played in shaping his identity, values and work?

6. What shaped Ben Bernanke’s values?

7. What personality traits do you possess which shape your values?

8. Why was support so little for Bernanke’s reelection in 2010?

9. How did Ben Bernanke’s education in economics prepare him for the 2006-2010 financial crisis?

10. What leadership skills did Dr. Bernanke possess? How did they play out during the financial crisis?

11. What are some lessons that we can learn from Dr. Bernanke’s consistent dedication throughout his life?
Chapter II: What Is The Federal Reserve?

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"The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of 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." – The Federal Reserve Act of 1913
History and Formation

The Federal Reserve, also known as The Fed, is the central banking system of the United States. It is independent of the United States government, and is designed to ensure that politics do not control its actions. Congress created it in December of 1913 to provide a more stable, yet flexible financial system, achieved by using monetary policy to constantly pursue maximum employment and stable prices. The Federal Reserve Act was put in place by President Woodrow Wilson to accomplish these two goals. Prior to the creation of the Fed, the U.S. economy had been full of credit scarcity, and bank failures. Following the creation of the Federal Reserve Act, the Fed has generally maintained a more stable financial system.

The predecessor of the Federal Reserve Act was the National Banking Act, created in 1863, during the Civil War. This act provided government backing for the circulation of notes put forth by nationally chartered banks. An amendment to the act attempted to create a nationally uniform currency by establishing an additional tax on state bank notes. However, state banks continued to flourish due to popularity achieved during the Free Banking Era that last lasted from 1837-1862.

Despite the reforms made by Congress as part of the National Banking Act, a banking panic in 1893 occurred that led to the worst depression in U.S. history. Eventually, this depression was resolved by the intervention of J.P. Morgan, a powerful and influential banker. Another financial crisis arose near the beginning of the twentieth century. The Panic of 1907 was trigged by a plan to limit the popularity of trust companies. It was only resolved when the Federal Government provided $30 million in aid to help alleviate the situation.

The Aldrich-Vreeland Act of 1908 was then created to provide emergency issued currency during the crisis. Additionally, the National Monetary Commission was created to search for a long term fix for the nation’s economic instability. In December of 1912, President Woodrow Wilson signed the Federal Reserve Act, creating the Federal Reserve as we know it today.

In 1978, the Humphrey Hawkins Act was created to address growing inflation and rising unemployment. The Act created new temporary government jobs which eased
"Inflation is when you pay fifteen dollars for the ten-dollar haircut you used to get for five dollars when you had hair."

— Sam Ewing

unemployment, developed new monetary policies to curb inflation, and increase liquidity and private sector employment.
The Federal Reserve’s monetary policy has two primary objectives, to pursue stable prices and maximum employment. Stable prices are key to a nation’s economic growth and prevent the price of goods being distorted by inflation. Additionally, stable prices allow for maximum capital formation and savings, because when the risk of savings erosion is minimized, businesses are willing to invest more.

(Sources: Federal Reserve, Federal Reserve of San Francisco, Investopedia)

"Origins and Mission of the Federal Reserve"

"The Federal Reserve after World War II"
Responsibilities

From The Federal Reserve

The Federal Reserve has 4 primary responsibilities:

1. Conduct the nation’s monetary policy by influencing money and credit conditions in the economy in pursuit of full employment and stable prices

2. Supervise and regulate banks and other important financial institutions to ensure the safety and soundness of the nation’s banking and financial system and to protect the credit rights of consumers.

3. Maintain the stability of the financial system and containing systemic risk that may arise in financial markets.

4. Provide certain financial services to the U.S. government, U.S. financial institutions, and foreign official institutions, and playing a major role in operating and overseeing the nation's payment systems. These services include:
   - Provide electronic payment services in the form of both automated clearing house (ACH) and wire transfer (Fedwire)
   - Check collection.
   - Maintain cash and coin processing operations to ensure a healthy money supply.
   - Maintain accounts for U.S. Treasury
   - Process government checks, postal money orders and U.S. savings bonds.
   - Collect federal tax deposits.
   - Issue, service, and redeem saving bonds

Maximum employment is primarily affected by non-monetary factors that affect the dynamics of the current job market. As a result, the Federal Open Market Committee (FOMC) does not specify a fixed goal for maximum employment; rather, the FOMC’s policy decisions must be informed by its members’ assessments of the maximum level of employment, ultimately leading to a consensus on what policies the Fed must pursue with regards to employment.
(Source: Dollars and Sense.org) The trade-off between inflation and unemployment was first reported by A. W. Phillips in 1958—and so has been called the Phillips curve. The simple theory behind this trade-off is that as unemployment falls, workers are empowered to push for higher wages. Firms try to pass these higher wage costs on to consumers, resulting in higher prices and an inflationary buildup in the economy. The trade-off suggested by the Phillips curve implies that policy makers can target low inflation rates or low unemployment, but not both. During the 1960s, monetarists emphasized price stability (low inflation), while Keynesians more often emphasized job creation.

As shown in the graph above, throughout history, there has been an inverse correlation between inflation and unemployment rates. Usually, when inflation is high, unemployment is low.
Organization and Structure of the Fed

The Federal Reserve is comprised of two major components, a central authority in Washington D.C. known as the Board of Governors as well as a network of 12 Reserve Banks located throughout the country. Within the Board of Governors sits the Federal Open Market Committee, comprised of the 12 presidents from each Reserve Bank. The Federal Open Market Committee is responsible for setting monetary policy.

Board of Governors: The center of the Federal Reserve’s structure is the Board of Governors. This is an independent government agency comprised of a 7 member board and its staff. Board members are appointed by the President of the United States. Once confirmed by the Senate, members serve staggered fourteen year terms that expire every even numbered year. The reason for these abnormally long terms is to safeguard the system from being influenced by political pressure. The President also appoints a chairman and a vice chairman for the Board, who serve renewable four-year terms, subject to Senate approval.

Federal Reserve Banks: Most normal operations of the Fed are carried out by 12 Federal Reserve banks. These “district banks” walk a fine line between being both a public and private corporations. Although technically set up as non-governmental organizations, these banks operate like private corporations while still serving public interests. Private, commercial banks have representatives that form a board of directors for each Reserve bank. Yet another safeguard against political influence is present here as well, as each bank president is appointed by the board of directors, (comprised of privately funded representatives) and then approved by the Board of Governors.

Federal Open Market Committee (FOMC) within the Fed is responsible for establishing and maintaining the nation’s monetary policy. The seven members of the board of Governors, along with a constantly changing selection of five Reserve Bank presidents, make up the FOMC. The only permanent Reserve Bank president serving on the committee is that of the Reserve Bank of New York, who also serves as the vice chairman of the committee. All 12 presidents participate in meetings, whether they are current voting members or not.
**Member Bank** is part of the Federal Reserve System; or more generally, a bank that is part of a central clearing or central banking system. Such banks have to follow the rules and regulations put forward by the central bank or the clearing system.

The **Dodd-Frank Act**: Established in 2010, this Act possessed a number of revisions to the Fed’s structure. A second vice chairman was added to the Board of Governors, and directors representing commercial banks were excluded from the selection of presidents for the 12 reserve banks. New entities, such as a Consumer Financial Protection Bureau, and an Office of Minority and Women were created, as well.

(Source: Federal Reserve) **How they influence change**: The Fed promotes safety and stability throughout the nation’s banking system, stabilizes the financial markets, and ensures compliance with laws that fall under its jurisdiction. It accomplishes this through the use of its authority over the majority of banking institutions in the United States.

**Regulation**: The Fed is responsible for ensuring banking institutions under its authority comply with laws. The Board of Governors sets operational standards for banks through the use of regulations, rules, and policy guidelines. Legislation passed by Congress, such as the Dodd Frank Act, encourage certain regulations, whether permissive, or restrictive, to be implemented by the Fed.

**Supervising Stability of Financial System**: The Fed supervises banks, financial holding companies, state chartered banks; and international banking operations. Nationally chartered banks are bound by law to be members of the Federal Reserve banking system. They are supervised by the Office of the Comptroller of Currency. State Chartered banks that are not members of the system are monitored by the Federal Deposit Insurance Corporation.
The Fed’s actions affect the economy and therefore affect you. To ensure that the Fed remains accountable and free from political pressure, the Federal Reserve System is composed of public and private elements. The Board of Governors of the Federal Reserve System provides oversight to the 12 Reserve Banks and their branches. The Federal Open Market Committee (FOMC), the Fed’s monetary policymaking body, is made up of the members of the Board of Governors and presidents of the Reserve Banks. The Reserve Banks interact with more than 16,000 depository institutions that provide financial services to the public.

Board of Governors

The seven members of the Board are appointed by the president of the United States and confirmed by the U.S. Senate. The full term of a Board member is 14 years, and members who have served a full term may not be reappointed. The president also appoints the chairman and vice chairman of the Board from among the seven Board members. The chairman and vice chairman serve four-year terms and may be reappointed to these positions. The Board’s seven governors serve as members of the Federal Open Market Committee.

Three advisory councils – the Federal Advisory Council, the Consumer Advisory Council and the Thrift Institutions Advisory Council – inform the Board on matters of current interest. These councils, whose members are drawn from each of the 12 Federal Reserve Districts, meet three to four times a year.

The Federal Open Market Committee

The Federal Open Market Committee (FOMC) can affect overall economic activity through monetary policy. The FOMC sets monetary policy by establishing a target for the federal funds rate (the interest rate banks charge for overnight loans between banks). While all seven members of the Board of Governors and all 12 presidents of the Reserve Banks participate in each FOMC meeting, voting rights rotate among some participants. The seven members of the Board of Governors, the president of the New York Reserve Bank and the presidents of four other Reserve Banks, who serve one-year rotations, vote on monetary policy decisions.
Reserve Banks

The 12 Reserve Banks are named after the locations of their headquarters – Atlanta, Boston, Chicago, Cleveland, Dallas, Kansas City, Minneapolis, New York, Philadelphia, Richmond, San Francisco and St. Louis. Each Bank is assigned a number and a corresponding letter. As the map on pages 6 and 7 shows, the naming convention begins with the Boston Fed, 1A, in the Northeast and continues south and west across the country to the San Francisco Fed, 12L.

The Reserve Banks are quasi-governmental, or legally private but functionally public, corporations. Reserve Banks are “owned” by commercial banks in their region (that is, banks hold stock in their Federal Reserve Bank) but serve public goals and are overseen by the Board of Governors, a government entity. While these member banks are considered “owners” of the Fed, they do not have many of the usual rights of stockholders. For example, although 6 percent of their capital is invested in the Reserve Banks, their dividend return on this investment is fixed at 6 percent by law. The purpose of this quasigovernmental arrangement is to ensure a central bank that is both accountable to the American people and insulated from political pressure.

The Reserve Banks carry out a number of important functions. Bank presidents contribute to the monetary policy discussion and vote on the direction of monetary policy during FOMC meetings. While each president brings his or her own unique views on the national economy to these meetings, one of the specific roles of Reserve Banks is to reach out to local communities within each District to gather information about the regional economy.

One channel through which Reserve Banks interact with the public and the banking industry is the Reserve Bank’s own Board of Directors. Each Reserve Bank is governed by a Board that represents both member banks and the nonbank public. These nine directors oversee Bank operations and provide Fed officials with considerable "grassroots" information on business and financial conditions. While the member banks elect the Board of Directors, the Directors’ decisions are subject to review by the Board of Governors.

The entrepreneurs and leaders who sit on the Reserve Banks’ advisory committees also provide vital community-level input on the economy. These committees provide information on matters pertaining to small business, agriculture, labor, community development and payments. Members of advisory committees represent a diverse range of industries and interests in their Districts.
Reserve Banks also engage with the banking industry through supervisory activities and by providing payments services to depository institutions. The Reserve Banks support a number of community development and economic and financial education programs for the public. The Banks also work directly with the U.S. Treasury as its fiscal agent.

Member Banks

Approximately 34 percent of the commercial banks in the United States are members of the Federal Reserve System. Nationally chartered banks are required to be members of the Federal Reserve System and state chartered banks may choose to become members. Member banks are required to hold 6 percent of their capital as stock in their Reserve Bank.

Other Depository Institutions

In addition to member banks, about 13,700 other depository institutions provide checkable deposits and other banking services to the American people. These include state-chartered commercial banks, savings banks, savings and loan associations and credit unions. Although not formally part of the Federal Reserve System, these institutions have access to Fed financial services and are subject to System regulations.

American People

The American people play an integral role in the Federal Reserve System. Voters elect the leaders who appoint members to the Board of Governors. Local business people serve on advisory councils and committees. While the actions of the Federal Reserve System impact the public, Federal Reserve policymakers rely on information from a myriad of individuals to make policy decisions. These decisions impact the economy in which we live, work and make our own economic decisions.

http://richmondfed.org/publications/education/federal_reserve_today/federalreserve_today.pdf
The American People and The Federal Reserve System

Follow the arrows from any box in this graphic for the relationships between the American people and the Federal Reserve System.

- Presidents serve on
- Members serve on

**FEDERAL OPEN MARKET COMMITTEE**

- Takes actions that affect

**FEDERAL RESERVE BANKS**

- Serve on the Boards and advisory committees of

**THE AMERICAN PEOPLE**

- Are customers and shareholders of

**BOARD OF GOVERNORS**

- Serve on the advisory councils of
- Elect leaders who appoint members of

**MEMBER BANKS**

- Are represented on the advisory councils of
- Are represented on the Boards of Directors of
- Are represented on the advisory committees of
- Own and are subject to supervision by

Full Employment

Full employment occurs when available skilled and unskilled labor resources are being used to grow the economy. Remaining unemployment is called “frictional unemployment”, and used to describe workers who are in-between jobs and still counted in the labor force. Although full employment is attainable, it will often result in a period of rising inflation, as firms bid up the price of labor and thus a rapid influx of disposable income generated by a larger workforce.
Fiscal Policy and Monetary Policy

Fiscal policy is controlled and used as a tool by the government. Monetary policy is controlled by the Fed.

Watch YouTube video “Fed Is Responsible for Monetary Policy” by Richmond Fed. It is a concise 2 minute summary of the distinction between fiscal and monetary policy.

Fiscal Policy

Fiscal policy is created by the government to influence spending, borrowing, and taxation, in order to monitor and influence the nation's economy. In order to productively do this, the governmental powers are split across the executive and legislative branches. The separation of responsibilities between the two branches forms a system of checks and balances. In the executive branch, the president proposes the budget and signs or vetoes regulation concerning taxes. The Legislative branch is where congress passes the budget, and creates tax/spending regulation.

To measure the success of fiscal policy, Gross Domestic Product (GDP) is often used and is a measurement of the overall size of a nation's economy. GDP measures how efficiently the economy is functioning and indicates the value of all goods. A country's GDP represents the total income of the aggregated population or total spending, the sum of consumer spending, private investment and government spending. Theoretically, both numbers would be the same. A nation's GDP will often mirror the performance of its stock market. Lower GDP will often mean companies within the country have posted lower earnings that year, resulting in lower stock prices. GDP is also used as one of the primary indicators to determine the overall health of a particular nation's economy, and if that nation is in a recession for instance.

GDP Growth Since 1993
NAFTA enacted Jan. 1, 1994

The chart above indicates various countries' GDP over time (Source: Businessweek)
Monetary Policy

Monetary policy is the mechanism by which the Fed manages and controls the economy. One of the most effective ways to influence the economy is to control that economy’s money supply. Monetary Policy allows the Fed to directly influence the money supply by buying and selling securities, lending money to banks, and paying interest on bank reserves. These different actions also help to maintain price stability and sustainable employment while influencing interest rates in the desired direction. If the Fed does not regulate the growth in the money supply properly, it may grow too fast and cause inflation, or, if the money supply grows too slowly, it can cause a recession.

The Fed Funds Rate is one of the most impactful tools available to the Fed and explained in more detail below: The Fed does not want money supply to grow too rapidly, because then inflation will drastically increase. If the money supply gross too slowly, then the growth of the economy also slows down.

When determining monetary policy, including which tools to use, the Federal Reserve will look at various economic indicators, including GDP growth, inflation and unemployment.
An Excellent Resource for Educators, including lesson plans:

Exploring the Distinctions between Monetary and Fiscal Policy

ECONOMICS AND PERSONAL FINANCE RESOURCES FOR SECONDARY EDUCATORS

The Echo Foundation
Exploring the Distinctions between Monetary and Fiscal Policy

This issue of SE Educator highlights the distinctions between monetary and fiscal policy and includes an article excerpt, classroom activities and other resources to help you and your students explore this issue.

Source: Federal Reserve Bank of Richmond 2011 Annual Report (p 11)
www.richmondfed.org/publications/research/annual_report/2011/02/2011_ch1

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www.richmondfed.org/publications/education/se_educator
Unsustainable Fiscal Policy: Implications for Monetary Policy

The debt of the United States government that is held by the public reached its highest point since World War II in 2011, at 68 percent of gross domestic product (GDP). This number is high by historical comparison, but even more important than its current value is the path it is likely to follow in the future. Several factors point to continued large demands on fiscal resources, most notably the aging population. As baby boomers exit the labor force, the number of people drawing age-related benefits from the government will rise quickly as a fraction of working-age individuals supporting them through taxes and Social Security contributions. This unprecedented demographic shift will increase demands on Social Security, Medicare, and Medicaid.

The nonpartisan Congressional Budget Office (CBO) provides a debt forecast under two scenarios: a "baseline" scenario that holds current laws constant and an "alternative" scenario that incorporates the effects of laws the CBO deems likely to pass. The budget outlooks under both scenarios are displayed in Figure 1. The baseline scenario reflecting current laws presents the more optimistic view of the future path of fiscal policy. Revenues would exceed noninterest spending under this scenario, but the federal government would continue to run net deficits when factoring in interest payments on debt. Under this scenario, the CBO argues that deficits would be small enough relative to the size of the economy for debt held by the public to decline slowly over time. Debt held by the public would rise to 76 percent of GDP in 2014, declining gradually thereafter and falling below 50 percent of GDP by 2040, a level still greater than it was from 1957 through 2008 (Figure 2).

The alternative scenario—the one the CBO considers more likely because it reflects the policies that have prevailed in recent years—presents a more alarming picture of growth in federal debt. In this scenario, revenues do not rise much from where they are today, yet spending grows rapidly. Under these conditions, federal debt held by the public would rise sharply after 2011, exceeding its historical record of 109 percent of GDP by 2026. It would surpass 200 percent of GDP—nearly triple today's share of GDP—by the end of the 2030s, exceeding 250 percent of GDP after 2042.

The two scenarios represent optimistic and pessimistic alternatives from a range of possible outcomes, showing that the evolution of the federal government's fiscal position depends largely on policy decisions that have yet to be made. Given the demands on fiscal resources coming from the aging population under existing laws, achieving a path toward fiscal balance will involve very difficult tradeoffs for fiscal policymakers.

When is Fiscal Policy Unsustainable?

How do we know when high debt levels are a problem? Economists look to a simple framework known as the government's intertemporal budget constraint (IBC). A budget constraint is a basic accounting identity that says an entity must pay for everything that it purchases, while "intertemporal" simply means "over time." The government's IBC says that the value of its outstanding debt must equal the present value of its expected future surpluses (that is, what financial markets believe the surpluses will be, calculated in today's dollars). The main lesson to draw from the IBC is that the sustainability of government finances hinges crucially on financial markets.
expecting that the government can and will raise adequate future surpluses given its debt.

A budget that is widely out of balance—the expected path for debt is much larger than the likely path of future surpluses—is often described as "unsustainable." That characterization reflects the expectation that financial markets will force an adjustment in fiscal policy before such debt levels could be reached. For example, investors may demand a higher interest rate on government debt to compensate for the apparent risk that the government may not be able to repay its loans, causing a sudden and sharp increase in the government's financing costs that forces it to immediately produce a credible plan for reducing future deficits and therefore debt. Because financial market expectations are not constant, neither the IBC framework nor experience provide a quick answer to precisely what debt level is "sustainable." The budget apparently can remain modestly out of balance for a long time. For example, debt levels grew slowly and steadily from 1970 to 1997 with no obvious concern from financial markets about the sources of future surpluses. This is less likely to occur when the imbalance between outstanding debt and the capacity for producing future surpluses is very large, as in the CBO's alternative scenarios. With debt levels predicted to grow much larger than GDP within two decades, many years of higher taxes would be required to produce enough surpluses to resolve the resulting imbalance. There is some level of debt that is high enough—although we don't know how high that is—that generating the required amount of future surpluses required would be infeasible.

What we do know is that painful economic consequences can result from hitting that debt level. Economists have called that point the "fiscal limit," the point at which financial markets refuse to lend further to the government, and the government's existing spending promises therefore cannot be funded. At least one of two events must occur at the fiscal limit: the government reduces its debt levels by defaulting, or the central bank takes action to reduce real debt levels.

The primary way a central bank can reduce the government's real debt burden is by creating surprise inflation. Inflation allows all borrowers, the government included, to repay loans issued in nominal terms with cheaper dollars than the ones they borrowed. Roughly 90 percent of the federal government's debt is issued in nominal terms at prices that reflect the market's expectations for inflation over the life of the loan. A significant unanticipated jump in inflation therefore would produce a large transfer of wealth in the
government’s favor from its lenders. Historically, some central banks—though never the Federal Reserve—have produced inflation for the sole purpose of eroding the value of the government’s debt.

Since inflation today is low and stable, and the Fed remains committed to its price stability objectives and operates independently of fiscal policy, the Fed’s policies generally have little direct impact on the government’s debt burden. This could change, however, if financial markets began to view hitting the fiscal limit as a possibility. That situation would inevitably invite monetary policymakers to intervene since inflation presents one possible source of revenue.

**Sources of Fiscal Inflation**

Central banks often are called upon to intervene when the economy is facing severe challenges, as would likely be the case if a fiscal crisis arose in which markets forced the government to either default on its debt or enact some combination of severe spending cuts and tax increases. The first prospect, default, would wreak havoc on financial markets, and the second on economic activity. Thus, fiscal crisis almost certainly would jeopardize the Fed’s mandate, leaving the Fed with a difficult tradeoff: the economic pain associated with fiscal crisis or the longer-term costs of central bank intervention to reduce debt levels.

Even the most conservative central banker might feel compelled to intervene in hopes of limiting a panic before it could grow more severe. Knowing that the central bank faces these incentives, the market’s inflation expectations are liable to shift suddenly when debt levels are very large. Economist Eric Leeper at Indiana University argues that simply being near the fiscal limit is enough to enable an equilibrium in which markets expect the central bank to accommodate the debt with inflation in the future. The public’s expectation of higher inflation can push actual inflation higher before the central bank decides to create a single dollar.

The lesson from this literature is that when the public expects fiscal authorities to take action to satisfy the budget constraint while they still can, inflation need not rise. This is perhaps the situation the United States is in today: debt projections under the CBO’s more likely scenario exceed historical records for most developed countries, yet markets appear perfectly willing to purchase government debt at low interest rates, indicating that markets believe fiscal imbalances will be resolved through fiscal policy rather than through inflation. However, as long as there is uncertainty over the feasibility of generating sufficient future surpluses, policymakers cannot be sure that market expectations will not shift unexpectedly to produce inflation.

**Encouraging Sustainable Policy**

The Fed’s best contribution to avoiding a fiscal crisis is to maintain its commitment to monetary policy objectives. Credibility may help maintain the expectation that the central bank will not readily step in to erode the debt through inflation. However, credibility may not be sufficient. When the expected path for fiscal policy does not by itself achieve balance in the IBC over time, the price level is the only other factor that can adjust to provide it. Fiscal policy that does not contain the debt may lead to inflation even if the central bank has the best intentions.

Even if inflation were to spike, it might not be effective at reducing debt levels. Most government debt is priced in nominal terms, so while inflation erodes the value of existing nominal debt, it increases the financing costs for newly issued debt. This effect would be greater for governments, such as the United States, that have a short average maturity of government debt and therefore need to reissue it often.

For these and other reasons, the solution to current fiscal imbalances must ultimately come from fiscal authorities. Making these difficult decisions in a planned manner before a crisis arises almost certainly would entail fewer costs than if the decisions were forced by financial markets or by other events. These events include the so-called "fiscal cliff" that is scheduled to arise later this year as dramatic deficit reductions come into place under current law and as the result of automatic budget cuts built into the agreement to raise the federal debt ceiling in 2011 as a way to provide incentive to Congress to produce debt-reduction legislation.

For the time being, markets appear to believe that fiscal policymakers will put future debt, spending, and tax levels on a more sustainable path. If they are correct, our nation will not have to experience the significant economic challenges of a world in which those expectations have changed.

For full article and endnotes: www.richmondfed.org/publications/research/economic_brief/2012/eb_12-07.cfm
Beyond the Textbook

Consider using the following resources to further reinforce the differences between monetary and fiscal policy.

The Fed Chairman Game

As a follow up to this issue's content focus and the interactive student activities, consider taking your students to a computer lab to play the Fed Chairman Game courtesy of the Federal Reserve Bank of San Francisco.


Budget Hero

Have your students try an online budget simulation called Budget Hero published by Minnesota Public Radio.

http://minnesota.publicradio.org/projects/2008/05/budget_hero/
Educators, for more information and lesson plans, go to

Balancing Interest Rates

(Source: Investopedia.com) Interest rates also affect the economy. When the (Federal Funds Rate), which serves as the base rate for all other loans, is changed, it affects all loan rates across the nation. The higher the rate, the more expensive it is to borrow money. This can help to slow down an overly strong and healthy economy in order to reduce inflation and maintain consumer spending power. In order to keep inflation in check, the Fed uses increased interest rates when indicators such as Consumer Price Index (CPI) and Producer Price Index (PPI) began to rise at more than 2-3% a year. Once higher borrowing costs are established, spending will began to fall, resulting in a drop in inflation. When the economy is experiencing a recession, the Fed uses the opposite strategy of lowering interest rates. When borrowing money becomes cheaper, people are more likely to spend money again.

When the Fed changes the interest rate, both positive and negative effects subsequently ripple across the U.S. economy. The Fed accomplishes this in several ways. By using interest rates, the Fed can control consumer spending, inflation, and recessions. Interest rates, which are a form of compensation paid by a consumer to the loaner, limit the amount of money consumers are willing to borrow and spend at one time. Low interest rates give people more spending money, which creates a ripple effect across the entire economy. Alternatively, high interest rates reduce spending money, which can adversely affect large businesses, who have to then cut back on large purchases and the number of hired employees (See Federal Reserve Tools)
**Inflation** is the continuous increase in prices for goods and services and is generally an indicator of a growing economy. As inflation increases, every dollar buys fewer goods and services. In recent years, stable prices have become synonymous with low rates of inflation of around 2 percent per year.

**Deflation** - The opposite of inflation, occurs when prices fall. The recent recession that rocked the global economy started with a decline in the liquidity that took place in the US banking sector. Widespread unemployment, a decline in recruitment and a peak in firings by companies all over the world was witnessed during the period starting from December 2007 till June 2009. Repercussions and ripples of economic depression can still be seen and felt at present, though on a much smaller scale than when it started.

**Hyperinflation** (Source: USA Gold.com) - Extremely fast inflation that can lead to the collapse of the nation’s monetary policy. In Germany in 1923, the Reichsbank began unlimited printing of notes to try and compensate for the drop in gold value of money in circulation from £300 million to £20 million. In December of that year the exchange rate was 4,200,000,000,000 Marks to 1 US dollar.
Stagflation- High unemployment combined with a stagnant economy. This is the one exception to the inverse relation between inflation and unemployment rates.

The primary cause of inflation can be credited to a theory called “Demand-Pull Inflation”, this is generally when demand for goods increases faster than production. Although in some special instances inflation can be good, unexpected inflation can lead to several problems. Domestic products can become less competitive relative to other countries. Consumers living on a fixed income base will experience a massive reduction in spending power, and ultimately, economic output is hurt long term due to consumers less likely to spend because of uncertain financial conditions.

*In 1976, Carter won over McGovern (not Ford)
Why the Fed should worry about deflation

Fortune Magazine
by Nin-Hai Tseng
October 30, 2013

FORTUNE — As Federal Reserve policymakers wrap up their two-day meeting Wednesday, some have called on the central bank to do more to avoid threats of deflation.

Most don’t like having to paying higher prices, and the Fed has long tried to stabilize the U.S. economy by keeping the general costs of everything from shelter to clothes from rising too rapidly. But as the New York Times noted over the weekend, a little inflation could be good for the economy, and there’s growing concern inside and outside the Fed that inflation isn’t rising fast enough.

Many are wondering if the Fed should worry more about deflation rather than inflation. After all, when the central bank launched its large-scale bond-buying program to stimulate the economy, many expected inflation would climb. As it turns out, that hasn’t happened. Just take a look at the price of gold, typically a hedge against inflation. Prices have fallen by 19% so far this year.

If disinflation leads the U.S. into deflation, it would certainly hurt the economy: Real interest rates would rise, potentially discouraging investing and spending; the value of debts would go up; job growth would slow. “Once an economy slips into deflation, the risks of a self-reinforcing deflationary spiral rises,” according to a new paper by the American Enterprise Institute for Public Policy. The U.S. isn’t alone, however. Over the past two years, European and Chinese inflation rates have drifted steadily lower. And even though Japan has tried hard to end 15 years of deflation, the world’s third-largest economy has seen only modest relief.

In August, U.S. inflation rose just above its lowest pace at an annual pace to 1.2% — below the Fed’s target of 2% for keeping the economy growing in a healthy way. Deflation arises when the inflation rate falls into negative territory, so the U.S. is safe, at least for now. The question is for how long?

Such worries have further complicated one of the Fed’s main jobs to keep prices stable. Some say that while the inflation rate hasn’t risen as much as expected, the central bank could lose control of prices as the economy recovers. If and when that happens is another question confronting the Fed.
Perhaps, though, the Fed shouldn’t wait. John Makin, economist at the American Enterprise Institute, urges the Fed to take steps now and offers advice for Janet Yellen, President Obama’s nominee for the next Fed chair. He suggests extending program and urges the incoming chair to discuss the risks of deflation “at some length.”

More than that, Makin suggests an interesting way the Fed could guard against inflation and at the same time avoid deflation by lowering its inflation target. Currently, the central bank has a 2% target, and if inflation rises substantially above that it plans to tighten policy. Makin suggests lowering that target to 0.5% to 1.5%, signaling to investors that the Fed will not let the inflation rate fall below zero and cause the economy to spiral into deflation.

Of course, what the Fed might do next remains to be seen.
Money Supply and Federal Reserve Tools

The money supply, or the amount of money that is in circulation and available for spending, is measured by numerical groupings that divide the supply of money liquidity. These aggregates, in order from most fluid to least, range from M0-M2. M0 and M1, also called narrow money, normally include coins and notes in circulation and other money equivalents that are easily convertible into cash. M2 includes M1 plus short-term time deposits in banks and 24-hour money market funds. M3 includes M2 plus longer-term time deposits and money market funds with more than 24-hour maturity. Since it began to be monitored in the 1950’s, the money supply has steadily declined in its influence on Fed policy due to changes in banking accounts, the proliferation of financing companies, and more widespread investment among consumers (stock and bond investments are not captured in M1 and M2 aggregates). It is, however, still monitored and published weekly, and is used as an effective indicator for inflation and consumer spending.

A positive result when the money supply increases, is that there is a decrease in interest rates, which allows for an increase in investments due to more attractive investment opportunities for businesses, ultimately putting more money in the hands of consumers. This leads to an increase in business activity, a higher demand for labor, and healthier employment rates.

Dollar’s Reaction to being worth 95% less than in 1914
Federal Reserve Tools

1. *Feds Fund Rate (Source: Federal Reserve):*
   The fed funds rate is the average overnight interest rate at which institutions lend money to each other overnight. The Federal Reserve’s Open Market Committee (FOMC) determines the fed funds target rate. The Fed then uses Monetary Policy and other tools to influence the money supply and thus the overall Feds Fund Rate to reach the target rate. If the FOMC raises the fed funds target rate, than banks will, on average, charge a higher interest rate to each other. If banks charge a higher interest rate to each other, then in order to maintain their profit margins, they will have to raise the interest rate on loans they make to consumers and businesses. The higher this rate is, the more costly it is to borrow money. When that happens, consumers (or businesses) have less money to spend on other items because they are now paying more in interest expense, consequently slowing down economic growth overall.

**Year 1**

- Total household debt: $100,000
- Interest Rate: The bank charges you 5% interest rate
- The household is paying $5,000 of its spending money in interest expense

**Year 2**

- Total household debt: $100,000
- Interest Rate: The bank charges you 7% interest rate
- The household is paying $7,000 of its spending money in interest expense

In year two, the consumer is paying $7,000 a year in interest whereas previously the consumer was paying $5,000/year. As a result, the consumer has $2,000 less to spend on other purchases within the economy, which is why higher interest rates can slow growth overall.

This shows the Fed funds rate in the US over time (Source: Inman)
2. Federal Open Market Operations (Source: Federal Reserve)

The twelve members of the Federal Reserve’s Open Market Committee meet about eight times a year to discuss whether or not the Fed funds rate should be increased or decreased, based on the health of the economy and how much consumers are spending. The goal is to ensure steady and predictable growth. Any sudden fluctuations in growth or inflation can trigger economic downturns and potentially recessions. In order to increase the Fed Funds rate, securities are sold by the government.

*Open market operations*

When the government sells securities (usually bonds, notes and treasury bills) to the market, this is referred to as “open market operations”. Open market operations help implement monetary policy throughout the economy. The exchange of government securities in the market is what increases or decreased the money supply. When securities are sold by the government, they receive payment, thus reducing the money supply, and slowing growth which can sometimes be desirable. When securities are purchased by the government, additional money is injected into the economy, thus increasing the money supply. This increase in money being lent out within the economy can be used by individuals and businesses towards new investment and growth opportunities.

3. Reserve Requirements (Source: Investopedia.com)

Reserve requirements are the amount of money that the banks must have in reserve against the deposits made by the customers. It has to be set aside as a “reserve”, so it does not get used, or can be deposited at a Federal Reserve Bank. The Board of Governors controls the changes in reserve requirements. The amount that an institution must have depends on the reserve ratio, which depends on the amount of transaction accounts at the depository institutions. The amount is adjusted each year according to different acts that have been passed (The Garn-St Germain Act of 1982, Monetary Control Act of 1980).

4. Discount window lending (Source: Investopedia.com)

Discount window lending allows certain institutions to borrow money from the Federal Reserve. It is useful for when the intuitions are on temporary shortages caused by internal bank or external market disruptions, and the pressures of reserve requirements. The discount rate also allows the Fed to control the money supply, and helps stabilizes financial markets. By decreasing the discount rate, commercial banks can borrow more cheaply, which increases their incentive to borrow, which in turn can be used to lend to business and consumers, thus increasing the money supply. The opposite forces are at work when the Fed increases the discount rate (Source: Investopedia.com).

The discount rate is the rate that commercial banks and other depositors must pay on loans that they receive from their closest Federal Reserve Bank lending facility. There are three different programs:

1. Primary Credit loans used for a very short term to institutions in good financial condition
   a. This is the main discount window program
2. Secondary Credit– institutions that cannot meet short term goals and are in financial trouble
   a. The discount rate is above the rate of primary credit
3. Seasonal Credit– used for small institutions that are in need of funding
   a. The discount rate depends on the average of selected market rates

All of the different discount rates are made by the Board of Governors. These rates are the same for all Reserve Banks across the country.

5. Financial Crisis Special Tools
   “It’s Not Your Mother and Father’s Monetary Policy Anymore.”

This is an article published in the Social Education journal in 2011 about the policy tools used during the financial crisis. It has a great table on the second page which may be useful in describing what the Fed did during the Great Recession

Source: New World Economics
Supervision and Regulation

The Federal Reserve

The Federal Reserve has supervisory and regulatory authority over a wide range of financial institutions and activities. Through collaboration with other state and federal agencies, it ensures safety and stability of financial institutions, soundness of financial markets, and fair treatment of consumers. Due to its status as being the central bank of the United States, the Federal Reserve is able to coordinate its actions with other nations in periods of economic crisis, and supervise corporations with strong international presence.

The Division of Banking Supervision and Regulation is responsible for monitoring U.S. banking companies, foreign banking organizations operating in the U.S., and state-chartered member banks of the Federal Reserve System. It creates and enforces safety and soundness and other regulations for these entities under Board direction and in collaboration with Reserve Banks and other domestic and international regulatory authorities. In addition, it supports the conduct of monetary policy by monitoring current conditions and prospective developments affecting the banking industry and financial markets more generally.

The Federal Reserve is responsible for the regulation of certain banking segments to ensure safe and sound economic practices. These include:

- Bank holding companies, including foreign banks with U.S. operations
- State chartered banks that are members of the Federal Reserve System (state member banks)
- Foreign branches of member banks
- Edge and agreement corporations, through which U.S. banking organizations may conduct international banking activities
- U.S. state licensed branches, agencies, and representative offices of foreign banks
- Non-banking activities of foreign banks

Enforcement

(Source: Federal Reserve) In the event that the Federal Reserve finds that a state or member bank or holding company has issues that can negatively affect the institution's safety, or is not in compliance with laws and regulations, it maintains the right to take corrective action. Typically, such findings are communicated to the management and directors of a banking organization in a written report. The management is then required to identify and address all problems and insure that they will not recur. Most problems are resolved promptly after they are brought to the attention of an institution's management and directors. In certain situations, however, the Federal Reserve may need to take an informal supervisory action, requesting that an institution adopt a board resolution or agree to the provisions of a memorandum of understanding to address the problem.
Maintaining Stability in the Economy

Source: Richmond Federal Reserve

The Federal Reserve uses its tools to create a predicable market. As the Fed conducts monetary policy, and uses all of its tools, it helps maintain the stability of the economy. When the economy is stable, it would promote a low and non-fluctuating inflation rate, which then stops chaos within the market by keeping financial institutes healthy.

It is essential for the Fed to maintain a steady price stability, so that there can be long term economic growth and maximum employment. The Fed must stabilize the economy or else the costs of goods would rise too fast.

Avoiding Deflation

If the prices in the economy starting deflating, the economy would hurt because real interest rates would rise, which then limits investing and spending, and also job growth would slow down.

Moderate Money Supply

The Fed has to manage its money supply, because if it produces too much money, it can lead to inflation, thus hurting the economy.

Federal Reserve Act

The Federal Reserve Act was amended in 1977 to help the Fed achieve its goal. The Act promotes maximum employment, stable prices and moderate long-term interest rates. It establishes a form of economic stability and is very influencing the financial system (Source: Investopedia.com). By following this act, the Fed has a mandate to achieve its goals and be a lender to the banking system. In order to achieve its goals. The Fed must maintain low and stable inflation.

Systemic Risk

(Source: Federal Reserve) The Fed also has to deal with systemic risk, which is present because of the extensive relationships between financial institutions and, as current Fed Chairman, Janet Yellen, notes, the growing shadow banking sector. (Learn more by going to Janet Yellen on Systemic Risk and at Ben Bernanke on Systemic Risk ) The Fed wants to reduce systemic risk, so that the financial system can remain stable. The Fed is attempting to address systematic risk by:
1. Close supervision and oversight of financial institutions, risk taking, risk management, and financial conditions while [holding these institutions] to high capital and liquidity standards.

2. Ensuring a robust framework - both legally and in practice - for consolidated supervision of all system-wide, important financial firms.

3. [Developing] improved tools to allow for the orderly resolution of systemically important non-bank financial firm.

4. Increasing the resiliency of funds
Investopedia.com

**Federal Reserve System:** The central bank of the United States created by Congress and consisting of a seven member Board of Governors in Washington, D.C., 12 regional Reserve Banks, and depository institutions that are subject to reserve requirements.

**Federal Deposit Insurance Corporation (FDIC):** Agency of the federal government that insures accounts at most commercial banks and mutual savings banks. The FDIC also has primary federal supervisory authority over insured state banks that are not members of the Federal Reserve System.

**Financial Institution:** An institution that uses its funds chiefly to purchase financial assets (primarily loans and securities) as opposed to tangible property.

**Monetary Policy:** Federal Reserve actions to influence the availability and cost of money and credit, as a means of helping to promote high employment, economic growth, price stability, and a sustainable pattern of international transactions. Tools of monetary policy include open market operations, discount policy, and reserve requirements.

**Federal Open Market Committee (FOMC):** A 12 member committee consisting of the seven members of the Federal Reserve Board and five of the twelve Federal Reserve Bank presidents.

**Fiscal Policy:** Government policy regarding taxation and spending. Fiscal policy is made by Congress and the Administration.

**Inflation:** A rise, over time, in the average level of prices.

**Recession:** A significant decline in general economic activity extending over a period of time.
Further Reading / Resources

Links:

Federal Reserve Education:
https://www.federalreserveeducation.org/about-the-fed/structure-and-functions/monetary-policy

Federal Reserve:
http://www.federalreserve.gov/policy systems/fedfunds about.htm

Investopedia:
http://www.investopedia.com/university/releases/moneysupply.asp


http://www.investopedia.com/terms/c/consumerpriceindex.asp

http://www.investopedia.com/terms/p/ ppi.asp

http://www.investopedia.com/university/inflation/inflation1.asp

Federal Reserve of New York:
http://www.newyorkfed.org/markets/omo/dmm/fedfundsdata.cfm

Federal Reserve of Cleveland:

Federal Reserve of St. Louis:

Fortune Magazine:
http://fortune.com/2013/10/30/why-the-fed-should-worry-about-deflation/

Federal Reserve of Richmond:
https://www.richmondfed.org/research/our_perspective/pricestability/index.cfm

Federal Reserve of San Francisco:
http://www.frbsf.org/education/teacher-resources/what-is-the-fed/financial-stability
Books:

- *The Panic of 1907* by Robert Brunner and Sean Carr. Gives a full account of the events leading up to this crisis and the actions that followed to solve it. This panic was the one that finally spurred action on creating a central bank in the U.S.

- *A Monetary History of the United States* by Milton Friedman and Anna Schwartz. Published in 1963, this was really the first attempt to provide a solid history of monetary economics. It's a bit more technical and covers a long period of history, but the chapters on the Great Depression include a lot of narrative.

- *In Fed We Trust* by David Wessel. An account of the Fed’s actions during the Great Recession. The author was at the WSJ at the time and is now at Brookings.

- *Central Banking After the Great Recession* also by David Wessel includes an interview with Bernanke at the end of his term as Chair.

Lessons:

- [http://www.federalreservehistory.org](http://www.federalreservehistory.org) is a searchable gateway that contains more than 11,000 artifacts related to the Fed’s history. It includes some info on Bernanke.

- Federal Reserve Centennial Lessons: As part of the Centennial, three new classroom-ready lessons have been developed to help high school students understand Fed history, Fed functions and how the roles of the Fed have evolved over time. All of the lessons are tied to the Common Core and national content standards in social studies and economics. Two of the lessons are also accompanied by PowerPoint slides.
  - Lesson 1 - Defining Moments in Federal Reserve System History: 1907-1935
  - Lesson 3 - The Modern Federal Reserve System: Changes and Trends in Federal Reserve Functions | PowerPoint Slides

*Note: you will have to go onto the Federal Reserve website to find these lessons.*
Chapter II: What is the Federal Reserve?
Study Questions

Created by Student Interns, The Echo Foundation

1. What is the mission of the Federal Reserve?

2. Explain how monetary policy is used to achieve economic stability.

3. What is the role of interest rates? Explain how the Fed uses interest rates to encourage an appropriate increase or decrease in the amount of spending money in the economy.

4. What economic conditions in the late 19th and early 20th century led to the creation of the Fed in 1913?

5. Why was the Fed designed to operate independently from Congress?

6. Compare and contrast the different types of inflation. Is a certain kind of inflation more detrimental to a nation’s economy than another? Explain.

7. Explain the correlation between inflation and employment.

8. How is the Chairman of the Federal Reserve/Board of Governors appointed?

9. Define “Full Employment”

10. Compare Fiscal and Monetary Policy.

11. Explain the theory of “Demand-Pull Inflation”

12. Describe a positive result of an increase in the money supply.

13. Define “Open Market Operations” and how they help implement monetary policy into the economy.

14. Describe the numerical groupings that are used to measure the supply of money that is in circulation and available for spending.

15. Describe the organizational structure of the Fed.

16. How do the personal ethics and talents of the governors influence the Federal Reserve?
Chapter Introduction

The 2007-2008 Financial Crisis was an economic recession in the United States that put Dr. Ben Bernanke, as Chairman of the Federal Reserve, in a leadership and decision-making role like no other. Several economic factors were at work – the bursting of a housing bubble, bank and investment firm failures, rise of unemployment and significant stock market declines. The causes of the crash are still debated among top economists. The following is a presentation of certain perspectives in general terms as to what caused the crash and the reforms that came after.

The possible causes of the crash can be broken down into four different categories: trends in markets and human behavior, government policies, corporate governance practices and consumer behavior.

Beginning in 1995, the US Government created an initiative to make housing more accessible (the Community Reinvestment Act or the CRA), especially in low-income neighborhoods. It has been suggested that this resulted in a lowering of credit standards which allowed banks to issue mortgages that could not be paid back (subprime mortgages).

Though there was a loosening of government regulation on credit standards, nobody expected the mortgages to be a problem because housing prices almost always had an upward trend. Housing prices exhibit a rising trend over the past 100 years – that means if home owners lost their jobs or couldn’t pay their mortgage, they could simply sell the home for an amount greater than what they originally paid. As a result, banks started making more loans, and investors were more willing to invest in real estate products. In hindsight it is evident that major loan institutions granted loans to buyers than could not pay them back. Many of these loans were backed by government funded Fannie Mae and Freddie Mac. Home owners began defaulting on their mortgages, financial institutions began to fail, housing prices plummeted, and the economy retreated into a recession.

It’s also important to note that the 1999 repeal of the Glass-Steagall Act eliminated the separation between depository banks and investment banks. This change is said to have increased the banks’ ability to take risks with deposit funds. Complicated mortgage-related securities were used as investment tools and the crash exposed the financial industry to major losses. Both Bear Stearns and Lehman brothers were large firms that did not survive the crisis.

In response, the U.S. President, Federal Reserve, Treasury, Congress, Wall Street, etc were all called to action and worked diligently to rescue the distressed economy. They enacted TARP (Troubled Asset Relief Program) which allowed the Treasury to purchase troubled assets and security backed mortgages from banks and funded many critical industries. These were
controversial decisions because many supported less government intervention to let the market forces play out (ie let banks fail).

Following the economic crash, the Federal Reserve and U.S. government instituted a trend of increased regulations on financial institutions and credit requirements. The government and Fed took major steps to stabilize the economy through programs like TARP and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. A Consumer Financial Protection Bureau was established to help consumers get information they need to understand the terms of their agreements with financial companies.

We hope you enjoy learning about the role Ben Bernanke played during the years pre- and post-Great Recession 2007-08. Since 2010, most major economic indicators have been positive. U.S. unemployment has decreased while inflation has stayed steady; GDP per capita and US stock markets have steadily increased. U.S. and global economies were able to avoid a major economic depression.
Understanding the Fundamentals of Financial Markets

Created by Student Interns, The EchoFoundation

There is abundant discussion concerning the causes, impact and solutions for the financial crisis that commenced in the United States around late 2007 and early 2008. The impact eventually spread throughout the globe. In order to fully understand the multitude of issues surrounding the crisis one must understand basic accounting concepts and how the financial world works. We have compiled a small sampling of information to assist in this endeavor. A useful source is the Khan Academy which has as its mission to provide free education world class education for anyone, anywhere.

Links to Khan Academy Series on 2008 Financial Crisis:

**Video Ctrl+Click:** Liquidity vs. solvency - Khan Academy
Explanes a personal balance sheet including the concepts of assets, liabilities. Equity, solvency, liquidity, insolvency and illiquidity solvency.

**Video Ctrl+Click:** Book value | 2008 Bank bailout | Khan Academy

**Video Ctrl+Click:** Book value vs. market value - Khan Academy
Explains difference between book value and market value, market cap and secondary market.
Possible Causes of the Crisis

If you ask macroeconomists what caused the crisis, you will get different answers. Some will argue it was lack of regulation of the financial sector, others will cite the buildup up of household debt driven by stagnating middle class incomes. Still others will argue the Fed was at fault for holding interest rates too low for too long and fueling the housing bubble. You will also hear that it was a case of financial innovation gone awry – it failed to deliver on a promise of reduced and dispersed risk for mortgage based financial products.

By Mark Thoma, The Fiscal Times, Aug 2014

The Echo Student Interns have provided you with several “Perspectives/Opinion” Articles for your review in this chapter.

1. Trends in Markets and Human Behavior

Demand for Housing
Creates a “Bubble” of high prices

From Investopedia.com

A run-up in housing prices fueled by demand, speculation and the belief that recent history is an infallible forecast of the future. Housing bubbles usually start with an increase in demand (a shift to the right in the demand curve), in the face of limited supply which takes a relatively long period of time to replenish and increase. Speculators enter the market, believing that profits can be made through short-term buying and selling. This further drives demand. At some point, demand decreases (a shift to the left in the demand curve), or stagnates at the same time supply increases, resulting in a sharp drop in prices - and the bubble bursts.

Figure 1.1
Traditionally, housing markets are not as prone to bubbles as other financial markets due to large transaction and carrying costs associated with owning a house. However, a combination of very low interest rates and a loosening of credit underwriting standards can bring borrowers into the market, fueling demand. A rise in interest rates and a tightening of credit standards can lessen demand, causing a housing bubble to burst. Other general economic and demographic trends can also fuel and burst a housing bubble.

**Interactive Resource:** Housing Prices
This resource provides graphical depiction of housing market changes. Lightner, Renee; Van Dam, Andrew and Timiraos, “U.S. Housing Market Tracker,” originally published October 24, 2014 and updated.

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"The housing bubble was an archetypal bubble. Like others before it, this bubble began innocently enough, as an increase in demand for real estate. An increase in market demand tends to increase prices, and the housing market proved no exception. Unfortunately, the increase in home prices fed a speculative frenzy, and millions rushed to buy, believing that prices could only go in one direction—up! The buyers included not only would-be homeowners, but also speculators who were buying simply with an interest in “flipping” the property (reselling at a higher price)."

Excerpt from Macroeconomics in Context
By Neva Goodwin, Julie Nelson, Jonathan Harris, Mariano Torras, Brian Roac

After 2000, housing prices began rapid appreciation; in 2000, the average home value was $207,000 while in 2007, the average home value rose to $313,600. The housing market had almost always had an upward trend; analysts never would have predicted a 25% drop in housing prices.
PERSPECTIVE

Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism
George A. Akerlof and Robert J. Shiller

Source: Princeton University Press

Summary Univ of Delaware Link:
Summary of "Animal Spirits" - Akerlof and Shiller

The global financial crisis has made it painfully clear that powerful, psychological forces are imperiling the wealth of nations today. From blind faith in ever-rising housing prices to plummeting confidence in capital markets, "animal spirits" are driving financial events worldwide. In this book, acclaimed economists George Akerlof and Robert Shiller challenge the economic wisdom that got us into this mess, and put forward a bold new vision that will transform economics and restore prosperity.

Akerlof and Shiller reassert the necessity of an active government role in economic policymaking by recovering the idea of animal spirits, a term John Maynard Keynes used to describe the gloom and despondence that led to the Great Depression and the changing psychology that accompanied recovery. Like Keynes, Akerlof and Shiller know that managing these animal spirits requires the steady hand of government—simply allowing markets to work won't do it.

Case–Shiller index – a U.S. housing index that shows significant spike and subsequent decline during the period of 2000 to 2012.
Kahn Academy internet website presents educational videos titled "Mortgages, credit and why the bubble popped." These 5-10 minute videos talk about:

- Trends in housing prices
- How lower lending standards led to housing price inflation
- Why did lending standards become more and more lax from 2000 to 2006?
- The circle of housing appreciation and low default rates before crisis

**Video Ctrl+Click:** Housing price conundrum - Khan Academy  
*Explains how credit practices contributed to the crisis.*

**Video Ctrl+Click:** Housing price conundrum (part 2) - Khan Academy  
*Explains how lower lending standards led to housing price inflation.*

**Video Ctrl+Click:** Housing price conundrum (part 3) - Khan Academy  
*Discusses why lending standards were relaxed from 2000 to 2006*

**Video Ctrl+Click:** Housing conundrum (part 4) - Khan Academy  
*Explains the role in home value appreciation to lending practices and impact of decline in housing values.*
2. **Government Policy & Economic Influences**

United States Federal Laws, the Federal Reserve’s monetary policy and other US Government activity have been discussed as possible causes of the financial crisis.

**PERSPECTIVE**

**How Government Created the Financial Crisis**

By John Taylor  
The Wall Street Journal  
February 9, 2009

Many are calling for a 9/11-type commission to investigate the financial crisis. Any such investigation should not rule out government itself as a major culprit. My research shows that government actions and interventions -- not any inherent failure or instability of the private economy -- caused, prolonged and dramatically worsened the crisis.

The classic explanation of financial crises is that they are caused by excesses -- frequently monetary excesses -- which lead to a boom and an inevitable bust. This crisis was no different: A housing boom followed by a bust led to defaults, the implosion of mortgages and mortgage-related securities at financial institutions, and resulting financial turmoil.

Monetary excesses were the main cause of the boom. The Fed held its target interest rate, especially in 2003-2005, well below known monetary guidelines that say what good policy should be based on historical experience. Keeping interest rates on the track that worked well in the past two decades, rather than keeping rates so low, would have prevented the boom and the bust. Researchers at the Organization for Economic Cooperation and Development have provided corroborating evidence from other countries: The greater the degree of monetary excess in a country, the larger was the housing boom.

The effects of the boom and bust were amplified by several complicating factors including the use of subprime and adjustable-rate mortgages, which led to excessive risk taking. There is also evidence the excessive risk taking was encouraged by the excessively low interest rates. Delinquency rates and foreclosure rates are inversely related to housing price inflation. These rates declined rapidly during the years housing prices rose rapidly, likely throwing mortgage underwriting programs off track and misleading many people.

Adjustable-rate, subprime and other mortgages were packed into mortgage-backed securities of great complexity. Rating agencies underestimated the risk of these securities, either because of a
lack of competition, poor accountability, or most likely the inherent difficulty in assessing risk due to the complexity.

Other government actions were at play: The government-sponsored enterprises Fannie Mae and Freddie Mac were encouraged to expand and buy mortgage-backed securities, including those formed with the risky subprime mortgages.

Government action also helped prolong the crisis. Consider that the financial crisis became acute on Aug. 9 and 10, 2007, when money-market interest rates rose dramatically. Interest rate spreads, such as the difference between three-month and overnight interbank loans, jumped to unprecedented levels.

Diagnosing the reason for this sudden increase was essential for determining what type of policy response was appropriate. If liquidity was the problem, then providing more liquidity by making borrowing easier at the Federal Reserve discount window, or opening new windows or facilities, would be appropriate. But if counterparty risk was behind the sudden rise in money-market interest rates, then a direct focus on the quality and transparency of the bank's balance sheets would be appropriate.

Early on, policy makers misdiagnosed the crisis as one of liquidity, and prescribed the wrong treatment.

To provide more liquidity, the Fed created the Term Auction Facility (TAF) in December 2007. Its main aim was to reduce interest rate spreads in the money markets and increase the flow of credit. But the TAF did not seem to make much difference. If the reason for the spread was counterparty risk as distinct from liquidity, this is not surprising.

Another early policy response was the Economic Stimulus Act of 2008, passed in February. The major part of this package was to send cash totaling over $100 billion to individuals and families so they would have more to spend and thus jump-start consumption and the economy. But people spent little if anything of the temporary rebate (as predicted by Milton Friedman's permanent income theory, which holds that temporary as distinct from permanent increases in income do not lead to significant increases in consumption). Consumption was not jump-started.

A third policy response was the very sharp reduction in the target federal-funds rate to 2% in April 2008 from 5.25% in August 2007. This was sharper than monetary guidelines such as my own Taylor Rule would prescribe. The most noticeable effect of this rate cut was a sharp depreciation of the dollar and a large increase in oil prices. After the start of the crisis, oil prices doubled to over $140 in July 2008, before plummeting back down as expectations of world economic growth declined. But by then the damage of the high oil prices had been done.

After a year of such mistaken prescriptions, the crisis suddenly worsened in September and October 2008. We experienced a serious credit crunch, seriously weakening an economy already suffering from the lingering impact of the oil price hike and housing bust.

Many have argued that the reason for this bad turn was the government's decision not to prevent the bankruptcy of Lehman Brothers over the weekend of Sept. 13 and 14. A study of this event suggests that the answer is more complicated and lay elsewhere.
While interest rate spreads increased slightly on Monday, Sept. 15, they stayed in the range observed during the previous year, and remained in that range through the rest of the week. On Friday, Sept. 19, the Treasury announced a rescue package, though not its size or the details. Over the weekend the package was put together, and on Tuesday, Sept. 23, Fed Chairman Ben Bernanke and Treasury Secretary Henry Paulson testified before the Senate Banking Committee. They introduced the Troubled Asset Relief Program (TARP), saying that it would be $700 billion in size. A short draft of legislation was provided, with no mention of oversight and few restrictions on the use of the funds.

The two men were questioned intensely and the reaction was quite negative, judging by the large volume of critical mail received by many members of Congress. It was following this testimony that one really begins to see the crisis deepening and interest rate spreads widening.

The realization by the public that the government's intervention plan had not been fully thought through, and the official story that the economy was tanking, likely led to the panic seen in the next few weeks. And this was likely amplified by the ad hoc decisions to support some financial institutions and not others and unclear, seemingly fear-based explanations of programs to address the crisis. What was the rationale for intervening with Bear Stearns, then not with Lehman, and then again with AIG? What would guide the operations of the TARP?

It did not have to be this way. To prevent misguided actions in the future, it is urgent that we return to sound principles of monetary policy, basing government interventions on clearly stated diagnoses and predictable frameworks for government actions.

Massive responses with little explanation will probably make things worse. That is the lesson from this crisis so far.

Mr. Taylor, a professor of economics at Stanford and a senior fellow at the Hoover Institution, is the author of "Getting Off Track: How Government Actions and Interventions Caused, Prolonged and Worsened the Financial Crisis," published later this month by Hoover Press.
PERSPECTIVE
New Study Finds CRA 'Clearly' Did Lead to Risky Lending

By Paul Sperry
Investors.com
December 20, 2012

Democrats and the media insist the Community Reinvestment Act, the anti-redlining law beefed up by President Clinton, had nothing to do with the subprime mortgage crisis and recession.

But a new study by the respected National Bureau of Economic Research finds, "Yes, it did. We find that adherence to that act led to riskier lending by banks."

Added NBER: "There is a clear pattern of increased defaults for loans made by these banks in quarters around the (CRA) exam. Moreover, the effects are larger for loans made within CRA tracts," or predominantly low-income and minority areas.

To satisfy CRA examiners, "flexible" lending by large banks rose an average 5% and those loans defaulted about 15% more often, the 43-page study found.

The strongest link between CRA lending and defaults took place in the runup to the crisis — 2004 to 2006 — when banks rapidly sold CRA mortgages for securitization by Fannie Mae and Freddie Mac and Wall Street.

CRA regulations are at the core of Fannie's and Freddie's so-called affordable housing mission. In the early 1990s, a Democrat Congress gave HUD the authority to set and enforce (through fines) CRA-grade loan quotas at Fannie and Freddie.

It passed a law requiring the government-backed agencies to "assist insured depository institutions to meet their obligations under the (CRA)." The goal was to help banks meet lending quotas by buying their CRA loans.

But they had to loosen underwriting standards to do it. And that's what they did.

"We want your CRA loans because they help us meet our housing goals," Fannie Vice Chair Jamie Gorelick beseeched.
lenders gathered at a banking conference in 2000, just after HUD hiked the mortgage giant's affordable housing quotas to 50% and pressed it to buy more CRA-eligible loans to help meet those new targets. "We will buy them from your portfolios or package them into securities."

She described "CRA-friendly products" as mortgages with less than "3% down" and "flexible underwriting."

From 2001-2007, Fannie and Freddie bought roughly half of all CRA home loans, most carrying subprime features.

Lenders not subject to the CRA, such as subprime giant Countrywide Financial, still fell under its spell. Regulated by HUD, Countrywide and other lenders agreed to sign contracts with the government supporting such lending under threat of being brought under CRA rules.

"Countrywide can potentially help you meet your CRA goals by offering both whole loan and mortgage-backed securities that are eligible for CRA credit," the lender advertised to banks.
3. **Corporate Governance:**
Common corporate governance practices could be another cause of the global financial crisis. Possible stock option awards and corporate stock gains lead to excessive risk taking (which, in some cases, took the form of subprime mortgage lending),

- Bonuses increase as bank loans increase.

- "Subprime Lenders were (Primarily) Private: Only one of the top 25 subprime lenders in 2006 was directly subject to the housing laws overseen by either Fannie Mae, Freddie Mac or the Community Reinvestment Act."
### Subprime losses

The 15 largest subprime serving companies in 2008:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Servicer (parent)</th>
<th>2Q 2008 servicing volume, in billions</th>
<th>Percent Change from 2Q 2007</th>
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<tr>
<td>1</td>
<td>Countrywide Financial (Bank of America)</td>
<td>$98.86</td>
<td>-21.4%</td>
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<tr>
<td>2</td>
<td>HSBC Finance (HSBC)</td>
<td>80.48</td>
<td>-9.0%</td>
</tr>
<tr>
<td>3</td>
<td>Chase Home Finance (JPMorgan Chase)</td>
<td>67.20</td>
<td>-17.7%</td>
</tr>
<tr>
<td>4</td>
<td>Wells Fargo Home Mortgage (Wells Fargo)</td>
<td>49.35</td>
<td>-5.4%</td>
</tr>
<tr>
<td>5</td>
<td>American Home Mortgage (WL Ross &amp; Co.)</td>
<td>49.00</td>
<td>-24.9%</td>
</tr>
<tr>
<td>6</td>
<td>Ocwen Financial Corp.</td>
<td>44.83</td>
<td>-15.6%</td>
</tr>
<tr>
<td>7</td>
<td>Litton (Goldman Sachs)</td>
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<td>-5.0%</td>
</tr>
<tr>
<td>8</td>
<td>Home Loan Services (Bank of America)</td>
<td>44.00</td>
<td>-19.1%</td>
</tr>
<tr>
<td>9</td>
<td>HomEq Mortgage Servicing (Barclays)</td>
<td>39.63</td>
<td>-21.0%</td>
</tr>
<tr>
<td>10</td>
<td>Washington Mutual (JPMorgan Chase)</td>
<td>38.03</td>
<td>-30.7%</td>
</tr>
<tr>
<td>11</td>
<td>Residential Capital LLC (GMAC)</td>
<td>31.13</td>
<td>-35.2%</td>
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<td>12</td>
<td>Saxon Mortgage (Morgan Staney)</td>
<td>30.00</td>
<td>-21.3%</td>
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<tr>
<td>13</td>
<td>Citi (Citigroup)</td>
<td>22.94</td>
<td>-46.8%</td>
</tr>
<tr>
<td>14</td>
<td>American General Finance (AIG)</td>
<td>19.45</td>
<td>5.3%</td>
</tr>
<tr>
<td>15</td>
<td>EMC Mortgage (Bear Stearns/JPMorgan Chase)</td>
<td>19.43</td>
<td>-20.5%</td>
</tr>
</tbody>
</table>

Source: Inside Mortgage Finance
PERSPECTIVE

Anatomy of a Meltdown

*Ben Bernanke and the financial crisis.*

By John Cassidy

The New Yorker

December 1, 2008

Bernanke says that he was “mistaken early on in saying that the subprime crisis would be contained.” Photograph by Platon.

Some are born radical. Some are made radical. And some have radicalism thrust upon them. That is the way with Ben Bernanke, as he struggles to rescue the American financial system from collapse. Early every morning, weekends included, Bernanke arrives at the headquarters of the Federal Reserve, an austere white marble pile on Constitution Avenue in Foggy Bottom. The Fed, which is as hushed inside as a mausoleum, is a place of establishment reserve. Its echoing hallways are lined with sombre paintings. The office occupied by Bernanke, a soft-spoken fifty-four-year-old former professor, has high ceilings, several shelves of economics textbooks, and, on the desk, a black Bloomberg terminal. On a shelf in a nearby closet sits a scruffy gym bag, which in calmer days Bernanke took to the Fed gym, where he played pickup basketball with his staffers.

At Princeton, where Bernanke taught economics for many years, he was known for his retiring manner and his statistics-laden research on the Great Depression. For more than a year after he was appointed by President George W. Bush to chair the Fed, in February, 2006, he faithfully upheld the policies of his immediate predecessor, the charismatic free-market conservative Alan Greenspan, and he adhered to the central bank’s formal mandates: controlling inflation and maintaining employment. But since the market for subprime mortgages collapsed, in the summer of 2007, the growing financial crisis has forced Bernanke to intervene on Wall Street in ways never before contemplated by the Fed. He has slashed interest rates, established new lending programs, extended hundreds of billions of dollars to troubled financial firms, bought debt issued by industrial corporations such as General Electric, and even taken distressed mortgage assets onto the Fed’s books. (In March, to facilitate the takeover by J. P. Morgan of Bear Stearns, a Wall Street investment bank that was facing bankruptcy, the Fed acquired twenty-nine billion
dollars’ worth of Bear Stearns’s bad mortgage assets.) These moves hardly amount to a Marxist revolution, but, in the eyes of many economists, including supporters and opponents of the measures, they represent a watershed in American economic and political history. Ben Bernanke, who seemed to have been selected as much for his predictability as for his economic expertise, is now engaged in the boldest use of the Fed’s authority since its inception, in 1913.

Bernanke, working closely with Henry (Hank) Paulson, the Treasury Secretary, a voluble former investment banker, was determined to keep the financial sector operating long enough so that it could repair itself—a policy that he and his Fed colleagues referred to as the “finger-in-the-dike” strategy. As recently as Labor Day, he believed that the strategy was working. The credit markets remained open; the economy was still expanding, if slowly; oil prices were dropping; and there were tentative signs that house prices were stabilizing. “A lot can still go wrong, but at least I can see a path that will bring us out of this entire episode relatively intact,” he told a visitor to his office in August.

By mid-September, however, the outlook was much grimmer. On Monday, September 15th, Lehman Brothers, another Wall Street investment bank that had made bad bets on subprime mortgage securities, filed for bankruptcy protection, after Bernanke, Paulson, and the bank’s senior executives failed to find a way to save it or to sell it to a healthier firm. During the next forty-eight hours, the Dow Jones Industrial Average fell nearly four hundred points; Bank of America announced its purchase of Merrill Lynch; and American International Group, the country’s biggest insurance company, began talks with the New York Fed about a possible rescue. Goldman Sachs and Morgan Stanley, the two wealthiest investment banks on Wall Street, were also in trouble. Their stock prices tumbled as rumors circulated that they were having difficulty borrowing money. “Both Goldman and Morgan were having a run on the bank,” a senior Wall Street executive told me. “People started withdrawing their balances. Counterparties started insisting that they post more collateral.”

The Fed talked with Wall Street executives about creating a “lifeline” for Goldman Sachs and Morgan Stanley, which would have given the firms greater access to central-bank funds. But Bernanke decided that even more drastic action was needed. On Wednesday, September 17th, a day after the Fed agreed to inject eighty-five billion dollars of taxpayers’ money into A.I.G., Bernanke asked Paulson to accompany him to Capitol Hill and make the case for a congressional bailout of the entire banking industry. “We can’t keep doing this,” Bernanke told Paulson. “Both because we at the Fed don’t have the necessary resources and for reasons of democratic legitimacy, it’s important that the Congress come in and take control of the situation.”

Paulson agreed. A bailout ran counter to the Bush Administration’s free-market principles and to his own belief that reckless behavior should not be rewarded, but he had worked on Wall Street for thirty-two years, most recently as the C.E.O. of Goldman Sachs, and had never seen a financial crisis of this magnitude. He had come to respect Bernanke’s judgment, and he shared his conviction that, in an emergency, pragmatism trumps ideology. The next day, the men decided, they would go see President Bush.

On October 3rd, Congress passed an amended bailout bill, giving the Secretary of the Treasury broad authority to purchase from banks up to seven hundred billion dollars in mortgage assets,
but the turmoil on Wall Street continued. Between October 6th and October 10th, the Dow suffered its worst week in a hundred years, falling eighteen per cent. As the selling spread to overseas markets, the Fed’s failure to save Lehman Brothers was roundly condemned. Christine Lagarde, the French finance minister, described it as a “horrendous” error that threatened the global financial system. Richard Portes, an economist at the London Business School, wrote in the Financial Times, “The U.S. authorities’ decision to let Lehman Brothers fail will be severely criticised by financial historians—the next generation of Bernankes.” Even Alan Blinder, an old friend and former colleague of Bernanke’s in the economics department at Princeton, who served as vice-chairman of the Fed from 1994 to 1996, was critical. “Maybe there were arguments on either side before the decision,” he told me. “After the fact, it is extremely clear that everything fell apart on the day Lehman went under.”

The most serious charge against Bernanke and Paulson is that their response to the crisis has been ad hoc and contradictory: they rescued Bear Stearns but allowed Lehman Brothers to fail; for months, they dismissed the danger from the subprime crisis and then suddenly announced that it was grave enough to justify a huge bailout; they said they needed seven hundred billion dollars to buy up distressed mortgage securities and then, in October, used the money to purchase stock in banks instead. Summing up the widespread frustration with Bernanke, Dean Baker, the co-director of the Center for Economic and Policy Research, a liberal think tank in Washington, told me, “He was behind the curve at every stage of the story. He didn’t see the housing bubble until after it burst. Until as late as this summer, he downplayed all the risks involved. In terms of policy, he has not presented a clear view. On a number of occasions, he has pointed in one direction and then turned around and acted differently. I would be surprised if Obama wanted to reappoint him when his term ends”—in January, 2010.

Bernanke and Paulson’s reversals have been deeply unsettling, perhaps especially so for the millions of Americans who have lost jobs or defaulted on mortgages so far this year. And yet, for the past year and a half, the government has confronted a financial debacle of unprecedented size and complexity. “Everyone knew there were issues and potential problems,” John Mack, the chairman and chief executive of Morgan Stanley, told me. “Nobody knew the enormity of it, how global it was and how deep it was.” In responding to the crisis, Bernanke has effectively transformed the Fed into an Atlas for the financial sector, extending more than $1.5 trillion in loans to troubled banks and investment firms, and providing financial guarantees worth roughly another $1.5 trillion, making it global capitalism’s lender of first and last (and sometimes only) resort.

“Under Ben’s leadership, we have felt compelled to create a new playbook for the Fed,” Kevin Warsh, a Fed governor who has worked closely with Bernanke, told me. “The circumstances of the last year caused us to cross more lines than this institution has crossed in the previous seventy years.” Paul Krugman, the Times columnist, a former colleague of Bernanke’s at Princeton, and the winner of this year’s Nobel Prize in Economics, said, “I don’t think any other central banker in the world would have done as much by way of expanding credit, putting the Fed into unconventional assets, and so on. Now, you might say that it all hasn’t been enough. But I guess I think that’s more a reflection of the limits to the Fed’s power than of Bernanke getting it wrong. And things could have been much worse.”
Six and a half years ago, Bernanke was a little-known professor living in Montgomery Township, a hamlet near Princeton. Long hours, enormous stress, and constant criticism have left him looking pale and drawn. “Ben is a very decent and sincere person,” Richard Fisher, the president of the Dallas Fed, told me. “The question is, Is that an asset or a liability in his job? If he were six feet seven, like Paul Volcker”—a former Fed chairman—“that would be a big advantage. If he was a tough S.O.B., like Jerry Corrigan”—a former head of the New York Fed, who successfully managed a previous financial crisis, in 1987—“that would be a big advantage. But you make do with what you have—a prodigious brain, a tremendous knowledge of past financial crises, and a personality that is above reproach. And you surround yourself with good people and use their expertise.”

As Fed chairman, Bernanke inherited an unprecedented housing bubble and an unsustainable borrowing spree. The collapse of these phenomena occurred with astonishing speed and violence. The only precursor for the current financial crisis is the Great Depression, but even that isn’t a very good comparison. In the nineteen-thirties, the financial system was much less sophisticated and interconnected. In dealing with problems affecting arcane new financial products, including “collateralized debt obligations,” “credit default swaps,” and “tri-party repos,” Bernanke and his colleagues have had to become expert in market transactions of baffling intricacy.

Bernanke grew up in Dillon, South Carolina, an agricultural town just across the state line from North Carolina, where, in 1941, his paternal grandfather, Jonas Bernanke, a Jewish immigrant from Austria, founded the Jay Bee Drugstore, subsequently operated by Ben’s father and an uncle. The eldest of three siblings, Bernanke learned to read in kindergarten and skipped first grade. When he was eleven, he won the state spelling championship and went to Washington to compete in the National Spelling Bee. He made it to the second round, but stumbled on the word “edelweiss,” an Alpine flower featured in “The Sound of Music.” He hadn’t seen the movie, because Dillon didn’t have a movie theater. Had he spelled the word correctly and won the competition, Bernanke tells friends, he would have appeared on “The Ed Sullivan Show,” which was his dream.

In high school, Bernanke taught himself calculus, submitted eleven entries to a state poetry contest, and played alto saxophone in the marching band. During his junior year, he scored 1590 out of 1600 on his S.A.T.s—the highest score in South Carolina that year—and the state awarded him a trip to Europe. In the fall of 1971, he entered Harvard, where he wrote a prize-winning senior thesis on the economic effects of U.S. energy policy. After graduating, he enrolled at M.I.T., whose Ph.D. program in economics was rated the best in the country. His doctoral thesis was a dense mathematical treatise on the causes of economic fluctuations. He accepted a job at the Stanford Graduate School of Business, where Anna Friedmann, a Wellesley senior whom Bernanke married the weekend after she graduated, had been admitted into the master’s program in Spanish.

The couple lived in Northern California for six years, until Princeton awarded Bernanke, then just thirty-one, a tenured position. Settling in Montgomery Township, they brought up two children: Joel, who is now twenty-five and applying to medical school, and Alyssa, a twenty-two-year-old student at St. John’s College. By 2001, Bernanke was the editor of the American
Economic Review and the co-author, with Robert Frank, of “Principles of Economics,” a well-regarded college textbook. His scholarly interests ranged from abstruse matters such as the theoretical merits of setting a formal inflation target to historical questions, including the causes of the Great Depression. Even when Bernanke was writing about historical events, much of his scholarship was couched in impenetrable technical language. “I always thought that Ben would stay in academia,” Mark Gertler, an economist at New York University who has known Bernanke well since 1979, told me. “But two things happened.”

In 1996, Bernanke became chairman of the Princeton economics department, a job many professors regard as a dull administrative diversion from their real work. Bernanke, however, embraced the chairmanship, staying on for two three-year terms. Under his stewardship, the department launched new programs and hired leading scholars, among them Paul Krugman, whom Bernanke wooed personally. Bernanke also bridged a long-standing departmental divide between theorists and applied researchers, in part by raising enough money so that the two sides could coexist peaceably, and by engaging in diplomacy. “Ben is very good at respecting minority opinion and giving people the feeling they have been heard in the debate even if they get outvoted,” Alan Blinder said.

The other event that changed Bernanke’s career occurred in the summer of 1999, at the height of the Internet stock boom, when he and Gertler were invited to present a paper at an annual policy conference organized by the Federal Reserve Bank of Kansas City. The topic of the conference—which takes place at a resort in Jackson Hole, Wyoming—was New Challenges for Monetary Policy. Then, as now, there was vigorous debate among economists about whether central banks should raise interest rates to counter speculative bubbles. By increasing the cost of borrowing, the Fed, at least in theory, can restrain speculative activity and prevent the prices of assets such as stocks and real estate from rising excessively.

Bernanke and Gertler argued that the Fed should ignore bubbles and stick to its traditional policy of controlling inflation. If a bubble inflated and burst of its own accord, they said, the Fed could always bring down rates to alleviate damage to the broader economy. To support their case, they presented a series of computer simulations, which appeared to show that a policy of targeting inflation stabilized the economy more effectively than one that targeted bubbles. The presentation got a mixed reception. Henry Kaufman, a well-known Wall Street economist, said that it would be irresponsible for the Fed to ignore rampant speculation. Rudi Dornbusch, an M.I.T. professor (who has since died), pointed out that Bernanke and Gertler had overlooked the possibility that credit could dry up after a bubble burst, and that such a development could have serious effects on the economy. But Greenspan was more supportive. “He didn’t say anything during the session,” Gertler recalled. “But after it was over he walked by and said, as quietly as he could, ‘You know, I agree with you.’ That had us in seventh heaven.”

In December, 1996, Greenspan had warned that investors could fall victim to “irrational exuberance.” Subsequently, though, he had adopted a policy of benign neglect toward the stock market, ignoring warnings that a bubble in technology and Internet stocks had developed. The paper by Bernanke and Gertler provided theoretical support for Greenspan’s stance, and it received a good deal of publicity, something neither of its authors had previously experienced.
“Ben was a bit taken aback by the public attention,” Gertler said. “The Economist attacked us viciously.”

In 2002, when the Bush Administration was looking to fill two vacant governorships at the Fed—there are seven in all—Glenn Hubbard, who is the dean of Columbia Business School and who was then the chairman of the White House Council of Economic Advisers, proposed Bernanke. “We needed a strong economist who understood the financial markets, and Ben had expertise in that area,” Hubbard recalled. “He is also an extremely nice person. In terms of getting on with people, he is very affable, and I thought that would help him, too.”

Although the Fed is an independent agency, it is subject to congressional oversight, and Presidents typically appoint people who are sympathetic to their world view. Hubbard knew little about Bernanke’s politics. “I was aware he was an economic conservative, but I didn’t know whether he was a Republican,” Hubbard said. Robert Frank, a liberally inclined economist at Cornell and Bernanke’s co-author on “Principles of Economics,” believed that Bernanke was a Democrat. When the White House announced that it was nominating Bernanke to be a Fed governor, Frank was shocked. “I asked Ben, ‘Why is Bush appointing a Democrat?’” Frank told me. “He said, ‘Well, I’m not a Democrat.’” In writing their book, Frank was impressed not only by Bernanke’s openness to opposing views but also by his wry humor and his lack of ego. “In most situations, he is the smartest guy in the room, but he doesn’t seem too eager to show that,” Frank said.

When Bernanke joined the Fed, it was struggling to revive the economy after the Nasdaq collapse of 2000-01 and the terrorist attacks of September 11, 2001. Between September, 2001, and June, 2003, Greenspan and his colleagues cut the federal funds rate—the key interest rate under the Fed’s control—from 3.5 per cent to one per cent, its lowest level since the nineteen-fifties. Cutting interest rates during an economic downturn is standard policy at the Fed; lower borrowing costs encourage households and businesses to spend more. But Greenspan’s rate reductions were unusual in both their scale and their longevity. The Fed didn’t reverse course until the summer of 2004, and even then it moved slowly, raising the federal funds rate in quarter-point increments.

With cheap financing readily available, a housing boom developed. Families bought homes they couldn’t have afforded at higher interest rates; speculators bought properties to flip; people with modest incomes or poor credit took out mortgages designed for marginal buyers, such as subprime loans, interest-only loans, and “Alt-A” loans. On Wall Street, a huge market evolved in subprime mortgage bonds—securities backed by payment streams from dozens or hundreds of individual subprime mortgages. Banks and other mortgage lenders relaxed their credit standards, knowing that many of the loans they issued would be bundled into mortgage securities and sold to investors.

“The Fed’s easy-money policy put a lot of the wind at the back of some of the transactions in the housing market and elsewhere that we are now suffering from,” Glenn Hubbard told me. Before leaving government, in 2003, Hubbard argued in White House meetings that the Fed needed to start raising rates. “It was particularly striking for the Fed to maintain an accommodative policy
after the 2003 tax cut, which gave another boost to the economy,” Hubbard said. “That was a significant error.”

Greenspan dominated the Federal Open Market Committee (F.O.M.C.), which sets the federal funds rate, but Bernanke explained and defended the Fed’s actions to other economists and to the public. In October, 2002, a few months after joining the Fed, he gave a speech to the National Association for Business Economics, in which he said, “First, the Fed cannot reliably identify bubbles in asset prices. Second, even if it could identify bubbles, monetary policy is far too blunt a tool for effective use against them.” In other words, it is difficult to distinguish a rise in asset prices that is justified by a strong economy from one based merely on speculation, and raising rates in order to puncture a bubble can bring on a recession. Greenspan had made essentially this argument during the dot-com era and reiterated it during the real-estate boom. (As late as 2004, Greenspan said that a national housing bubble was unlikely.)

As house prices soared, many Americans took out home-equity loans to finance their spending. The personal savings rate dipped below zero, and the trade deficit, which the United States financed by borrowing heavily from abroad, expanded greatly. Some experts warned that the economy was on an unsustainable course; Bernanke disagreed. In a much discussed speech in March, 2005, he argued that the main source of imbalance in the global economy was not excess spending at home but, rather, excess saving in China and other developing countries, where consumption was artificially low. Lax American policy was helping to mop up a “global savings glut.”

“Bernanke provided the intellectual justification for the Fed’s hands-off approach to asset bubbles,” Stephen S. Roach, the chairman of Morgan Stanley Asia, who was among the economists urging the Fed to adjust its policy, told me. “He also played a key role in the development of the ‘global savings glut’ theory, which the Fed used as a very convenient excuse to say we are doing the world a big favor in maintaining demand. In retrospect, we didn’t have a global savings glut—we had an American consumption glut. In both of those cases, Bernanke was complicit in massive policy blunders on the part of the Fed.”

Another expert who dissented from the Greenspan-Bernanke line was William White, the former economics adviser at the Bank for International Settlements, a publicly funded organization based in Basel, Switzerland, which serves as a central bank for central banks. In 2003, White and a colleague, Claudio Borio, attended the annual conference in Jackson Hole, where they argued that policymakers needed to take greater account of asset prices and credit expansion in setting interest rates, and that if a bubble appeared to be developing they ought to “lean against the wind”—raise rates. The audience, which included Greenspan and Bernanke, responded coolly. “Ben Bernanke really believes that it is impossible to lean against the wind on the way up and that it is possible to clean up the mess afterwards,” White told me recently. “Both of these propositions are unproven.”

Between 2004 and 2007, White and his colleagues continued to warn about the global credit boom, but they were largely ignored in the United States. “In the field of economics, American academics have such a large reputation that they sweep all before them,” White said. “If you add
to that the personal reputation of the Maestro”—Greenspan—“it was very difficult for anybody else to come in and say there are problems building.”

After years of theorizing about the economy, Bernanke revelled in the opportunity to participate in policy decisions, though he rarely challenged Greenspan. “He wouldn’t have gotten into that club if he didn’t go along,” Douglas Cliggott, the chief investment officer at Dover Investment Management, a mutual-fund firm, told me. “Mr. Greenspan ran a tight ship, and he didn’t fancy people spouting off with their own views.” In January, 2005, Bernanke gave a speech at the annual meeting of the American Economic Association, in which he reflected on his transition from teaching: “The biggest downside of my current job is that I have to wear a suit to work. Wearing uncomfortable clothes on purpose is an example of what former Princeton hockey player and Nobel Prize winner Michael Spence taught economists to call ‘signalling.’ You have to do it to show that you take your official responsibilities seriously. My proposal that Fed governors should signal their commitment to public service by wearing Hawaiian shirts and Bermuda shorts has so far gone unheeded.”

A month later, Greg Mankiw, the chairman of the Council of Economic Advisers, announced that he was returning to Harvard, and recommended Bernanke as his replacement. Al Hubbard, an Indiana businessman who headed the National Economic Council, which advises the President on economic policy, wasn’t convinced that Bernanke was the right choice. “When you meet him, he comes over as incredibly quiet,” Hubbard told me. “I wanted to make sure he was somebody who wouldn’t be reluctant to engage in the economic arguments.” After talking with Bernanke, Hubbard changed his mind. “He’s actually very self-confident, and he’s not intimidated by anybody,” Hubbard said. “You could always count on him to speak up and give his opinion from an economic perspective.”

In June, 2005, Bernanke was sworn in at the Eisenhower Executive Office Building. One of his first tasks was to deliver a monthly economics briefing to the President and the Vice-President. After he and Hubbard sat down in the Oval Office, President Bush noticed that Bernanke was wearing light-tan socks under his dark suit. “Where did you get those socks, Ben?” he asked. “They don’t match.” Bernanke didn’t falter. “I bought them at the Gap—three pairs for seven dollars,” he replied. During the briefing, which lasted about forty-five minutes, the President mentioned the socks several times.

The following month, Hubbard’s deputy, Keith Hennessey, suggested that the entire economics team wear tan socks to the briefing. Hubbard agreed to call Vice-President Cheney and ask him to wear tan socks, too. “So, a little later, we all go into the Oval Office, and we all show up in tan socks,” Hubbard recalled. “The President looks at us and sees we are all wearing tan socks, and he says in a cool voice, ‘Oh, very, very funny.’ He turns to the Vice-President and says, ‘Mr. Vice-President, what do you think of these guys in their tan socks?’ Then the Vice-President shows him that he’s wearing them, too. The President broke up.”

As chairman of the Council of Economic Advisers, Bernanke was expected to act as a public spokesman on economic matters. In August, 2005, after briefing President Bush at his ranch in Crawford, Texas, he met with the White House press corps. “Did the housing bubble come up at your meeting?” a reporter asked. “And how concerned are you about it?”
Bernanke affirmed that it had and said, “I think it is important to point out that house prices are being supported in very large part by very strong fundamentals. . . . We have lots of jobs, employment, high incomes, very low mortgage rates, growing population, and shortages of land and housing in many areas. And those supply-and-demand factors are a big reason why house prices have risen as much as they have.”

By this time, the President’s ambitious plans to partly privatize Social Security had been stymied by congressional opposition, and his plans to simplify the tax system appeared likely to meet a similar fate. Nevertheless, the White House economics team was searching for market-friendly policy proposals, and Bernanke was happy to contribute. On the flight from Crawford to Washington, D.C., he and Hennessey discussed replacing tax subsidies to employer-based health-insurance plans with a fixed tax credit or deduction that families could use to buy their own coverage. In Washington, they continued to develop the idea, which proved popular with economic conservatives, though some experts have said it would lead to a dramatic drop in employer-provided health plans. “It’s what we proposed, and it’s what John McCain proposed,” Al Hubbard said. “If we can keep health care in the private sector, it is what eventually will happen. Ben and Keith are the guys who came up with it.”

From the moment Bernanke went to work for Bush, he was seen as a likely successor to Greenspan, who was due to retire in January, 2006. Shortly after Labor Day, 2005, at Bush’s request, Al Hubbard and Liza Wright, the White House personnel director, compiled a list of eight or ten candidates for the Fed chairmanship and interviewed several of them. The selection committee eventually settled on Bernanke. “An important part of the Fed job is bringing people along with you, on the F.O.M.C. and so on,” Hubbard told me. “He had the right personality to do that. Plus, Ben is a very powerful thinker. We were impressed with his theories of the world and the way he thinks. He believes in free markets.”

Some press reports have suggested that the public controversy over the abortive nomination to the Supreme Court of Harriet Miers, the White House counsel, helped Bernanke’s chances, because it put pressure on the Administration to appoint a nonpartisan figure to the Fed. “That was never even discussed,” Hubbard insisted to me. “We didn’t take account of Harriet Miers or anything else. There was no politics involved.” On October 24, 2005, President Bush nominated Bernanke as the fourteenth chairman of the Fed, saying, “He commands deep respect in the global financial community.” After thanking the President, Bernanke said that if the Senate confirmed him his first priority would be “to maintain continuity with the policies and policy strategies established during the Greenspan years.”

For more than a year, Bernanke kept his word. In the first half of 2006, the F.O.M.C. raised the federal funds rate in three quarter-point increments, to 5.25 per cent, and kept it there for the rest of the year. But cheap money was only part of Greenspan’s legacy. He had also championed financial deregulation, resisting calls for tighter government oversight of burgeoning financial products, such as over-the-counter derivatives, and applauded the growth of subprime mortgages. “Where once more marginal applicants would simply have been denied credit, lenders are now able to quite efficiently judge the risks posed by individual applicants and to price that risk appropriately,” Greenspan said in a 2005 speech.
Bernanke hadn’t said much about regulation before being nominated as the Fed chairman. Once in office, he generally adhered to Greenspan’s laissez-faire approach. In May, 2006, he rejected calls for direct regulation of hedge funds, saying that such a move would “stifle innovation.” The following month, in a speech on bank supervision, he expressed support for allowing banks, rather than government officials, to determine how much risk they could take on, using complicated mathematical models of their own devising—a policy that had been in place for a number of years. “The ongoing work on this framework has already led large, complex banking organizations to improve their systems for identifying, measuring, and managing their risks,” Bernanke said.

It is now evident that self-regulation failed. By extending mortgages to unqualified lenders and accumulating large inventories of subprime securities, banks and other financial institutions took on enormous risks, often without realizing it. Their mathematical models failed to alert them to potential perils. Regulators—including successive Fed chairmen—failed, too. “That was largely Greenspan, but Bernanke clearly shared an ideology of taking a hands-off approach,” Stephen Roach, of Morgan Stanley Asia, said. “In retrospect, it is unconscionable that the Fed didn’t really care about regulation, or didn’t show any interest in it.”

Bernanke was more concerned about inflation and unemployment, the Fed’s traditional areas of focus, than he was about the growth of mortgage securities. “The U.S. economy appears to be making a transition from the rapid rate of expansion experienced over the preceding years to a more sustainable, average pace of growth,” he told the Senate banking committee in February, 2007. By then, home prices in many parts of the country had begun to drop. At least two prominent economists—Nouriel Roubini, at N.Y.U., and Joseph Stiglitz, at Columbia—had warned that a nationwide housing slump could trigger a recession, but Bernanke and his colleagues thought this was unlikely. “You could think about Texas in the nineteen-eighties, when oil prices went down, or California in the nineteen-nineties, when the peace dividend hit the defense industry, but these were regional things,” one Fed policymaker told me. “A national decline in house prices hadn’t occurred since the nineteen-thirties.”

On February 28, 2007, Bernanke told the House budget committee that he didn’t consider the housing downturn “as being a broad financial concern or a major factor in assessing the state of the economy.” He maintained an upbeat tone over the next several months, during which two large subprime lenders, New Century Financial Corp. and American Home Mortgage, filed for bankruptcy, and the damage spread to Wall Street firms that had invested in subprime securities. On August 3rd, the day after American Home Mortgage announced that it was shutting down, the Dow fell almost three hundred points, and CNBC’s Jim Cramer, in a four-minute rant that is still playing on YouTube, accused the Fed of being “asleep.”

“Bernanke is being an academic,” Cramer bellowed. “He has no idea how bad it is out there! . . . My people have been in this game for twenty-five years, and they are losing their jobs, and these firms are going to go out of business, and he’s nuts! They’re nuts! They know nothing!”

Four days later, the F.O.M.C. met, but left the federal funds rate unchanged. In a statement, the committee acknowledged the housing “correction” but said that its “predominant policy concern
remains the risk that inflation will fail to moderate as expected.” Looking back on this period, Bernanke told me, “I and others were mistaken early on in saying that the subprime crisis would be contained. The causal relationship between the housing problem and the broad financial system was very complex and difficult to predict.” Relative to the fourteen trillion dollars in mortgage debt outstanding in the United States, the two-trillion-dollar subprime market seemed trivial. Moreover, internal Fed estimates of the total losses likely to be suffered on subprime mortgages were roughly equivalent to a single day’s movement in the stock market, hardly enough to spark a financial conflagration.

One of the supposed advantages of securitizing mortgages was that it allowed the risk of homeowners’ defaulting on their mortgages to be transferred from banks to investors. However, as the market for mortgage securities deteriorated, many banks ended up accumulating big inventories of these assets, some of which they parked in off-balance-sheet vehicles called conduits. “We knew that banks were creating conduits,” Don Kohn, the Fed’s vice-chairman, told me. “I don’t think we could have recognized the extent to which that could come back onto the banks’ balance sheets when confidence in the underlying securities—the subprime loans—began to erode.”

On August 9, 2007, the crisis escalated significantly after BNP Paribas, a major French bank, temporarily suspended withdrawals from three of its investment funds that had holdings of subprime securities, citing a “complete evaporation of liquidity in certain market segments of the U.S. securitization market.” In other words, trading in the mortgage securities market had ceased, leaving many financial institutions short of cash and saddled with assets that they couldn’t sell at any price. Stocks fell sharply on both sides of the Atlantic, and the following day Bernanke held a conference call with members of the F.O.M.C., during which they discussed reducing the interest rate at which the Fed lends to commercial banks—the “discount rate.” Since the Fed was founded, it has had a “discount window,” from which commercial banks may borrow as needed. In recent years, however, most banks had stopped using the window, because they could raise money more cheaply from investors and other banks.

The Fed decided to keep the discount rate at 6.25 per cent but issued a statement reminding banks that the discount window was open if they needed money. Seven days later, however, after more wild swings in the markets, the Fed voted to cut the discount rate by half a point, to 5.75 per cent. It declared that it was “prepared to act as needed to mitigate the adverse effects on the economy arising from the disruptions in financial markets.”

Bernanke now realized that the subprime crisis posed a grave threat to some of the country’s biggest financial institutions and that Greenspan-era policies were insufficient to contain it. In the third week of August, he made his second visit as head of the Fed to Jackson Hole, where he invited some of his senior colleagues to join him in a brainstorming session. “What’s going on and what do we need to do?” he asked. “What tools have we got and what tools do we need?”

The participants included Don Kohn; Kevin Warsh; Brian Madigan, the head of monetary affairs at the Fed; Tim Geithner, the head of the New York Fed; and Bill Dudley, who runs the markets desk at the New York Fed. The men agreed that the financial system was facing what is known as a “liquidity crisis.” Banks, fearful of lending money to financial institutions that might turn
out to be in trouble, were starting to hoard their capital. If this situation persisted, businesses and consumers might be unable to obtain the loans they needed in order to spend money and keep the economy afloat.

Bernanke and his colleagues settled on a two-part approach to the crisis. (Geithner later dubbed it “the Bernanke doctrine.”) First, to prevent the economy from stalling, the Fed would lower the federal funds rate modestly—by half a point in September and by a quarter point in October, to 4.5 per cent. This was standard Fed policy—trimming rates to head off an economic decline—but it didn’t directly address the crisis of confidence afflicting the financial system. If banks wouldn’t extend credit to one another, the Fed would have to act as a “lender of last resort”—a role it was authorized to perform under the 1913 Federal Reserve Act. However, borrowing from the Fed’s discount window, its main tool for supplying banks with cash, not only meant paying a hefty interest rate but also signaled to competitors that the lender was having difficulty raising money. Moreover, many of the banks that had bought subprime securities and needed to lend dollars weren’t in the United States.

Kohn proposed a potential solution. Before the turn of the millennium, he recalled, worries about widespread computer failures had prompted many financial institutions to hoard capital. The Fed, determined to keep money flowing in the event of a crisis, had developed several ideas, including auctioning Fed loans and setting up currency swaps with central banks abroad, to enable cash-strapped foreign banks to lend in dollars. Y2K had transpired without incident, and none of the ideas had been tested. Kohn suggested that the Fed revisit them now.

Versions of the Y2K proposals became the second part of the Bernanke doctrine—it’s most radical component. Over fifteen months, beginning in August, 2007, the Fed, through various novel programs known by their initials, such as T.A.F., T.S.L.F., and P.D.C.F., lent more than a trillion dollars to dozens of institutions. One program, T.A.F., allowed banks and investment firms to compete in auctions for fixed amounts of Fed funding, while T.S.L.F. enabled firms to swap bad mortgage securities for safe Treasury bonds. The programs, which have received little public attention, were supposed to be temporary, but they have been greatly expanded and remain in effect. “It’s a completely new set of liquidity tools that fit the new needs, given the turmoil in the financial markets,” Kevin Warsh, the Fed governor, said. “We have basically substituted our balance sheet for the balance sheet of financial institutions, large and small, troubled and healthy, for a time. Without these credit facilities, things would have been a lot worse. We’d have a lot more banks needing to be resolved, unwound, or rescued, and we would have run out of buyers before we ran out of sellers.”

Richard Fisher, the head of the Dallas Fed, told me that the lending programs would be Bernanke’s main legacy. He likened what the Fed has done to replacing a broken sprinkler system. “If the pipes are blocked up, the sprinkler heads don’t receive any water, and the lawn turns brown and dies,” he said. “In this case, the piping system had been broken and clogged. Just turning the faucet of the federal funds rate was insufficient to the challenges the Fed faced.”

Although many people at the Fed worked on the details of the lending programs, Bernanke provided the impetus for their development. One of his first acts on taking office was to establish a financial-stability working group, which brought together economists, finance specialists, bank supervisors, and lawyers from different departments at the Fed to devise solutions to potential
problems. As the subprime crisis unfolded, Bernanke met with the task force frequently to discuss the Fed’s response, including how, in seeking to expand the scope of its activities, it could exploit obscure laws from the nineteen-thirties. “Ben is very good at making decisions—none of this waiting for the definitive academic paper before acting,” said Geithner, who last week was reported to have been selected as Treasury Secretary by President-elect Barack Obama. “We’ve done some incredibly controversial, consequential things in a remarkably short period of time, and it’s because he was willing to act quickly, with force and creativity.”

Despite the rate cuts and lending programs, months passed without discernible improvements in the credit markets. During the summer and fall of 2007, the drop in house prices accelerated and the number of subprime delinquencies increased. In October, at a meeting in Washington of central bankers, executives, and economists, Allen Sinai, the chief economist at Decision Economics, Inc., asked Bernanke how he thought a central bank should manage the economic risks posed by a housing bubble. According to Sinai, Bernanke said that he had no way of knowing if there had been a housing bubble. “I realized then that he just didn’t realize the scale of the problem,” Sinai told me.

At F.O.M.C. meetings, some members compared the subprime debacle with the financial crisis of 1998, when the Fed organized a consortium of Wall Street firms to prevent the giant hedge fund Long Term Capital Management from collapsing. The markets had gyrated for a couple of months before recovering strongly, and the broader economy had been largely unaffected. “In September, it still looked good,” Frederic Mishkin, a Columbia professor and a close friend of Bernanke, who served as a Fed governor from September, 2006, until August of this year, told me. “I thought it was going to be worse than 1998, but not much worse. I thought it was going to be over in a few months.”

By the end of 2007, however, Bernanke was beginning to agree with some of the Fed’s critics that interest rates needed to come down quickly. On January 4, 2008, the Labor Department reported that the unemployment rate had jumped from 4.7 per cent to five per cent, prompting a number of economists to say that the United States was on the brink of a recession. More banks and investment banks, including Citigroup, UBS, and Morgan Stanley, were reporting big losses—a development that particularly concerned Bernanke because of its historical overtones.

In an article Bernanke published in 1983, he showed how the Fed’s failure in the early thirties to prevent banks from collapsing contributed to the depth and severity of the Great Depression—a finding that supported a theory first proposed in 1963 by the economists Milton Friedman and Anna Schwartz. In November, 2002, shortly after joining the Fed, Bernanke appeared at a conference to mark Friedman’s ninetieth birthday, and apologized for the Fed’s Depression-era policies. “I would like to say to Milton and Anna: regarding the Great Depression, you’re right; we did it,” he said. “We’re very sorry. But, thanks to you, we won’t do it again.”

On January 21, 2008, stock markets around the world fell sharply. The U.S. markets were closed for Martin Luther King Day, but at six o’clock that evening Bernanke convened a conference call of the F.O.M.C., which voted to cut the federal funds rate by three-quarters of a point, to 3.5 per cent. It was the first rate cut to occur between meetings since September, 2001, and the largest one-day reduction in the rate.
When the committee met on January 29th, it cut the federal funds rate by another half a point, to three per cent. In a month and a half, the Fed had shifted from a policy roughly balanced between fighting inflation and maintaining economic growth to one explicitly aimed at heading off a recession. To people inside the Fed, which is accustomed to moving at a stately pace, the change felt wrenching. “To move that far that fast was unprecedented,” Frederic Mishkin, the Columbia professor and former Fed governor, said. “In our context, it’s remarkable how fast we reacted.” Some economists who worry about inflation were outraged by the rate cuts. “They’re doing the same stupid things they did in the nineteen-seventies,” Allan Meltzer, an economist at Carnegie Mellon, who has written a history of the Fed, told the Times. “They were always saying then that we’re not going to let inflation get out of hand, that we’re going to tackle it once the economy starts growing, but they never did.”

Bernanke was frustrated by the attacks on his policies, especially when they came from academics whose work he respected. If he moved slowly, people on Wall Street accused him of timidity. If he brought rates down sharply, academic economists accused him of going soft on inflation.

As the financial crisis worsened, Bernanke worked more closely with Paulson, who, after becoming Treasury Secretary, in June, 2006, had established considerable autonomy in determining the Bush Administration’s economic policy. The men appeared to have little in common. Bernanke was scholarly and reserved; Paulson, an English major who played offensive tackle for Dartmouth in the seventies, where he was known as the Hammer, was gregarious. Both, however, were political moderates who liked baseball. On his desk, Paulson, a Cubs fan, kept a copy of Bill James’s “Historical Baseball Abstract,” given to him by Bernanke, a former Red Sox fan who, since moving to the capital, had adopted the Washington Nationals.

Paulson and Bernanke met for breakfast every week and saw each other often at meetings of the President’s Working Group on Financial Markets, which was led by Paulson and included senior officials from the Securities and Exchange Commission and the Commodity Futures Trading Commission. Paulson frequently solicited Bernanke’s advice. “I’ve been impressed with his pragmatism and how intellectually curious he is,” Paulson told me in September. “He’s willing to consider all ideas—conventional and non-conventional—and he doesn’t easily accept things that the bureaucracy comes up with.”

In early March, 2008, stock in Bear Stearns, the investment bank and a major underwriter of subprime securities, fell steeply amid rumors that the firm was having trouble raising money in the overnight markets, on which, like all Wall Street firms, it depended to finance its huge trading positions. Many of the bank’s clients began to withdraw their money, and many of its creditors demanded more collateral for their loans. In accommodating these requests, Bear was forced to draw on its cash reserves. By the afternoon of Thursday, March 13th, it reportedly had just two billion dollars left, not nearly enough to meet its obligations on Friday morning.

The Bernanke doctrine hadn’t been designed to deal with such a situation. When Bernanke and Tim Geithner, the Fed’s point man on Wall Street, first learned of Bear’s predicament, they believed that the bank should be allowed to fail. For decades, the Fed had resisted lending to
Wall Street firms for fear that it would encourage them to take excessive risks—a concern that economists refer to as “moral hazard.” (The discount window is confined to commercial banks.) Bear wasn’t one of Wall Street’s biggest firms, and its demise seemed unlikely to lead to other failures. In the argot of central bankers, the bank didn’t appear to present a “systemic risk.”

By late Thursday night, after officials from the New York Fed and the S.E.C. visited Bear’s offices to review its books, the assessment had changed. The company was a major participant in the “repurchase”—or “repo”—market, a little publicized but vitally important market in which banks raise cash on a short-term basis from mutual funds, hedge funds, insurance companies, and central banks. Every night, about $2.5 trillion turns over in the repo market. Most repo contracts roll over on a daily basis, and the lender can at any time return the collateral and demand its cash. This is precisely what many of Bear’s lenders were doing—a process akin to the run by depositors on the Bailey Bros. Building & Loan in “It’s a Wonderful Life.”

Bear was also a big dealer in credit-default swaps (C.D.S.s), which are basically insurance contracts on bonds. In return for a premium, the seller of a swap promises to cover the full value of a given bond in the case of a default. Bear alone reportedly had more than five thousand institutional partners with whom it had traded C.D.S.s. If the bank were to default before the markets opened on Friday, the effect on the repo and swaps markets would be chaotic.

At two o’clock that morning, Geithner called Don Kohn and told him that he wasn’t confident that the fallout from the bankruptcy of Bear Stearns could be contained. At about 4 A.M., Geithner spoke to Bernanke, who agreed that the Fed should intervene. The central bank decided to extend a twenty-eight-day loan to J. P. Morgan, Bear’s clearing bank, which would pass the money on to Bear. In agreeing to make the loan, Bernanke relied on Section 13(3) of the Federal Reserve Act of 1932, which empowered the Fed to extend credit to financial institutions other than banks in “unusual and exigent circumstances.”

News of the Fed’s loan got Bear through trading on Friday, but Bernanke and Paulson were eager to find a permanent solution before the Asian markets opened on Sunday night. After a weekend of torturous negotiations, J. P. Morgan agreed to buy Bear Stearns for a knockdown price of two dollars a share, but only after the Fed agreed to take on Bear’s twenty-nine-billion-dollar portfolio of subprime securities. “The further we got into it, the more we said, ‘Oh, my God! We really need to address this problem,’ ” a senior Fed official recalled. “The problem wasn’t the size of Bear Stearns—it wasn’t the fact that some creditors would have borne losses. The problem was—people use the term ‘too interconnected to fail.’ That’s not totally accurate, but it’s close enough.” In the repo market, for example, Bear Stearns had borrowed heavily from money-market mutual funds. “If Bear had failed,” the senior official went on, “all these money-market mutual funds, instead of getting their money back on Monday morning, would have found themselves with all kinds of illiquid collateral, including C.D.O.s”—collateralized debt obligations—“and God knows what else. It would have caused a run on that entire market. That, in turn, would have made it impossible for other investment banks to fund themselves.”

The day the Federal Reserve announced the rescue of Bear Stearns, it also cut the discount rate by another quarter point, and said that for a time it would open the discount window to twenty Wall Street firms—an unprecedented step. Fed officials felt they had little choice but to let
investment banks borrow from the Fed on the same terms as commercial banks, even if it encouraged moral hazard. “We thought that even if we were successful in getting a solution that avoided a default for Bear, what was happening in the credit markets had too much momentum,” a Fed official recalled. “We weren’t going to be able to contain the damage simply by helping avoid a failure by Bear.”

There is now wide agreement that Bernanke and his colleagues made the correct decision about Bear Stearns. If they had allowed the firm to file for bankruptcy, the financial panic that developed this fall would almost certainly have begun six months earlier. Instead, the markets settled for a while. “I think we did the right thing to try to preserve financial stability,” Bernanke said. “That’s our job. Yes, it’s moral-hazard-inducing, but the right way to address this question is not to let institutions fail and have a financial meltdown. When the economy has recovered, or is on the way to recovery, that’s the time to say, ‘How can we fix the system so it doesn’t happen again?’ You want to put the fire out first and then worry about the fire code.”

Nevertheless, after Bear Stearns’s deal with J. P. Morgan was announced, Bernanke was attacked—by the media, by conservative economists, even by former Fed officials. In an editorial titled “Pushovers at the Fed,” the Wall Street Journal declared that James Dimon, the chairman and chief executive of J. P. Morgan Chase, was “rolling over” the Fed and the Treasury. In early April, Paul Volcker, who chaired the Fed from 1979 to 1987, told the Economic Club of New York, “Sweeping powers have been exercised in a manner that is neither natural nor comfortable for a central bank.” The Fed’s job is to act as “custodian of the nation’s money,” Volcker went on, not to take “many billions of uncertain assets onto its own balance sheet.”

Some of the criticisms were unfair. Bear Stearns’s stockholders lost almost everything in the deal; James Cayne, the bank’s chairman, lost almost a billion dollars. Still, even some Fed officials were uneasy about the acquisition of Bear Stearns’s mortgage securities. Bernanke was sufficiently disturbed by Volcker’s speech that he called to reassure him that the Fed’s action had been an improvised response to a crisis rather than a template for future action.

In fact, it quickly became clear that an important precedent had been set: the Bernanke doctrine now included preventing the failure of major financial institutions. Since the collapse of the mortgage-securities market on Wall Street, in the summer of 2007, mortgage securitization had been left mainly in the hands of two companies that operated under government charters to encourage home-ownership: the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). Like the Wall Street firms, Fannie and Freddie had suffered big losses on their vast loan portfolios, and many Wall Street analysts believed that the companies were on the verge of insolvency—an alarming prospect for the U.S. government. In order to finance their purchases of mortgages and mortgage bonds, Fannie and Freddie had issued $5.2 trillion in debt, and although they were technically private companies, their debt traded as if the government had guaranteed it. If the companies defaulted, the creditworthiness of the entire government would be called into question.

On Sunday, July 13th, Paulson told reporters outside the Treasury Department that he would request from Congress authority to invest an unspecified amount of taxpayers’ money in Fannie
and Freddie, which would remain shareholder-owned corporations. Fed officials said that until Congress agreed to Paulson’s request the central bank would insure that the mortgage companies had sufficient cash by lending them money through the discount window. “We could recognize the systemic risk here,” the Fed policymaker said. “Paulson had a plan to deal with that risk, and the system required that somebody be there while the plan was being implemented. We had the money to bridge to the new facility.”

The plan to prop up Freddie and Fannie was no more warmly received than the Bear Stearns rescue package had been. “When I picked up my newspaper yesterday, I thought I woke up in France,” Senator Jim Bunning, a Republican from Kentucky, said to Bernanke when he appeared before the Senate banking committee. “But no, it turned out it was socialism here in the United States of America.” Two prominent Democratic economists, Lawrence Summers, the former Treasury Secretary, and Joseph Stiglitz, pointed out that the highly paid managers of the mortgage companies had been left in place, with few restrictions on how they operated. David Walker, the former director of the Government Accountability Office, said the rescue was a bad deal for the taxpayers.

Bernanke couldn’t say so publicly, but he agreed with some of the critics. For years, the Fed had warned that Fannie and Freddie were squeezing out competitors and engaging in risky mortgage-lending practices. Bernanke would have liked to combine a rescue package with extensive reforms, but he realized that an overhaul of the companies was not politically feasible. Despite their financial problems, Fannie and Freddie still had many powerful allies in Congress, and Bernanke was determined that the plan be approved quickly, in order to restore confidence in the markets.

On August 21st, Bernanke departed for the annual Jackson Hole conference, which was to be devoted to the credit crunch. Over the course of three days, one speaker after another challenged aspects of the Fed’s response, and, implicitly, of Bernanke’s leadership. Allan Meltzer, of Carnegie Mellon, complained that the Fed had adopted an ad-hoc approach to bailing out troubled firms. Franklin Allen, a professor at the Wharton School, said that banks and investment firms could use the Fed’s lending facilities as a means of concealing the state of their finances, and Willem Buiter, of the London School of Economics, accused the Fed of doing the financial industry’s bidding, saying that the central bank had “internalized the fears, beliefs, and world views of Wall Street” and fallen victim to “cognitive regulatory capture.”

Alan Blinder, Bernanke’s friend and colleague from Princeton, defended him, arguing that the Fed had performed well in trying circumstances, and Martin Feldstein, a Harvard economist, said that it had “responded appropriately this year.” But Feldstein added that the financial crisis was getting worse as housing prices continued to drop and homeowners to default. Perhaps the most suggestive comments were made by Yutaka Yamaguchi, a former deputy governor of the Bank of Japan, who, during the nineties, helped manage Japan’s response to a ruinous speculative bust. The Bank of Japan began cutting interest rates in July, 1991, Yamaguchi recalled, but the financial system didn’t stabilize until after the Japanese government bailed out a number of banks, a project that took almost a decade. The main lesson of the Japanese experience, he said, was the need for an “early and large-scale recapitalization of the financial system,” using public money.
Throughout the discussion, Bernanke sat quietly and listened. He looked exhausted, and during one presentation he appeared to fall asleep. In his own speech, he defended the Fed’s actions and argued that in the future the agency should be given more power to supervise big financial firms and opaque markets such as the repo market, and that a legal framework should be established to allow the government to intervene when they got into trouble. The speech suggested that Bernanke had adopted a more favorable view of regulation, but he made no mention of using monetary policy to deflate speculative bubbles or of recapitalizing the banking system.

Bernanke still believed that his finger-in-the-dike strategy was working. After all, in the second quarter of the year the Gross Domestic Product had expanded at an annualized rate of almost three per cent—and the unemployment rate was under six per cent. Commodity prices, including oil prices, had started to fall, which would ease inflation pressures. In Washington, over Labor Day weekend, Bernanke and Paulson met to discuss Fannie and Freddie. In the five weeks since Congress had given the Bush Administration broad authority to invest in the companies, the firms had tried unsuccessfully to raise capital on their own. Paulson and Bernanke decided that a government takeover was now the best option. In addition to removing the threat that Fannie and Freddie would default on their debts, it would enable the government to expand their lending activities and help stabilize house prices. “We have worked together for nine months, recognizing that the real-estate market is at the heart of our economic problems,” Paulson told me later in September. “We said, ‘If you wanted to get at that, how would you do it?’ ”

On Sunday, September 7th, Paulson announced that the government would place Fannie and Freddie in a “conservatorship,” replacing their chief executives, taking an eighty-per-cent ownership stake in each of the companies, and providing them with access to as much as two hundred billion dollars in capital. The next day, the Dow closed up almost three hundred points. The billionaire Warren Buffett, whom Paulson had briefed on the move, said that it represented “exactly the right decision for the country.” Even the Wall Street Journal’s editorial page, which for months had criticized Paulson and Bernanke, grudgingly endorsed the plan.

At the Treasury Department and the Fed, there was little opportunity to celebrate. On Tuesday, September 9th, stock in Lehman Brothers dropped by forty-five per cent, following reports that it had failed to secure billions of dollars in capital from a Korean bank. Lehman approached several potential buyers, including Bank of America and Barclays, the British bank. But by the end of the week it was running out of cash. On Friday evening, Geithner and Paulson summoned a group of senior Wall Street executives to the New York Fed and told them that the government wanted an “industry” solution to Lehman’s problems. Talks continued through the weekend, but by Sunday afternoon both Bank of America and Barclays had bowed out, and word circulated that Lehman was preparing to file for bankruptcy.

Remarkably, once the potential bidders dropped out, Bernanke and Paulson never seriously considered mounting a government rescue of Lehman Brothers. Bernanke and other Fed officials say that they lacked the legal authority to save the bank. “There was no mechanism, there was no option, there was no set of rules, there was no funding to allow us to address that situation,” Bernanke said last month, at the Economic Club of New York. “The Federal Reserve’s ability to lend, which was used in the Bear Stearns case, for example, requires that adequate collateral be
posted. . . . In this case, that was impossible—there simply wasn’t enough collateral to support the lending. . . . We worked very hard, over one of those famous weekends, with not only some potential acquirers of Lehman but we also called together many of the leading C.E.O.s of the private sector in New York to try to come to a solution. We didn’t find one.” Bernanke insisted to me, too, that there was nothing he could have done to prevent Lehman from going under. “With Bear Stearns, with all the others, there was a point when someone said, ‘Mr. Chairman, are we going to do this deal or not?’ With Lehman, we were never anywhere near that point. There wasn’t a decision to be made.”

However, Bernanke and Paulson were undoubtedly sensitive to the charge, made in the wake of their efforts to salvage Bear Stearns, Fannie Mae, and Freddie Mac, that they were bailing out greedy and irresponsible financiers. For months, the Treasury and the Fed had urged Lehman’s senior executives to raise more capital, which the bank had failed to do. Many analysts remain skeptical that the Fed couldn’t have rescued Lehman. “It’s really hard for me to accept that they couldn’t have come up with something,” Dean Baker, of the Center for Economic and Policy Research, said. “They’ve been doing things of dubious legal authority all year. Who would have sued them?”

At the time, a popular interpretation of Lehman Brothers’ demise was that Bernanke and Paulson had finally drawn a line in the sand. (“We’ve reestablished ‘moral hazard,’” a source involved in the Lehman discussions told the Wall Street Journal.) But less than forty-eight hours later the Fed agreed to extend up to eighty-five billion dollars to A.I.G., a firm that had possibly acted even more irresponsibly. One difference was that the Fed, in charging A.I.G. an interest rate of more than ten per cent and demanding up to eighty per cent of the company’s equity, had been able to impose tough terms in exchange for its support. “We felt we could say that this was a well-secured loan and that we were not putting fiscal resources at risk,” the senior Fed official told me.

More important, A.I.G. was a much bigger and more complex firm than Lehman Brothers was. In addition to providing life insurance and homeowners’ policies, it was a major insurer of mortgage bonds and other types of securities. If it had been allowed to default, every big financial firm in the country, and many others abroad, would have been adversely affected. But even the announcement of A.I.G.’s rescue wasn’t enough to calm the markets.

On Tuesday, September 16th, the Reserve Primary Fund, a New York-based money-market mutual fund that had bought more than seven hundred million dollars in short-term debt issued by Lehman Brothers, announced that it was suspending redemptions because its net asset value had fallen below a dollar a share. The subprime virus was infecting parts of the financial system that had appeared immune to it—including the most risk-averse institutions—and the news that the Reserve Primary Fund had “broken the buck” sparked an investor panic that by mid-October had become global, striking countries as far removed as Iceland, Hungary, and Brazil.

Bernanke accompanied Paulson to Capitol Hill to warn reluctant congressmen about the catastrophic consequences of failing to pass a bailout bill. (“When you listened to him describe it, you gulped,” Senator Chuck Schumer, the New York Democrat, said of Bernanke’s evocation of the crisis.) He helped enable Goldman Sachs and Morgan Stanley to convert to bank holding
companies, and he cooperated with other regulators on the seizure of Washington Mutual and the sale of most of its operations to J. P. Morgan. He was in his office until 4 A.M. finalizing Citigroup’s takeover of Wachovia. (The government agreed to cap Citigroup’s potential losses on Wachovia’s huge mortgage portfolio.) The Fed also announced that it would spend up to a half-trillion dollars shoring up money-market mutual funds.

Often, it was clear that Bernanke and Paulson were improvising. On November 10th, the Fed and the Treasury Department announced that they would provide more money to A.I.G., raising the total amount of public funds committed to the company to a hundred and fifty billion dollars. (The Fed’s original eighty-five-billion-dollar loan, and a subsequent one, of $37.8 billion, had proved inadequate.) Two days later, Paulson abandoned the idea of buying up distressed mortgage securities—a proposal that he and Bernanke had vigorously defended—and last week, at a hearing of the House Financial Services Committee, congressmen excoriated him. “You seem to be flying a seven-hundred-billion-dollar plane by the seat of your pants,” Gary Ackerman, a Democrat from New York, scolded Paulson. Perhaps the most damning criticism came from the committee’s chairman, Barney Frank, the Massachusetts Democrat, who noted that although the bailout legislation had included specific provisions to address foreclosures, Americans continued to default on mortgages at a record rate.

The Congressman had a point. Paulson’s and Bernanke’s efforts to prop up the financial system have so far had little effect on the housing slump, which is the source of the trouble. Until that problem is addressed, the financial sector will remain under great stress.

Last week, the stock market plunged to its lowest level in eleven years, auto executives flew into Washington on their corporate jets to demand a bailout, and Wall Street analysts warned that the political vacuum between Administrations could create more turmoil. “We can’t get from here to February 1st if the current ‘who’s in charge?’ situation continues,” Robert Barbera, the chief economist at I.T.G., an investment firm, told the Times.

Bernanke, though, remains remarkably calm. (Jim Cramer would say oblivious.) He is unapologetic about the alterations to the bailout plan, arguing that changing circumstances demanded them, and he is relieved that the Treasury Department and Congress are now leading the government’s response to the crisis. Despite grim news on unemployment, retail sales, and corporate earnings, he is hopeful that an economic recovery will begin sometime next year. Until the middle of last week, there were signs that the credit crisis was easing: some banks were lending to each other again, the interest rates that they charge each other have come down, and no major financial institution has failed since the passage of the bailout bill. “It was a very important step,” Bernanke told me last week, referring to the bailout. “It greatly diminished the threat of a global financial meltdown. But, as Hank Paulson said publicly, ‘you don’t get much credit for averting a disaster.’ ”

On Wall Street, Bernanke’s reviews have improved, especially at firms that have received assistance from the Fed. “I think he has done a superb job, both in coming up with innovative solutions and in coordinating the policy response with the New York Fed, the Treasury Department, and the S.E.C.,” John Mack, of Morgan Stanley, told me. “I give him very high marks.” George Soros, the investor and philanthropist, whose firm has not benefitted from the
Fed's largesse, said, "Early on, being an academic, he didn't realize the seriousness of the problem. But after the start of the year he got the message and he acted very decisively." Still, Soros went on, citing renewed turbulence in the markets and speculation about the fate of Citigroup, whose stock price last Friday fell below four dollars, the crisis is far from over. "With Lehman, the system effectively broke down. It is now on life support from the Fed, but it's really touch and go whether they can hold it together. The pressure is mounting even as we speak." He added, "We may be on the verge of another collapse."

Bernanke, in a search for inspiration and guidance, has been thinking about two Presidents: Franklin Delano Roosevelt and Abraham Lincoln. From the former he took the notion that what policymakers needed in a crisis was flexibility and resolve. After assuming office, in March, 1933, Roosevelt enacted bold measures aimed at reviving the moribund economy: a banking holiday, deposit insurance, expanded public works, a devaluation of the dollar, price controls, the imposition of production directives on many industries. Some of the measures worked; some may have delayed a rebound. But they gave the American people hope, because they were decisive actions.

Bernanke's knowledge of Lincoln was more limited, but one morning the man who organizes the parking pool in the basement of the Fed's headquarters had given him a copy of a statement Lincoln made in 1862, after he was criticized by Congress for military blunders during the Civil War: "If I were to try to read, much less answer, all the attacks made on me, this shop might as well be closed for any other business. I do the very best I know how—the very best I can; and I mean to keep doing so until the end. If the end brings me out all right, what is said against me won't amount to anything. If the end brings me out wrong, ten angels swearing I was right will make no difference."

Bernanke keeps the statement on his desk, so he can refer to it when necessary.
E. Stanley O’Neal, the former chief executive of Merrill Lynch, was paid $46 million in 2006, $18.5 million of it in cash. "As a result of the extraordinary growth at Merrill during my tenure as C.E.O., the board saw fit to increase my compensation each year." Photo: Daniel Acker/Bloomberg News

For Dow Kim, 2006 was a very good year. While his salary at Merrill Lynch was $350,000, his total compensation was 100 times that — $35 million.

The difference between the two amounts was his bonus, a rich reward for the robust earnings made by the traders he oversaw in Merrill’s mortgage business.

Mr. Kim’s colleagues, not only at his level, but far down the ranks, also pocketed large paychecks. In all, Merrill handed out $5 billion to $6 billion in bonuses that year. A 20-something analyst with a base salary of $130,000 collected a bonus of $250,000. And a 30-something trader with a $180,000 salary got $5 million.

But Merrill’s record earnings in 2006 — $7.5 billion — turned out to be a mirage. The company has since lost three times that amount, largely because the mortgage investments that supposedly had powered some of those profits plunged in value.

Unlike the earnings, however, the bonuses have not been reversed.

As regulators and shareholders sift through the rubble of the financial crisis, questions are being asked about what role lavish bonuses played in the debacle. Scrutiny over pay is intensifying as banks like Merrill prepare to dole out bonuses even after they have had to be propped up with billions of dollars of taxpayers’ money. While bonuses are expected to be half of what they were a year ago, some bankers could still collect millions of dollars.

Critics say bonuses never should have been so big in the first place, because they were based on ephemeral earnings. These people contend that Wall Street’s pay structure, in which bonuses are based on short-term profits, encouraged employees to act like gamblers at a casino — and let them collect their winnings while the roulette wheel was still spinning.

“Compensation was flawed top to bottom,” said Lucian A. Bebchuk, a professor at Harvard Law School and an expert on compensation. “The whole organization was responding to distorted incentives.”

Even Wall Streeters concede they were dazzled by the money. To earn bigger bonuses, many traders ignored or played down the risks they took until their bonuses were paid. Their bosses often turned a blind eye because it was in their interest as well.

“That’s a call that senior management or risk management should question, but of course their pay was tied to it too,” said Brian Lin, a former mortgage trader at Merrill Lynch.

The highest-ranking executives at four firms have agreed under pressure to go without their bonuses, including John A. Thain, who initially wanted a bonus this year since he joined Merrill Lynch as chief executive after its ill-fated mortgage bets were made. And four former executives at one hard-hit bank, UBS of Switzerland, recently volunteered to return some of the bonuses they were paid before the financial crisis. But few think others on Wall Street will follow that lead.

For now, most banks are looking forward rather than backward. Morgan Stanley and UBS are attaching new strings to bonuses, allowing them to pull back part of workers’ payouts if they turn out to have been based on illusory profits. Those policies, had they been in place in recent years, might have clawed back hundreds of millions of dollars of compensation paid out in 2006 to employees at all levels, including senior executives who are still at those banks.

A Bonus Bonanza

For Wall Street, much of this decade represented a new Gilded Age. Salaries were merely play money — a pittance compared to bonuses. Bonus season became an annual celebration of the riches to be had in the markets. That was especially so in the New York area, where nearly $1 out of every $4 that companies paid employees last year went to someone in the financial industry. Bankers celebrated with five-figure dinners, vied to outspend each other at charity auctions and spent their newfound fortunes on new homes, cars and art.
The bonanza redefined success for an entire generation. Graduates of top universities sought their fortunes in banking, rather than in careers like medicine, engineering or teaching. Wall Street worked its rookies hard, but it held out the promise of rich rewards. In college dorms, tales of 30-year-olds pulling down $5 million a year were legion.

While top executives received the biggest bonuses, what is striking is how many employees throughout the ranks took home large paychecks. On Wall Street, the first goal was to make “a buck” — a million dollars. More than 100 people in Merrill’s bond unit alone broke the million-dollar mark in 2006. Goldman Sachs paid more than $20 million apiece to more than 50 people that year, according to a person familiar with the matter. Goldman declined to comment.

Pay was tied to profit, and profit to the easy, borrowed money that could be invested in markets like mortgage securities. As the financial industry’s role in the economy grew, workers’ pay ballooned, leaping sixfold since 1975, nearly twice as much as the increase in pay for the average American worker.

“The financial services industry was in a bubble,” said Mark Zandi, chief economist at Moody’s Economy.com. “The industry got a bigger share of the economic pie.”

A Money Machine

Dow Kim stepped into this milieu in the mid-1980s, fresh from the Wharton School at the University of Pennsylvania. Born in Seoul and raised there and in Singapore, Mr. Kim moved to the United States at 16 to attend Phillips Academy in Andover, Mass. A quiet workaholic in an industry of workaholics, he seemed to rise through the ranks by sheer will. After a stint trading bonds in Tokyo, he moved to New York to oversee Merrill’s fixed-income business in 2001. Two years later, he became co-president.

Even as tremors began to reverberate through the housing market and his own company, Mr. Kim exuded optimism.

After several of his key deputies left the firm in the summer of 2006, he appointed a former colleague from Asia, Osman Semerci, as his deputy, and beneath Mr. Semerci he installed Dale M. Lattanzio and Douglas J. Mallach. Mr. Lattanzio promptly purchased a $5 million home, as well as oceanfront property in Mantoloking, a wealthy enclave in New Jersey, according to county records.
Merrill and the executives named in this article declined to comment or say whether they would return past bonuses. Mr. Mallach did not return telephone calls.

Mr. Semerci, Mr. Lattanzio and Mr. Mallach joined Mr. Kim as Merrill entered a new phase in its mortgage buildup. That September, the bank spent $1.3 billion to buy the First Franklin Financial Corporation, a mortgage lender in California, in part so it could bundle its mortgages into lucrative bonds.

Yet Mr. Kim was growing restless. That same month, he told E. Stanley O’Neal, Merrill’s chief executive, that he was considering starting his own hedge fund. His traders were stunned. But Mr. O’Neal persuaded Mr. Kim to stay, assuring him that the future was bright for Merrill’s mortgage business, and, by extension, for Mr. Kim.

Mr. Kim stepped to the lectern on the bond-trading floor and told his anxious traders that he was not going anywhere, and that business was looking up, according to four former employees who were there. The traders erupted in applause.

“No one wanted to stop this thing,” said one former mortgage analyst at Merrill. “It was a machine, and we all knew it was going to be a very, very good year.”

Merrill Lynch celebrated its success even before the year was over. In November, the company hosted a three-day golf tournament at Pebble Beach, Calif.

Mr. Kim, an avid golfer, played alongside William H. Gross, a founder of Pimco, the big bond house, and Ralph R. Cioffi, who oversaw two Bear Stearns hedge funds whose subsequent collapse in 2007 would send shock waves through the financial world.

“There didn’t seem to be an end in sight,” said a person who attended the tournament.

Back in New York, Mr. Kim’s team was eagerly bundling risky home mortgages into bonds. One of the last deals they put together that year was called “Costa Bella,” or beautiful coast — a name that recalls Pebble Beach. The $500 million bundle of loans, a type of investment known as a collateralized debt obligation, was managed by Mr. Gross’s Pimco.

Merrill Lynch collected about $5 million in fees for concocting Costa Bella, which included mortgages originated by First Franklin.

But Costa Bella, like so many other C.D.O.’s, was filled with loans that borrowers could not repay. Initially part of it was rated AAA, but Costa Bella is now deeply troubled. The losses on the investment far exceed the money Merrill collected for putting the deal together.

**So Much for So Few**

By the time Costa Bella ran into trouble, the Merrill bankers who had devised it had collected their bonuses for 2006. Mr. Kim’s fixed-income unit generated more than half of Merrill’s revenue that year, according to people with direct knowledge of the matter. As a reward, Mr.
O’Neal and Mr. Kim paid nearly a third of Merrill’s $5 billion to $6 billion bonus pool to the 2,000 professionals in the division.

Mr. O’Neal himself was paid $46 million, according to Equilar, an executive compensation research firm and data provider in California. Mr. Kim received $35 million. About 57 percent of their pay was in stock, which would lose much of its value over the next two years, but even the cash portions of their bonus were generous: $18.5 million for Mr. O’Neal, and $14.5 million for Mr. Kim, according to Equilar.

Mr. Kim and his deputies were given wide discretion about how to dole out their pot of money. Mr. Semerci was among the highest earners in 2006, at more than $20 million. Below him, Mr. Mallach and Mr. Lattanzio each earned more than $10 million. They were among just over 100 people who accounted for some $500 million of the pool, according to people with direct knowledge of the matter.

After that blowout, Merrill pushed even deeper into the mortgage business, despite growing signs that the housing bubble was starting to burst. That decision proved disastrous. As the problems in the subprime mortgage market exploded into a full-blown crisis, the value of Merrill’s investments plummeted. The firm has since written down its investments by more than $54 billion, selling some of them for pennies on the dollar.

Mr. Lin, the former Merrill trader, arrived late to the party. He was one of the last people hired onto Merrill’s mortgage desk, in the summer of 2007. Even then, Merrill guaranteed Mr. Lin a bonus if he joined the firm. Mr. Lin would not disclose his bonus, but such payouts were often in the seven figures.

Mr. Lin said he quickly noticed that traders across Wall Street were reluctant to admit what now seems so obvious: Their mortgage investments were worth far less than they had thought.

“It’s always human nature,” said Mr. Lin, who lost his job at Merrill last summer and now works at RRMS Advisors, a consulting firm that advises investors in troubled mortgage investments. “You want to pull for the market to do well because you’re vested.”

But critics question why Wall Street embraced the risky deals even as the housing and mortgage markets began to weaken.

“What happened to their investments was of no interest to them, because they would already be paid,” said Paul Hodgson, senior research associate at the Corporate Library, a shareholder activist group. Some Wall Street executives argue that paying a larger portion of bonuses in the form of stock, rather than in cash, might keep employees from making short-sighted decisions. But Mr. Hodgson contended that that would not go far enough, in part because the cash rewards alone
were so high. Mr. Kim, for example, was paid a total of $116.6 million in cash and stock from 2001 to 2007. Of that, $55 million was in cash, according to Equilar.

Leaving the Scene

As the damage at Merrill became clear in 2007, Mr. Kim, his deputies and finally Mr. O’Neal left the firm. Mr. Kim opened a hedge fund, but it quickly closed. Mr. Semerci and Mr. Lattanzio landed at a hedge fund in London.

All three departed without collecting bonuses in 2007. Mr. O’Neal, however, got even richer by leaving Merrill Lynch. He was awarded an exit package worth $161 million.

Clawing back the 2006 bonuses at Merrill would not come close to making up for the company’s losses, which exceed all the profits that the firm earned over the previous 20 years. This fall, the once-proud firm was sold to Bank of America, ending its 94-year history as an independent firm.

Mr. Bebchuk of Harvard Law School said investment banks like Merrill were brought to their knees because their employees chased after the rich rewards that executives promised them.

“They were trying to get as much of this or that paper, they were doing it with excitement and vigor, and that was because they knew they would be making huge amounts of money by the end of the year,” he said.

Ben White contributed reporting.
PERSPECTIVE
Who Is To Blame For The Subprime Crisis?

By Eric Petroff
Investopedia

Anytime something bad happens, it doesn't take long before blame starts to be assigned. In the instance of subprime mortgage woes, there is no single entity or individual to point the finger at. Instead, this mess is a collective creation of the world's central banks, homeowners, lenders, credit rating agencies and underwriters, and investors. Let's investigate.

The Mess

The economy was at risk of a deep recession after the dotcom bubble burst in early 2000; this situation was compounded by the September 11 terrorist attacks that followed in 2001. In response, central banks around the world tried to stimulate the economy. They created capital liquidity through a reduction in interest rates. In turn, investors sought higher returns through riskier investments. Lenders took on greater risks too, and approved subprime mortgage loans to borrowers with poor credit. Consumer demand drove the housing bubble to all-time highs in the summer of 2005, which ultimately collapsed in August of 2006. (For an in-depth discussion of these events, see The Fuel That Fed The Subprime Meltdown.)

The end result of these key events was increased foreclosure activity, large lenders and hedge funds declaring bankruptcy, and fears regarding further decreases in economic growth and consumer spending. So who's to blame? Let's take a look at the key players.

Biggest Culprit: The Lenders

Most of the blame should be pointed at the mortgage originators (lenders) for creating these problems. It was the lenders who ultimately lent funds to people with poor credit and a high risk of default. (To learn more about subprime lending, see Subprime Is Often Subpar.)

When the central banks flooded the markets with capital liquidity, it not only lowered interest rates, it also broadly depressed risk premiums as investors sought riskier opportunities to bolster their investment returns. At the same time, lenders found themselves with ample capital to lend and, like investors, an increased willingness to undertake additional risk to increase their investment returns.

In defense of the lenders, there was an increased demand for mortgages, and housing prices were increasing because interest rates had dropped substantially. At the time, lenders probably saw subprime mortgages as less of a risk than they really were: rates were low, the economy was healthy and people were making their payments.

As you can see in Figure 1, subprime mortgage originations grew from $173 billion in 2001 to a record level of $665 billion in 2005, which represented an increase of nearly 300%. There is a clear relationship between the liquidity following September 11, 2001, and subprime loan

The Echo Foundation
originations; lenders were clearly willing and able to provide borrowers with the necessary funds to purchase a home.

![Subprime Mortgage Originations]

Figure 1
Note: The data presented herein are believed to be reliable but have not been independently verified. Any such information may be incomplete or condensed.

**Partner In Crime: Homebuyers**

While we're on the topic of lenders, we should also mention the home buyers. Many were playing an extremely risky game by buying houses they could barely afford. They were able to make these purchases with non-traditional mortgages (such as 2/28 and interest-only mortgages) that offered low introductory rates and minimal initial costs such as "no down payment". Their hope lay in price appreciation, which would have allowed them to refinance at lower rates and take the equity out of the home for use in other spending. However, instead of continued appreciation, the housing bubble burst, and prices dropped rapidly. (To learn more, read *Why Housing Market Bubbles Pop.*)

As a result, when their mortgages reset, many homeowners were unable to refinance their mortgages to lower rates, as there was no equity being created as housing prices fell. They were, therefore, forced to reset their mortgage at higher rates, which many could not afford. Many homeowners were simply forced to default on their mortgages. Foreclosures continued to increase through 2006 and 2007.

In their exuberance to hook more subprime borrowers, some lenders or mortgage brokers may have given the impression that there was no risk to these mortgages and that the costs weren't that high; however, at the end of the day, many borrowers simply assumed mortgages they couldn't reasonably afford. Had they not made such an aggressive purchase and assumed a less risky mortgage, the overall effects might have been manageable. (To learn about moral debate surrounding all things subprime, read *Subprime Lending: Helping Hand Or Underhanded?*)

Exacerbating the situation, lenders and investors of securities backed by these defaulting mortgages suffered. Lenders lost money on defaulted mortgages as they were increasingly left
with property that was worth less than the amount originally loaned. In many cases, the losses were large enough to result in bankruptcy.

**Investment Banks Worsen the Situation**

The increased use of the *secondary mortgage market* by lenders added to the number of subprime loans lenders could originate. Instead of holding the originated mortgages on their books, lenders were able to simply sell off the mortgages in the secondary market and collect the originating fees. This freed up more capital for even more lending, which increased liquidity even more. The snowball began to build momentum. (For a crash course on the secondary mortgage market, check out *Behind The Scenes Of Your Mortgage*.)

A lot of the demand for these mortgages came from the creation of assets that pooled mortgages together into a security, such as a *collateralized debt obligation* (CDO). In this process, investment banks would buy the mortgages from lenders and *securitize* these mortgages into bonds, which were sold to investors through CDOs.

The chart below demonstrates the incredible increase in global CDOs issues in 2006.

![Global CDO Issuance Chart](image_url)

Image courtesy Hammond Associates. The data presented herein are believed to be reliable but have not been independently verified. Any such information may be incomplete or condensed.

**Figure 2**

**Rating Agencies: Possible Conflict of Interest**

A lot of criticism has been directed at the *rating agencies* and *underwriters* of the CDOs and other mortgage-backed securities that included subprime loans in their mortgage pools. Some argue that the rating agencies should have foreseen the high default rates for subprime borrowers, and they should have given these CDOs much lower ratings than the 'AAA' rating.
given to the higher quality tranches. If the ratings had been more accurate, fewer investors would have bought into these securities, and the losses may not have been as bad. (To learn more on the ratings system, see *What Is A Corporate Credit Rating?*)

Moreover, some have pointed to the conflict of interest between rating agencies, which receive fees from a security's creator, and their ability to give an unbiased assessment of risk. The argument is that rating agencies were enticed to give better ratings in order to continue receiving service fees, or they run the risk of the underwriter going to a different rating agency (or the security not getting rated at all). However, on the flip side, it's hard to sell a security if it is not rated.

Regardless of the criticism surrounding the relationship between underwriters and rating agencies, the fact of the matter is that they were simply bringing bonds to market based on market demand.

**Fuel to the Fire: Investor Behavior**

Just as the homeowners are to blame for their purchases gone wrong, much of the blame also must be placed on those who invested in CDOs. Investors were the ones willing to purchase these CDOs at ridiculously low premiums over Treasury bonds. These enticingly low rates are what ultimately led to such huge demand for subprime loans.

Much of the blame here lies with investors because it is up to individuals to perform due diligence on their investments and make appropriate expectations. Investors failed in this by taking the 'AAA' CDO ratings at face value.

**Final Culprit: Hedge Funds**

Another party that added to the mess was the hedge fund industry. It aggravated the problem not only by pushing rates lower, but also by fueling the market volatility that caused investor losses. The failures of a few investment managers also contributed to the problem. (To learn more, check out *Taking A Look Behind Hedge Funds.*)

To illustrate, there is a type of hedge fund strategy that can be best described as "credit arbitrage". It involves purchasing subprime bonds on credit and hedging these positions with credit default swaps. This amplified demand for CDOs; by using leverage, a fund could purchase a lot more CDOs and bonds than it could with existing capital alone, pushing subprime interest rates lower and further fueling the problem. Moreover, because leverage was involved, this set the stage for a spike in volatility, which is exactly what happened as soon as investors realized the true, lesser quality of subprime CDOs.

Because hedge funds use a significant amount of leverage, losses were amplified and many hedge funds shut down operations as they ran out of money in the face of margin calls. (For more on this, see *Massive Hedge Fund Failures* and *Losing The Amaranth Gamble.*)
Plenty of Blame to Go Around

Overall, it was a mix of factors and participants that precipitated the current subprime mess. Ultimately, though, human behavior and greed drove the demand, supply and the investor appetite for these types of loans. Hindsight is always 20/20, and it is now obvious that there was a lack of wisdom on the part of many. However, there are countless examples of markets lacking wisdom, most recently the dotcom bubble and ensuing "irrational exuberance" on the part of investors.

It seems to be a fact of life that investors will always extrapolate current conditions too far into the future - good, bad or ugly.

For a one-stop shop on subprime mortgages and the subprime meltdown, check out the Subprime Mortgages Feature.
4. Consumer Behavior: Before & After the Recession:

PERСПЕКТИВА

How the Great Recession Has Changed Life in America

Pew Research Findings
June 30, 2010

I. Overview

Of the 13 recessions that the American public has endured since the Great Depression of 1929-33, none has presented a more punishing combination of length, breadth and depth than this one. A new Pew Research survey finds that 30 months after it began, the Great Recession has led to a downsizing of Americans' expectations about their retirements and their children's future; a new frugality in their spending and borrowing habits; and a concern that it could take several years, at a minimum, for their house values and family finances to recover.

The survey also finds that more than half of the adults in U.S. labor force (55%) have experienced some work-related hardship — be it a spell of unemployment, a cut in pay, a reduction in hours or an involuntary move to part-time work. In addition, the bursting of the pre-recession housing and stock market bubbles has shrunk the wealth of the average American household by an estimated 20%, the deepest such decline in the post-World War II era, according to government data.

While nearly all Americans have been hurt in one way or another, some groups have suffered more than others. Blacks and Hispanics have borne a disproportionate share of both the job losses and the housing foreclosures. Young adults have taken the biggest losses on the job front. Middle-aged adults have gotten the worst of the downturn in house values, household finances and retirement accounts. Men have lost many more jobs than women. And across most
indicators, those with a high school diploma or less education have been hit harder than those with a college degree or more.

![Image of a table showing some groups more optimistic than others.]

Whether by choice or necessity, many Americans have already significantly scaled back their pre-recession borrow-and-spend habits. According to government data, household spending has gone down, savings rates have gone up, consumer credit has remained stable and mortgage debt has plunged during this recession.

The survey finds that the public is starting to see some light at the end of the tunnel. More than six-in-ten survey respondents (62%) say they expect their personal financial situation to improve in the coming year—the most optimistic reading on this question since before the recession began. Likewise, about six-in-ten (61%) say they believe the damage the recession has inflicted on the U.S. economy will prove to be temporary rather than permanent.

This report sets out to present a comprehensive balance sheet on the Great Recession by looking at economic outcomes, behavioral changes and attitudinal trends among the full population as well as various subgroups. Our analysis is drawn from two sources—a comprehensive Pew Research telephone survey of a representative, national sample of 2,967 adults conducted from May 11 to May 31, 2010 (see Appendix for details), and a Pew Research analysis of government economic and demographic trend data.

One striking finding of the survey is that some of the demographic groups that have suffered the worst economic hits are also the ones most optimistic about a recovery—both for themselves personally and for the U.S. economy as a whole.

Blacks and Hispanics are more upbeat than whites. The young are more optimistic than middle-aged and older Americans. And Democrats are more upbeat than Republicans, even though Democrats have lower incomes and less wealth and have suffered more recession-related job losses.

These group differences are apparent not just in responses to specific survey questions, but also in a set of statistical models that examine the independent impact of race, partisanship and age on
the likelihood that a respondent will express optimism on six different attitudes about the economy tested in the survey, controlling for a range of demographic variables and recession-related experiences. The analysis finds that blacks, Democrats and, on most questions, younger adults are more likely than whites, Republicans and older adults to hold positive views about the national economy and their personal finances, regardless of their income, education, gender or whether they have had difficulty paying their bills, making mortgage or rent payments; getting or paying for medical care; or have had to cut spending during the recession.

One likely explanation for these seemingly counterintuitive patterns is that in an age of highly polarized politics, Democrats and Republicans differ not only in their values, attitudes and policy positions, but, increasingly, in their basic perceptions of reality.

This is not the first Pew Research survey taken in the past year that shows that the election of Barack Obama (which came at the height of the recession in November 2008) appears to have put his most enthusiastic supporters—especially blacks, Democrats and young adults—in a more positive frame of mind than Obama’s detractors about many aspects of national life.  

For example, since Obama was elected Democrats have become more optimistic than Republicans about the state of the national economy. For most of the time that George W. Bush was in office, the reverse was true: Republicans were more upbeat—often, much more upbeat—than Democrats.

1. In addition to race, party identification and age, the logistic regression models include gender, education, income and whether the respondent had experienced recession-related problems to predict the respondents’ views on the current state of the economy, their personal financial situation and how they think their family will fare financially in the coming year.

2. For similar findings of this nature from another Pew Research Center survey, see “Blacks Upbeat about Black Progress, Prospects,” January 12, 2010.

3. Guo, John (2014, October 3) These charts show just how bad the recession was for U.S. consumers, Washington Post. Internet
Measured in spending, recovery has been slow

In these charts, we plot how consumer expenditures fared during the 2007 recession compared with the seven recessions that preceded it.

For each recession, there is a single line that represents consumer spending relative to the level of spending at the start of that recession. For instance, in 2001 Q4, consumer spending was still only about 2.4 percent higher than it was four years prior at the beginning of the recession.

Below, consumer expenditures are broken out by spending categories. Purchases of goods were greatly affected by the recession, while the effects on services was milder. At one extreme, car purchases were stunted from 2007 to 2011. At the other extreme, the recession barely touched healthcare spending, which continued on its upward trend.

Recovery Measured by Spending 2007 - 2011

- The recovery from the recession has been very slow as measured in terms of consumer spending. The charts compare spending four years before and after recession.
- Charts show how consumers purchased different types of things: Goods (Cars, washing machines and houses) and services (healthcare, Disney)
- Before recession consumers were buying goods and services at a fast rate. After recession there was a steady decline for two years.
- Purchases of goods were very slow to recover.
○ The Fed analysis indicates that household frugality was responsible for about 38% of the cutback in combined credit card and auto loan obligations.

PERSPECTIVE

High-income Household Spending And The Economic Recovery

By Aaron E. Cobet
April 2014

In late 2007, the United States fell into a "Great Recession." According to the National Bureau of Economic Research the recession officially ended in June 2009, but it took several more years for average household income and expenditures to exceed their 2008 levels in nominal terms. The recession lowered household income and consumer expenditures across all income groups. This Spotlight on Statistics examines trends in income and expenditures and how unevenly the gains were distributed across socioeconomic groups.

Income and expenditures have returned to 2008 levels

Average levels of income and expenditures have returned to prerecession levels in nominal dollars, which are not adjusted for price inflation. In 2011, average household income exceeded the 2008 level. Similarly, in 2012, average consumer expenditures exceeded 2008 levels.

Income grew predominantly for the higher income quintiles

While average income has returned to prerecession levels, income gains have been distributed unevenly across income quintiles. (Income quintiles are five equally sized groups of households that have been divided from lowest to highest according to their annual income.) Between 2008 and 2012, the highest income quintile accounted for more than 80 percent of the total increase in household income in the United States. The fourth income quintile also experienced a significant gain between 2008 and 2012, while the lowest, second, and third income quintiles experienced essentially no change in income.

Expenditures also grew more for the higher income quintiles

The expenditure gains were also distributed unevenly, but their distribution was less extreme than the distribution of income. Between 2008 and 2012, the expenditure increases of the highest income quintile accounted for almost half of the total spending gains across all five quintiles.

The expenditure increases of the fourth quintile were roughly equal to the combined spending increases of the lowest three quintiles. However, the second income quintile also recorded notable expenditure increases.

Sources of increased expenditures in the highest quintile
Between 2008 and 2012, the highest income quintile increased overall spending by more than $2,300. Spending increased by about $3,800 in nine categories, while spending decreased by about $1,500 in five categories.

The largest spending increases were for health care, transportation, and education. Health care spending increased because of higher expenditures for health insurance and medical supplies; transportation spending increased because of vehicle purchases; and education spending increased because of college tuition. The largest spending decreases were for housing.

Federal research shows that the highest quintile (top 20% by wealth) increased their spending by $2300 while the lowest quintile decreased their spending by $150.
9 August 2007
BNP Paribas freeze three of their funds, indicating that they have no way of valuing the complex assets inside them known as collateralised debt obligations (CDOs), or packages of sub-prime loans. It is the first major bank to acknowledge the risk of exposure to sub-prime mortgage markets. Adam Applegarth (right), Northern Rock's chief executive, later says that it was "the day the world changed".

Larry Elliott, economics editor, said: "As far as the financial markets are concerned, August 9 2007 has all the resonance of August 4 1914. It marks the cut-off point between 'an Edwardian summer' of prosperity and tranquillity and the trench warfare of the credit crunch – the failed banks, the petrified markets, the property markets blown to pieces by a shortage of credit".

14 September 2007
British bank Northern Rock has borrowed large sums of money to fund mortgages for customers, and needs to pay off its debt by reselling (or "securitising") those mortgages in the international capital markets. But now that demand for securitised mortgages has fallen, Northern Rock faces a liquidity crisis and it needs a loan from the British government. This sparks fears that the bank will shortly go bankrupt – prompting customers to queue round the block to withdraw their