

CAUSES AND CONSEQUENCES OF THE FINANCIAL CRISIS OF 2007–2009

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By the early fall of 2009, the business contraction that began in December 2007 appeared to be ending,¹ but the outlook, remained hazy. Despite a number of “green shoots,” as Federal Reserve Chairman Ben Bernanke liked to put it,² the data were not decisive enough to declare the end of the contraction. Employment was still falling through September 2009.³ Although in October 2009 it certainly seemed that the economy was near the bottom, it was not safe to say that the crisis was history.⁴ Nevertheless, much is already known about the causes of the financial crisis and government responses to it, permitting a much more than speculative review. David Wessel has provided a superb blow-by-blow account of events during the crisis;⁵ there is no point in repeating that account here. Nevertheless, a brief chronology of the phases of the financial crisis should help to organize the discussion.

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1. NAT'L BUREAU OF ECON. RESEARCH, DETERMINATION OF THE DECEMBER 2007 PEAK IN ECONOMIC ACTIVITY (2008); BD. OF GOVERNORS OF THE FED. RESERVE SYS., SUMMARY OF COMMENTARY ON CURRENT ECONOMIC CONDITIONS BY FEDERAL RESERVE DISTRICT, OCTOBER 2009, at i–vi (2009) [hereinafter CURRENT CONDITIONS].

2. Shobhana Chandra & Matthew Benjamin, *Bernanke 'Green Shoots' May Signal False Spring Amid Job Losses*, BLOOMBERG.COM, Apr. 6, 2009, <http://www.bloomberg.com/apps/news?pid=20601103&sid=aja8WNMvKaxg>.

3. See Press Release, Bureau of Labor Statistics, U.S. Dep't of Labor, The Employment Situation—February 2010, at 1 (Mar. 5, 2010), available at <http://www.bls.gov/news.release/pdf/empst.pdf>.

4. See CURRENT CONDITIONS, *supra* note 1, at i.

5. DAVID WESSEL, IN FED WE TRUST: BEN BERNANKE'S WAR ON THE GREAT PANIC (2009).

I. CHRONOLOGY OF THE FINANCIAL CRISIS

The crisis broke in mid-August 2007, when the market suddenly cut off funding to several financial entities.⁶ The Federal Reserve's initial response in August was to reduce the discount rate—the interest rate the Fed charges on loans to banks—in the hope that banks could provide funds to firms cut off by the market.⁷

In mid-September 2007, the Fed began to cut its main policy interest rate, the federal funds rate. The rate had stood at 5.25% from June 2006 through August 2007.⁸ Although the Fed ordinarily changes its fed funds rate target in steps of twenty-five basis points, the first reduction in September was by fifty basis points.⁹ As financial strains grew and the economy gradually weakened, the Fed continued to reduce its fed funds target rate, reaching 3% in late January 2008.¹⁰

In mid-March 2008, financial strains intensified as the market cut off funding to Bear Stearns, a large New York investment bank.¹¹ To prevent Bear Stearns from failing, the Federal Reserve provided an emergency loan and assumed the credit risk on some Bear Stearns assets, which persuaded JP Morgan Chase to buy Bear Stearns.¹² A few days later, the Federal Reserve cut its federal funds rate target by seventy-five basis points, down to 2.25%.¹³ The Bear Stearns bailout marked the end of the first phase of the financial crisis.

6. CONG. RESEARCH SERV., FINANCIAL CRISIS? THE LIQUIDITY CRUNCH OF AUGUST 2007, at 9 (2007).

7. Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve Board Discount Rate Action (Aug. 17, 2007), available at <http://www.federalreserve.gov/newsevents/press/monetary/20070817a.htm>.

8. Fed. Reserve Bank of N.Y., Historical Changes of the Target Federal Funds and Discount Rates, <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> (last visited Mar. 24, 2010).

9. *Id.*

10. *Id.*

11. *Turmoil in U.S. Credit Markets: Examining the Recent Actions of Federal Financial Regulators: Hearing Before the S. Comm. on Banking, Hous. & Urban Affairs*, 110th Cong. (2008) (statement of Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys.).

12. Minutes of the Bd. of Governors of the Fed. Reserve Sys. (Mar. 16, 2008), available at <http://www.federalreserve.gov/newsevents/press/other/other20080627a2.pdf>.

13. Fed. Reserve Bank of N.Y., *supra* note 8.

In April, the Fed lowered its funds rate target another notch to 2%, which it held until September.¹⁴ During this second phase of the crisis, the economy was drifting downward, but not at an alarming pace. This phase ended with the Lehman crisis. The Fed did not bail out Lehman Brothers, an investment bank twice the size of Bear Stearns, and Lehman declared bankruptcy on September 15.¹⁵ Lehman's collapse marked the beginning of phase three of the crisis, when market strains went from serious to calamitous. The Fed bailed out American International Group (AIG), a huge insurance company, the day after Lehman failed.¹⁶ In October 2008, the Fed cut its target funds rate in two steps to 1% and further to near zero in December.¹⁷

The flight to safety was so intense that in November and December 2008 the market bid the yield on Treasury bills literally to zero on some days.¹⁸ Credit strains were severe and economic activity declined sharply. There is no particular date or event to mark the end of phase three of the crisis; markets gradually improved and the economy transitioned to phase four, in which credit conditions became more settled and credit began to flow again.

The financial crisis was worldwide, with European banks and markets as severely affected as those in the United States.¹⁹ Asian banks were stronger than U.S. and European banks, but Asia could not escape the effects of the crisis.²⁰ Output and employment fell around the world.

14. *Id.*

15. Press Release, Lehman Brothers, Lehman Brothers Holdings Inc. Announces It Intends to File Chapter 11 Bankruptcy Petition (Sept. 15, 2008), available at http://www.lehman.com/press/pdf_2008/091508_lbhi_chapter11_announce.pdf.

16. Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve Board, with full support of the Treasury Department, authorizes the Federal Reserve Bank of New York to lend up to \$85 billion to the American International Group (AIG) (Sept. 16, 2008), available at <http://www.federalreserve.gov/newsevents/press/other/20080916a.htm>.

17. Fed. Reserve Bank of N.Y., *supra* note 8.

18. John Waggoner, *Investors rush to earn nothing: 4-week T-bills sell like hotcakes at 0% interest*, USA TODAY, Dec. 10, 2008, at 1B.

19. *Output Slumps Across Europe*, EURONEWS, Oct. 12, 2008, <http://www.euronews.net/2008/12/10/output-slumps-across-europe/>.

20. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Address at the Federal Reserve Bank of San Francisco's Conference on Asia and the Global Financial Crisis: Asia and the Global Financial Crisis (Oct. 19, 2009), available at <http://www.federalreserve.gov/newsevents/speech/bernanke20091019a.htm>.

II. CONDITIONS LEADING TO THE CRISIS²¹

After the stock market peak in 2000 and to resist the 2001 recession, the Fed reduced its target federal funds rate in steps, eventually reaching 1% in 2003.²² With interest rates low and memories of the dot-com stock crash fresh, investors searched for higher yielding investments. They thought that they had found the perfect vehicle in collateralized debt obligations (CDOs) backed by subprime mortgages. The CDOs were structured obligations, with several tranches of differing risk characteristics. The senior tranche had first claim on the mortgage interest and principal paid by the subprime mortgages in the mortgage pool backing each CDO issue. The senior tranches were rated triple-A by the rating agencies.²³

As the decade proceeded, underwriting standards for subprime mortgages deteriorated. Mortgage brokers, who originated the subprime mortgages, lent to households without adequate income or assets to service the mortgages.²⁴ Income and asset documentation was weak or nonexistent.²⁵ Some of the mortgage borrowers were investors anticipating quick resale of the properties they purchased—the “flippers.”²⁶ Nevertheless, the market was so hungry for yield that investment banks found that they could easily package subprime mortgages into CDOs and peddle them to investors. Too many investors, unfortunately, took the triple-A ratings at face value and loaded their portfolios with the CDOs.

Citigroup is a good, but by no means unique, example. Citi had formed structured investment vehicles (SIVs) as off-balance-sheet entities to hold CDOs.²⁷ Because mortgages return principal gradually over a period of years, these CDOs were inherently long-term assets for the SIVs. The SIVs financed their purchases

21. For a more complete treatment, see William Poole, *The Credit Crunch of 2007–08: Lessons Private and Public*, 44 BUS. ECON. 38 (2009).

22. Fed. Reserve Bank of N.Y., *supra* note 8.

23. Roger Lowenstein, *Triple-A Failure*, N.Y. TIMES, Apr. 27, 2008 (Magazine), at 36.

24. Kurt Eggert, *The Great Collapse: How Securitization Caused the Subprime Meltdown*, 41 CONN. L. REV. 1257, 1276 (2009).

25. *Id.* at 1281–82.

26. *Id.* at 1288–89.

27. Arthur E. Wilmarth, Jr., *The Dark Side of Universal Banking: Financial Conglomerates and the Origins of the Subprime Financial Crisis*, 41 CONN. L. REV. 963, 1033 (2009).

mostly with borrowed funds, not equity.²⁸ Moreover, the borrowed funds were often in the form of short-maturity, asset-backed commercial paper.²⁹ Commercial paper is simply a corporate IOU, and the asset backing for each commercial paper issue was a package of CDOs. The commercial paper was short term, with maturities of thirty days, sixty days, or even overnight.

When the financial crisis broke in August 2007, commercial paper investors no longer rolled over their maturing paper.³⁰ They demanded to be paid in cash instead. In the case of the Citigroup SIVs, Citi could have let the SIVs default, but instead brought the assets onto its own balance sheet and repaid the maturing commercial paper.³¹ Doing so put great strain on Citigroup itself.

The federal government encouraged growth of the subprime mortgage market in an attempt to increase the percentage of families owning their own homes.³² Congress and the Bush Administration pushed the giant mortgage intermediaries, Fannie Mae and Freddie Mac, to accumulate subprime mortgages.³³ Previously, Fannie and Freddie had dealt only in prime mortgages with a maximum loan-to-value ratio of eighty percent.³⁴ The main business of these government-sponsored enterprises (GSEs) was to securitize prime mortgages into mortgage-backed securities, some of which they sold into the market and some of which they held in their own portfolios. Other federal policies also encouraged home ownership and growth of the mortgage market.

House construction led the way to faster economic growth after the 2001 recession.³⁵ Federal policies that encouraged

28. *Id.*

29. *Id.*

30. *Id.*

31. *Id.*; see also INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: CONTAINING SYSTEMIC RISKS AND RESTORING FINANCIAL SOUNDNESS 72 (2008) (explaining how consolidation of SIVs impacts a company's balance sheet).

32. Russell Roberts, *How Government Stoked the Mania*, WALL ST. J., Oct. 3, 2008, at A21.

33. *Id.*

34. U.S. GOV'T ACCOUNTABILITY OFFICE, FANNIE MAE AND FREDDIE MAC: ANALYSIS OF OPTIONS FOR REVISING THE HOUSING ENTERPRISES' LONG-TERM STRUCTURES 2 n.7 (2009).

35. Lawrence H. White, *Federal Reserve Policy and the Housing Bubble*, 29 CATO J. 115, 119 (2009).

housing and an increase in house prices fed the boom.³⁶ Mortgages, both prime and subprime, appeared to be reasonably safe investments because a borrower in distress could refinance or sell the property for enough to repay the mortgage. As house prices leveled off in 2006, and adjustable-rate mortgages taken out in the low interest rate environment of 2003–2004 began to adjust up, the music stopped.³⁷ Defaults began to rise, and in mid-2007, some firms had trouble financing their positions.³⁸

Analysts continue to argue about how much responsibility for the financial crisis belongs to the federal government. My view is that the federal government was a supporting actor but the responsibility rests primarily with the private sector. The government did not make or even directly encourage Bear Stearns to sponsor hedge funds investing in subprime CDOs—hedge funds that collapsed in July 2007. Citigroup was not compelled to form its SIVs holding subprime assets. It did so in part to take assets off its balance sheet to escape bank capital requirements.

Nor do I fault lax regulation. The fundamental problem was a failure of economic analysis in both the private sector and among regulatory agencies. Neither market participants nor federal agencies thought that a significant decline in the national average of house prices could occur. The failure to understand fully the risks of subprime mortgages and to foresee the decline in house prices might be an honest mistake of portfolio managers and federal authorities alike. Building portfolios with risky long-maturity assets financed with little equity capital and short-maturity liabilities, however, is an inexcusable mistake. The federal government pursued policies to encourage home ownership, but that fact cannot justify the portfolio policies that crashed. The private-sector managers of firms that built such portfolios bear the responsibility for building houses of cards.

36. Roberts, *supra* note 32.

37. See Press Release, S & P Indices, Home Prices Continue to Send Mixed Messages as 2009 Comes to a Close According to the S & P/Case-Shiller Home Price Indices (Feb. 23, 2010) (showing a graph depicting the fall in housing prices in 2006).

38. Randall S. Kroszner, Governor, Bd. of Governors of the Fed. Reserve Sys., Address at the Consumer Bankers Association 2007 Fair Lending Conference: The Challenges Facing Subprime Mortgage Borrowers (Nov. 5, 2007), available at <http://www.federalreserve.gov/newsevents/speech/kroszner20071105a.htm>.

III. THE FEDERAL GOVERNMENT'S MANAGEMENT OF THE CRISIS

Although the National Bureau of Economic Research did not officially identify the cycle peak in December 2007 until a year later,³⁹ after August 2007 the financial stress was obvious, as were signs of a weakening in the general economy. The Federal Reserve was the first responder to the crisis; fiscal policy responses came later.

To understand the Fed's management of the crisis, it is important to distinguish monetary policy from credit policy. Monetary policy involves central bank control over interest rates and the aggregate quantity of central bank funds in the system. The Fed's main monetary policy instrument is the federal funds interest rate, which is the rate on overnight loans between banks. Traditionally, the Fed controls this rate through purchases and sales of government securities in the open market.

Credit policy refers to the central bank's efforts to provide funds to particular borrowers or borrowing sectors. From the beginning, the Fed had a credit-oriented view as to how to respond to the crisis. Its first policy action in August 2007, as the crisis began, was not to reduce its fed funds target rate but instead to lower the discount rate, which is the rate the Fed charges on its loans to banks.⁴⁰ The discount rate had for some years been one hundred basis points above the fed funds target rate, but the Fed cut the margin to fifty basis points on August 17, 2007.⁴¹ Predictably, that action had little effect because most banks were still able to borrow readily in the market at the fed funds rate, which was fifty basis points cheaper.

Many in the Fed thought that "stigma" explained why banks used the discount window so sparingly.⁴² Banks, they thought, were unwilling to borrow from the window because doing so would be a sign to the market of financial weakness, even though the Fed maintained the confidentiality of the borrow-

39. See NAT'L BUREAU OF ECON. RESEARCH, *supra* note 1.

40. See Press Release, Bd. of Governors of the Fed. Reserve Sys., *supra* note 7.

41. Fed. Reserve Bank of N.Y., *supra* note 8.

42. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Address at the Federal Reserve Bank of Richmond 2009 Credit Markets Symposium: The Federal Reserve's Balance Sheet (Apr. 3, 2009), *available at* <http://www.federalreserve.gov/newsevents/speech/bernanke20090403a.htm>.

ing.⁴³ The Fed searched for another mechanism to inject more funds into the banking system and in December 2007 launched the Term Auction Facility, or TAF.⁴⁴ The TAF was a type of discount window borrowing in which the Fed auctioned off blocks of funds to the highest bidders.⁴⁵

The TAF did not, however, solve the basic problem that the banks and bank credit markets faced. As the crisis deepened, most banks were reporting large losses; discount window lending, including that through the TAF, was collateralized.⁴⁶ Banks retained the credit risk on the collateral. At the time of the Lehman failure in mid-September 2008, TAF credit outstanding was \$150 billion, but availability of TAF funds did nothing to make banks more willing to lend to Lehman or other risky borrowers.⁴⁷ Thus, the TAF did little to improve bank credit availability.

Nor did the TAF do much to bring down bank lending rates to creditworthy borrowers. A bank borrowing from the Fed, even at the attractive TAF auction rate, could choose either to make new loans with the funds or to let its other liabilities, such as certificates of deposit (CDs), run off. Thus, the marginal cost of making a new commercial loan was still the CD rate and not the TAF auction rate. Essentially, TAF provided a modest increase in bank earnings because the TAF borrowing rate was below a bank's cost of funds from other sources, such as from issuing CDs. The TAF did not solve the asset-liability duration mismatch problem banks faced. Banks held substantial longer-term loans financed with shorter-term funds. Even the ninety-day TAF funds did not address this problem. At best, the TAF was a stopgap measure that did not address the fundamentals of the financial crisis.

As TAF funds outstanding grew, and as the Fed invented other special facilities to ease credit strains in particular sectors of the market, the Fed did not increase the total funds it made

43. *Id.*

44. Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve and other central banks announce measures designed to address elevated pressures in short-term funding markets (Dec. 12, 2007), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20071212a.htm>.

45. *Id.*

46. *Id.*

47. Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve and other central banks announce further coordinated actions to expand significantly the capacity to provide U.S. dollar liquidity (Sept. 29, 2008), *available at* <http://www.federalreserve.gov/newsevents/press/monetary/20080929a.htm>.

available to the market. Just before the Lehman failure, total reserve bank credit was only 3.6% above the figure a year earlier, which did not evidence an expansionary monetary policy.⁴⁸ The Fed had reduced its fed funds target rate, but the reductions had barely kept pace with the decline in the demand for funds in the market. Although total reserve bank credit had grown by \$30 billion over the fifty-two weeks prior to mid-September 2008, the Fed's holdings of government securities had declined by \$300 billion.⁴⁹ During this phase of the crisis, the Fed in effect financed the Bear Stearns bailout, the TAF, and other special credit facilities by selling government securities from its portfolio.⁵⁰ The easier credit policy was not reinforced by an increase in the aggregate supply of funds to the market.

Whether the Fed should have pursued a more expansionary monetary policy before Lehman's collapse is not clear. In the summer of 2008, employment was not in a freefall and the enormous increase in energy prices to a peak in July raised valid inflation concerns.⁵¹ Fed monetary policy changed dramatically after the Lehman failure and the bailout of AIG. After Lehman, the Fed financed new credit extensions by printing new money. The Fed held its government securities portfolio roughly constant and allowed total reserve bank credit to explode from \$888 billion just before Lehman to \$2.25 trillion⁵² at the end of 2008.⁵³ Term auction credit rose to \$450 billion, and several other credit programs were expanded or newly invented.⁵⁴

48. See BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE H.4.1 FACTORS AFFECTING RESERVE BALANCES OF DEPOSITORY INSTITUTIONS AND CONDITION STATEMENT OF FEDERAL RESERVE BANKS, SEPTEMBER 11, 2008 (2008).

49. *Id.*

50. *See id.*

51. See Press Release, Bureau of Labor Statistics, *supra* note 3; see also *The Semi-annual Monetary Policy Report to the Congress: Hearing Before the S. Comm. on Banking, Hous. & Urban Affairs*, 110th Cong. (2008) (statement of Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys.).

52. This figure is based on the weekly average for the week ending December 31.

53. BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE H.4.1 FACTORS AFFECTING RESERVE BALANCES OF DEPOSITORY INSTITUTIONS AND CONDITION STATEMENT OF FEDERAL RESERVE BANKS, DECEMBER 29, 2008 (2008); BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE H.4.1 FACTORS AFFECTING RESERVE BALANCES OF DEPOSITORY INSTITUTIONS AND CONDITION STATEMENT OF FEDERAL RESERVE BANKS, SEPTEMBER 4, 2008 (2008).

54. FED. RESERVE BANK OF N.Y., DOMESTIC OPEN MARKET OPERATIONS DURING 2008, at 24 (2009).

The initial fiscal policy response to the crisis was the Economic Stimulus Act of 2008,⁵⁵ enacted in February, which provided tax rebates and business tax deductions to counter the recession that many thought might have begun.⁵⁶ The Congressional Budget Office (CBO) estimated that the legislation would increase the federal deficit by \$152 billion in 2008.⁵⁷ The deficit is an imperfect measure of the impact of fiscal policy, but for present purposes will serve as a useful measure of the size of the fiscal response. The CBO concluded that the legislation made a modest contribution, raising consumption in 2008, but that the impact on overall economic activity disappeared by the end of that year.⁵⁸ Thus, this stimulus bill made no lasting contribution to economic stability.

In February 2009, the new Obama Administration passed the American Recovery and Reinvestment Act of 2009.⁵⁹ This fiscal package was much larger than the one passed a year earlier. The CBO estimated the impact on the budget deficit to be an increase of \$185 billion in fiscal 2009, of \$399 billion in fiscal 2010, and a total of \$787 billion over the ten-year budget horizon of 2009 to 2019.⁶⁰ Economists will argue about the effectiveness of this legislation for years to come.

Both the 2008 and 2009 stimulus bills were attempts to temper the general economic downturn. Other fiscal actions were more directly aimed at the financial crisis. In July 2008, at the urging of Treasury Secretary Henry Paulson, Congress granted the Treasury authority to provide financial assistance to Fannie Mae and Freddie Mac.⁶¹ At the time, these two nominally private firms had more total obligations, on and off balance sheet, than the publically held Treasury debt. They were brought into

55. Pub. L. No. 110-185, 122 Stat. 613.

56. *Id.* §§ 101–103.

57. CONG. BUDGET OFFICE, COST ESTIMATE: H.R. 5140, ECONOMIC STIMULUS ACT OF 2008, at 1–2 (2008).

58. CONG. BUDGET OFFICE, DID THE 2008 TAX REBATES STIMULATE SHORT-TERM GROWTH? 1 (2009).

59. Pub. L. No. 111-5, 123 Stat. 115.

60. See Letter from Douglas W. Elmendorf, Dir., Cong. Budget Office, to Charles E. Grassley, Ranking Member, Comm. on Fin., U.S. Senate (Mar. 2, 2009).

61. Jeanne Sahadi, *Senate Passes Landmark Housing Bill*, CNNMONEY.COM, July 26, 2008, http://money.cnn.com/2008/07/26/news/economy/housing_bill_Senate/index.htm.

federal conservatorship uneventfully in early September, before a run on them could create a panic in the markets.⁶²

The Troubled Asset Relief Program⁶³ (TARP) was designed to deal directly with the so-called “toxic” subprime mortgage assets on banks’ books. The turmoil following the Lehman bankruptcy was so great that the Treasury and the Federal Reserve agreed that it was necessary to attack the toxic asset problem directly.⁶⁴ After considerable political wrangling, Congress passed the \$700 billion TARP bill. The original Treasury objective with TARP was to buy toxic assets from banks. The idea was subject to a fatal flaw that should have been obvious to the Treasury from the start: What price would the Treasury pay for toxic assets? If the Treasury paid what the assets were truly worth, the program would not serve to assist the banks; if Treasury overpaid, the result would be a taxpayer gift to the banks. After batting around several ideas, the Treasury abandoned the idea of buying toxic assets.⁶⁵

Instead, the Treasury used TARP funds to strengthen bank capital through purchases of senior preferred stock in the banks.⁶⁶ In essence, the Treasury took a semi-ownership position in banks without diluting common shareholders. By bolstering bank capital, the Treasury enabled banks to resume lending to the private sector, or at least reduced pressure on banks to contract their lending. By June 2009, Treasury capital purchases totaled \$199 billion, of which \$70 billion had been repaid. A total of 591 institutions were involved. In addition, TARP funds were used for a variety of other loans, including \$55 billion in assistance to automobile firms.⁶⁷

62. CONG. RESEARCH SERV., FANNIE MAE AND FREDDIE MAC IN CONSERVATORSHIP 1 (2008), available at <http://fpc.state.gov/documents/organization/110097.pdf>.

63. Emergency Economic Stabilization Act of 2009, Pub. L. No. 110-343, 122 Stat. 3765.

64. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Address at the National Association for Business Economics 50th Annual Meeting: Current Economic and Financial Conditions (Oct. 7, 2008), available at <http://www.federalreserve.gov/newsevents/speech/bernanke20081007a.htm>.

65. Henry M. Paulson, Jr., Secretary, U.S. Dep’t of the Treasury, Remarks on Financial Rescue Package and Economic Update (Nov. 12, 2008), available at <http://www.financialstability.gov/latest/hp1265.html>.

66. CONG. BUDGET OFFICE, THE TROUBLED ASSET RELIEF PROGRAM: REPORT ON TRANSACTIONS THROUGH JUNE 17, 2009, at 2 (2009).

67. *Id.*

IV. EVALUATION OF THE GOVERNMENT'S RESPONSE TO
THE FINANCIAL CRISIS

The Treasury and the Federal Reserve were slow to recognize that the problem was much more than liquidity. Markets were cutting off funding to banks and other financial firms because investors feared that the firms might be insolvent. Those fears were justified. Two Bear Stearns hedge funds had collapsed in July 2007, and a number of other entities were obviously and visibly in shaky financial condition.⁶⁸ There should have been an earlier recognition that house prices were going to decline, because prices were out of line with fundamentals. Thus, not only would subprime mortgages become increasingly troubled but so also would prime mortgages. Failure to recognize the implications of declining house prices was not a regulatory failure but a basic failure of economic analysis.⁶⁹ Regulators could enforce capital standards on banks and could monitor bank risk management policies. As ordinarily conceived, the economic analysis of house prices went beyond what bank supervisors and examiners were expected to do.

The Treasury and the Federal Reserve can also be faulted for failing to engage in adequate contingency planning after the Bear Stearns bailout. It is hard to read Wessel's account any other way.⁷⁰ The Treasury and the Fed did not seek funding from Congress because they assumed that Congress would not be responsive.⁷¹ They did not try to make the public case, however. After Lehman failed, they had no choice, and Congress did respond with prompt passage of the TARP legislation. In contrast, the risks of failing to deal with Fannie Mae and Freddie Mac were well understood and the two firms were taken into conservatorship without incident.⁷²

68. WESSEL, *supra* note 5, at 93.

69. *See id.* (noting that the Fed's main policy concern as of July 2007 was the risk of rising inflation and not the housing bubble).

70. *See id.* at 178–80.

71. *Id.* at 179 (“Paulson and Bernanke concluded that there wasn’t any point in asking Congress—unless the crisis intensified to the point where there were no other options.”).

72. *Id.* at 186–87.

The Treasury and the Federal Reserve have not made a strong case for financial reform.⁷³ Large banks have become larger; the problem of too big to fail (TBTF) is much more serious. Baker and McArthur estimate that the public subsidy to the big banks, because of the market's assumption that any large bank in trouble will be bailed out, runs somewhere between \$6 billion and \$34 billion per year.⁷⁴ The issue is not primarily the subsidy arising from the fact that big banks can borrow more cheaply than can small banks.⁷⁵ Instead, the subsidy permits the big banks to grow even bigger, increasing the risk to the financial sector if (or when) they get into trouble again. Moreover, cheap financing encourages the big banks to take risks they might not otherwise take; with implied federal backing, banks need not fear that the market will cut off financing.

More than eighteen months after the Bear Stearns bailout, there seems to be no sense of urgency in addressing the TBTF problem and in instituting reforms to make the financial system more robust. This situation reflects a failure of political leadership in Washington. Although banks are currently more cautious than they were before the financial crisis, underlying conditions and incentives have not changed. As the economy improves and memories of the financial crisis fade, there is real danger that a new financial crisis will be taking shape.

V. LEGAL AND GOVERNANCE ISSUES

David Wessel is generally very complimentary of the policies pursued by the Federal Reserve. His introductory chapter to *In Fed We Trust* is titled "Whatever It Takes,"⁷⁶ and he repeats that phrase frequently in his commentary on Fed creativity in inventing new credit facilities to deal with the crisis. It will take

73. The Senate is now considering a reform bill, and the House passed a bill in December 2009. Sewell Chan, *Reform Bill Adds Layers of Oversight*, N.Y. TIMES, Mar. 16, 2010, at B1.

74. See DEAN BAKER & TRAVIS MCARTHUR, CTR. FOR ECON. & POL'Y RESEARCH, THE VALUE OF THE "TOO BIG TO FAIL" BIG BANK SUBSIDY 2 (2009).

75. *Id.* (arguing that the mentioned subsidy arises precisely from the fact that banks enjoying protection under the "too big to fail" concept are able to borrow more cheaply).

76. WESSEL, *supra* note 5, at 1.

some years to accumulate research findings as to just how effective the Fed's credit facilities were.⁷⁷

A legal issue, or governance issue, surrounds the Federal Reserve's use of Section 13(3)⁷⁸ of the Federal Reserve Act.⁷⁹ This Section came into the Act as an amendment in 1932.⁸⁰ Under the Federal Reserve Act, the basic power of the Fed is to make loans to banks and to conduct open market operations in obligations issued or guaranteed by the federal government. Section 13(3) provides emergency authority for the Federal Reserve to lend to nonbanks when such lending is deemed necessary in "unusual and exigent circumstances."⁸¹

The Federal Reserve invoked Section 13(3) as its legal justification for several different actions. The Fed appealed to Section 13(3) as the legal basis for the emergency funds to bail out Bear Stearns and AIG. The same justification was offered, however, for some other special credit facilities, including the commercial paper funding facility, illustrating the issues surrounding such justifications in general. The amendment was inserted late in the legislative process and was not subject to committee or floor debate. There is case law, however, indicating what "un-

77. See William Poole, *The Bernanke Question*, CATO.ORG, July 28, 2009, http://www.cato.org/pub_display.php?pub_id=10388.

78. David Fettig provides useful background information on Section 13(3). See David Fettig, *The History of a Powerful Paragraph: Section 13(3) enacted Fed business loans 76 years ago*, REGION, June 2008, at 33; see also David Fettig, *Lender of More Than Last Resort: Recalling Section 13(b) and the years when the Federal Reserve opened its discount window to business*, REGION, Dec. 2002, at 14.

79. The Federal Reserve Act of 1913, Pub L. No. 63-43, ch. 6, § 13, 38 Stat. 251, 263 (codified as amended at 12 U.S.C. § 343 (2006)).

80. Pub. L. No. 72-302, ch. 520, § 210, 47 Stat. 709, 715 (codified at 12 U.S.C. § 343 (2006)).

81. 12 U.S.C. § 343 (2006) ("In unusual and exigent circumstances, the Board of Governors of the Federal Reserve System, by the affirmative vote of not less than five members, may authorize any Federal Reserve bank, during such periods as the said board may determine, at rates established in accordance with the provisions of section 357 of this title, to discount for any individual, partnership, or corporation, notes, drafts, and bills of exchange when such notes, drafts, and bills of exchange are indorsed or otherwise secured to the satisfaction of the Federal reserve bank: *Provided*, That before discounting any such note, draft, or bill of exchange for an individual or a partnership or corporation the Federal reserve bank shall obtain evidence that such individual, partnership, or corporation is unable to secure adequate credit accommodations from other banking institutions. All such discounts for individuals, partnerships, or corporations shall be subject to such limitations, restrictions, and regulations as the Board of Governors of the Federal Reserve System may prescribe.").

usual and exigent circumstances” most likely meant in 1932. Contemporaneous courts interpreting similar language in other statutes focused on the suddenness and unexpectedness of calamitous events and whether immediate action was required to avoid disaster to a corporation.⁸² In the context of the Federal Reserve Act, therefore, the term “unusual and exigent circumstances” likely contemplates unforeseen financial circumstances that require immediate action or remedy, particularly when necessary to ensure the survival of a business entity.

Furthermore, although the third edition of *Black’s Law Dictionary*, published in 1933, did not have a definition of “unusual and exigent circumstances,” it did have a definition of exigency that corroborates the case law’s focus on imminence: “[d]emand, want, need, imperativeness; emergency, something arising suddenly out of the current of events; any event or occasional combination of circumstances, calling for immediate action or remedy; a pressing necessity; a sudden and unexpected happening or an unforeseen occurrence or condition.”⁸³

Finally, one relevant piece of legislative history concerns Section 11(r) of the Federal Reserve Act,⁸⁴ which permits the Board to utilize its 13(3) powers in situations where there are fewer than five members present.⁸⁵ This provision was part of a larger bill aimed at providing insurance in the event of terrorist attacks. One can thus assume the reason for it was so that the Board could take immediate action in response to a financial crisis as exigent as one brought on by a terrorist attack. Congress clearly had such an extreme exigency in mind because it provided that even a delay to contact other Board members by phone “or other electronic means” would be too long.⁸⁶

82. See *Good Roads Mach. Co. of New Eng. v. United States*, 19 F. Supp. 652, 653 (D. Mass. 1937); *Carson v. Allegany Window Glass Co.*, 189 F. 791, 796 (D. Del. 1911).

83. BLACK’S LAW DICTIONARY 721 (3rd ed. 1933).

84. Pub. L. No. 107-297, tit. III, § 301, 116 Stat. 2322, 2340 (2002) (codified at 12 U.S.C. § 248(r) (2006)).

85. 12 U.S.C. § 248(r).

86. 12 U.S.C. § 248(r)(2)(A)(ii)(III) (requiring before the Board exercises its 13(3) powers that it determine that exigent circumstances existed, that the borrower is unable to secure credit through other means, that action is necessary to prevent “serious harm to the economy or the stability” of the U.S. financial system, that they have been unable to contact the other board members by any means available, and that waiting any further to do so would be impossible).

The Fed's reliance on Section 13(3) is fully justified in the context of decisions to bail out Bear Stearns and AIG, whatever the merits of those bailouts, for those situations were clearly emergencies. The case for relying on Section 13(3) to justify the program to buy commercial paper, however, is much less clear. The Fed announced its Commercial Paper Funding Facility (CPFF) on October 7, 2008.⁸⁷ The first loans were made about three weeks later, on October 27. By year end, this program had an outstanding balance of \$332 billion. The program reached a peak of \$350 billion in mid-January 2009.⁸⁸

The launch of CPFF did not reflect a weekend emergency. The financial crisis called for quick and decisive action, but not immediate action decided in a matter of hours. If there was an emergency at all, it was because of congressional unwillingness to act, not because Congress did not have time to act. If Congress was unwilling to act because of its concern about the politics of a program to provide credit to large corporations, a federal agency should not make its own decision on what is necessary, committing hundreds of billions of dollars in taxpayer resources.

One possible view is that the Fed found itself in an unfortunate position, but that it did what it had to do given October's financial turmoil. That seems to be Wessel's view: "whatever it takes."⁸⁹ The Fed should have made a strong public case that Congress had to act to provide the needed credit. There would have been a public debate about the wisdom of the proposed program. We know nothing of the internal debates in the Fed about the CPFF. Essentially, the Fed simply asserted that the program was necessary to reduce financial turmoil. The Federal Reserve has never explained, either in October 2008 or since, why assistance to the particular borrowers eligible for the CPFF was essential to dealing with the financial crisis, whereas assistance to other potential borrowers was not essential.

If Congress had acted, the CPFF would have been administered by the Treasury, instead of by the Fed, and financed by new Treasury debt, instead of by monetary expansion. As with other federal credit programs, eligibility, reporting require-

87. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Oct. 7, 2008), available at <http://www.federalreserve.gov/newsevents/press/monetary/20081007c.htm>.

88. WESSEL, *supra* note 5, at 228–29.

89. *Id.* at 229.

ments, disclosure requirements, the interest rate, and other credit terms would have been determined by legislation, or delegated to the Treasury. Government program provisions are inherently political decisions. The Fed should not have been making these decisions, because doing so would inevitably draw it into political disputes, such as those over disclosure.

The Federal Reserve's program to buy mortgage-backed securities (MBSs) raises similar governance issues. The Fed's program is to buy a total of \$1.25 trillion of MBSs by the end of the first quarter of 2010.⁹⁰ Like the CPFF, this program was not a weekend emergency effort, but rather one that Congress could have authorized. The Fed initially announced this program in a press release on November 25, 2008.⁹¹ The first appearance of MBSs on the Fed's balance sheet was not until the H.4.1 release for January 15, 2009.⁹²

The time between announcement and execution of the Fed's MBS purchase program is comparable to the gap between passage of the TARP legislation in 2008 and the stimulus bill in February 2009. Congress could have debated an MBS purchase program and decided whether the benefits of the program outweighed the additional government debt required to finance it, rather than letting an unelected agency initiate the program.

One element of such a congressional debate might logically have been whether it would be a good idea to expand the amount of Treasury debt outstanding by \$1.25 trillion to finance this program. Given the enormous scale of the budget deficit, that would have been a valid issue to debate. Instead, the Federal Reserve is financing the program by creating new money. Another item that might have been debated in Congress would have been whether a total outlay of \$1.25 trillion should all go for purchasing MBSs. Some might have argued that some of the funds should instead have been used to expand loans to small businesses. Or, perhaps some should have

90. *Id.* at 269.

91. Press Release, Bd. of Governors of the Fed. Reserve Sys. (Nov. 25, 2008), available at <http://www.federalreserve.gov/newsevents/press/monetary/20081125b.htm>.

92. BD. OF GOVERNORS OF THE FED. RESERVE SYS., FEDERAL RESERVE STATISTICAL RELEASE H.4.1 FACTORS AFFECTING RESERVE BALANCES OF DEPOSITORY INSTITUTIONS AND CONDITION STATEMENT OF FEDERAL RESERVE BANKS, JANUARY 15, 2009, tbl.1 (2009).

been used to buy bonds from hard-pressed state governments, or to expand mortgage relief for borrowers near foreclosure.

The point is not to argue here the merits of alternative uses of \$1.25 trillion but to emphasize that decisions on credit programs have historically been left to Congress. Once the financial crisis is fully resolved, Congress should take up this issue. What are the appropriate constraints on the Federal Reserve? The issue may well be on the congressional agenda at some point. Wessel flags the issue in his first chapter:

Barney Frank, the sharp-tongued sharp mind who chaired the House Financial Services Committee, captured the issue clearly. Labeling Bernanke “the loan arranger” with his sidekick, Paulson, Frank said, “I think highly of Mr. Bernanke and Mr. Paulson. I think they are doing well, although I think it’s been inappropriate in a democracy to have them in this position where they were sort of doing this stuff unilaterally. They had no choice. And it’s not to their discredit, but . . . this notion that you wait until there’s a terrible situation and you just hope that the chairman of the Federal Reserve would pop up with the secretary of the Treasury and rescue you. It’s not the way in a democracy . . . you should be doing this. . . .”

“No one in a democracy, unelected, should have \$800 billion to spend as he sees fit,” he said.⁹³

Economists almost universally believe that there should not be political interference with the central bank’s monetary policy decisions. A legacy of the Federal Reserve’s expansive credit programs may be that Congress will enact constraints on the Federal Reserve that affect its monetary policy decisions as well as its credit policies. Many will find the position stated by Barney Frank persuasive; whether they will be able to separate monetary from credit policies is less clear.

VI. REFORMS TO ENHANCE FINANCIAL STABILITY

A distressing feature of the financial crisis is that such events have happened so often before. Charles Kindleberger’s classic book, *Manias, Panics and Crashes: A History of Financial Crises*, went through four editions and has been updated since his

93. WESSEL, *supra* note 5, at 7.

death to a fifth edition.⁹⁴ A more recent book by Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*,⁹⁵ adds a great deal of data to the Kindleberger history.

The cost of the financial crisis is immense. One number is sufficient to indicate the scale of the costs in the United States: The crisis is responsible for reducing employment by eight million jobs and perhaps more depending on exactly when the recovery begins.⁹⁶ Large banks that get into financial trouble not only affect their own shareholders and employees, but also firms and employment across the country and around the world.

The most fundamental reform is to force banks large enough to create a systemic risk to the economy to hold more capital as a cushion to protect the deposit insurance fund and to create more market discipline in their management. Economists have studied this issue for years; the most promising approach is that banks should be required to issue a substantial block of long-term subordinated debt.⁹⁷

To illustrate the proposal, suppose every firm with a bank charter was required to maintain a block of ten-year subordinated notes equal to ten percent of its total liabilities. Every year, the bank would have to roll over the maturing notes; if the market were unreceptive, the bank would have to shrink its total assets by ten percent to live within its remaining block of outstanding subordinated notes. Stability of the banking system and market discipline might be further enhanced by providing that a bank could conserve cash that would otherwise be used to redeem maturing sub debt by converting the sub debt to equity at a predetermined ratio.

Market discipline requires that some creditors be at risk. Financial stability, however, requires that creditors who fear a loss must not be able to run. A key function of a bank is to offer

94. CHARLES P. KINDLEBERGER & ROBERT Z. ALIBER, *MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES* (5th ed. 2005).

95. CARMEN M. REINHART & KENNETH S. ROGOFF, *THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY* (2009).

96. Floyd Norris, *The Jobs News Get Worse*, N.Y. TIMES, Oct. 4, 2009, at WK3.

97. See BD. OF GOVERNORS OF THE FED. RESERVE SYS. STUDY GROUP ON SUBORDINATED NOTES & DEBENTURES, *USING SUBORDINATED DEBT AS AN INSTRUMENT OF MARKET DISCIPLINE* 172 (1999) (analyzing thoroughly the subordinated debt proposal).

demand deposits and other short-dated time deposits or deposit-like obligations. The only way to assure financial stability and to assure that some creditors be at risk is to require long-term debt in the capital structure. The proposal also has the advantage that, when a bank is forced to contract because it cannot roll over maturing sub debt, the bank itself manages the restructuring. It is best to avoid regulatory discretion because a bank in trouble may be able to appeal to Congress to override regulators' decisions.

Another useful reform would be to encourage a less leveraged economy. One way to do so would be to phase out the deductibility of interest on all income tax returns. At present, the deductibility of interest encourages debt over equity. A quick calculation indicates that phasing out the deductibility of interest on corporate returns and reducing the statutory corporate tax rate from its current thirty-five percent to fifteen percent would be roughly revenue neutral.

VII. REFLECTIONS ON FREE MARKETS

The financial crisis is a sobering experience for a Chicago-school advocate of the market. The federal government was not without blame for the crisis, but the basic problem was that far too many financial firms pursued shortsighted portfolio policies. Banking 101 says that it is dangerous to design a portfolio with long-duration risky assets financed with short-duration liabilities and thin capital. That is what one financial firm after another did, and the government is not to blame for those misguided private-sector policies.

Throughout history, financial crises occur when liquidity dries up, usually because solvency concerns arise when risky assets decline in value. Why is it that the market seems to make the same basic mistake repeatedly? It is terribly important that we figure out the answer to this question, because we also know that markets and not government-run economies generate economic growth. This financial crisis was costly; if we cannot figure out how to make market economies more stable, we risk growing government involvement, which we can be certain will make economies grow more slowly.

My tentative conclusion is that market participants systematically underestimate the probability of extreme events. They rely on instincts described by the normal distribution and by

formal models based on normality. Yet, there is an enormous amount of evidence that the probability of extreme events out in the tails of the probability distribution is much higher than indicated by the normal distribution—the fat tails problem.⁹⁸

If this observation is correct, then an appropriate function of government is to create incentives that offset the market's underestimate of tail probabilities. For large banks, the issue is one of externalities. A large bank failure has costly effects on many third parties. Eliminating the deductibility of interest on tax returns would help to control the externality as would a stiff subordinated debt requirement for banks.

In reflecting on the causes and consequences of this financial crisis, it is a mistake to think of the subprime mortgage fiasco as a unique cause that will not recur. It is indeed unlikely that the subprime mortgage market itself will again create a systemic risk, but some other new and creative market probably will. The essence of a dynamic capital market is that it searches for new opportunities and feeds capital to new ventures. Some of the new ventures turn out to be busts. What ought not happen is that the busts shake the entire economy because they are financed by banks in too risky a fashion. Federal policy should require that banks hold a larger capital cushion against the inevitable busts. It is most unfortunate that financial reform is not yet a consequence of this financial crisis.

98. See Benoit Mandelbrot, *The Variation of Certain Speculative Prices*, 36 J. BUS. 394 (1963).