Monetary Policy Tools in an Environment of Low Interest Rates

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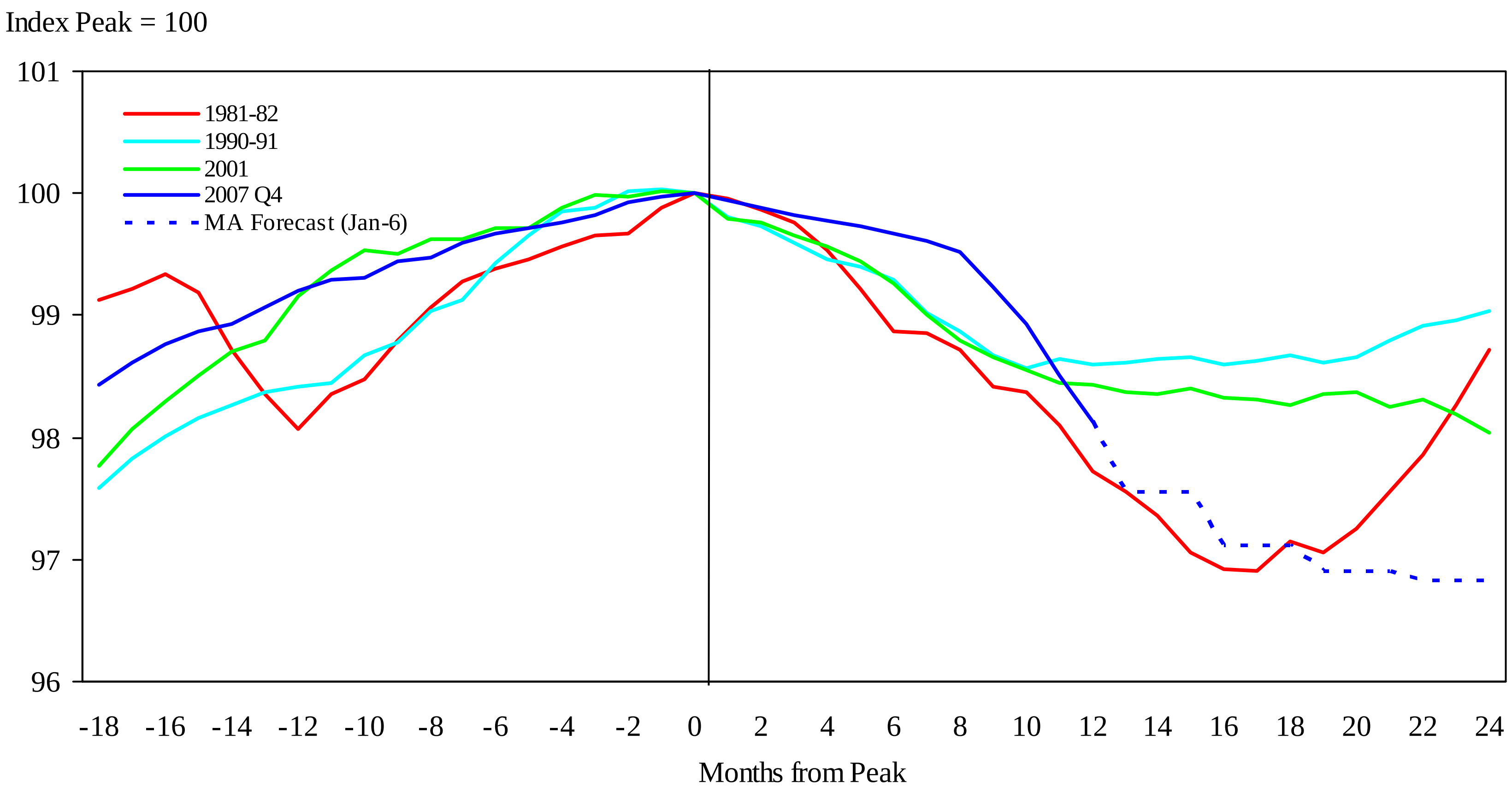
The Economy Today

- A sharp recession.
  - Declining output during 2008 Q4.
  - Further declines likely in 2009 first half.
  - Substantial job losses.

Nonfarm Payroll Employment Around Business Cycle Peaks

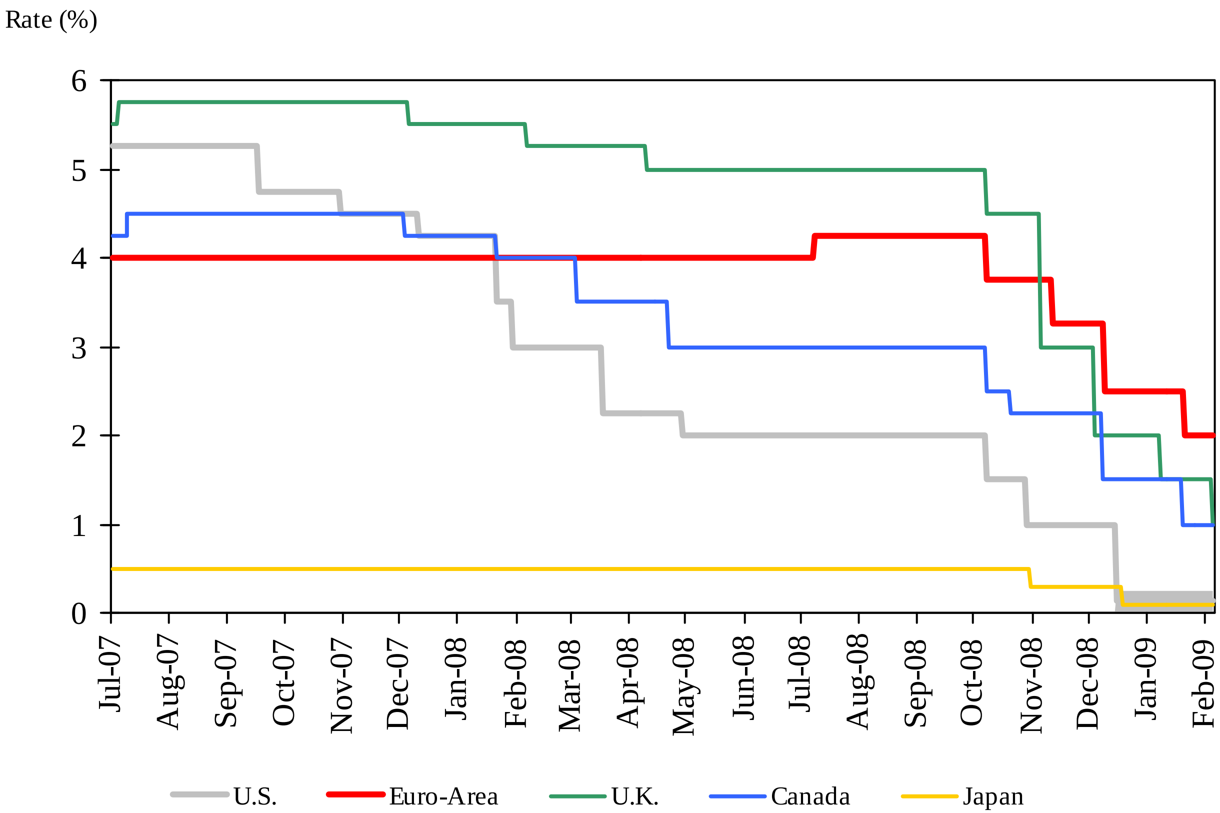


The Economy Today

- Important aspects.
  - Worldwide downturn.
  - Ongoing problems in financial markets.
  - Zero nominal interest rates.

World Policy Rates

(Daily data as of Feb. 5, 2009)



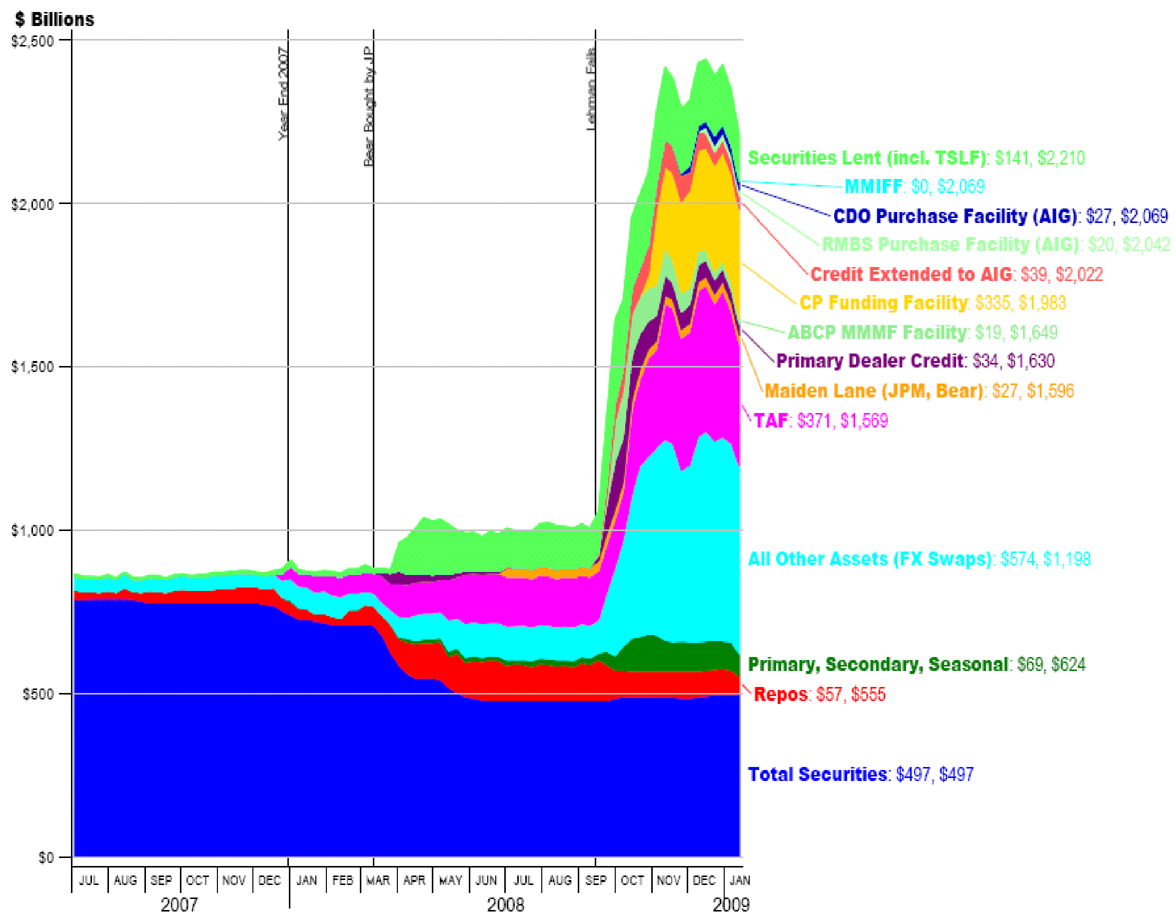
Sources: Federal Reserve Board, ECB, Bank of England, Bank of Canada, Bank of Japan.

Monetary Policy Today

- Zero nominal interest rate policy.
  - Adopted during December 2008.
  - Takes nominal interest rate movements off the table for now.
  - Interest rates moving lower worldwide.
  - Fiscal policy is active.
- Alternative policies for the Fed.
  - Liquidity programs.
  - Announcements to keep rates low for some time.
  - Open market operations in agency MBS.
  - Extraordinary expansion of the monetary base.

Federal Reserve Credit

Component Size and Cumulative total. Weekly, 7/4/2007 to 1/14/ 2009



Source: Federal Reserve.

Main topics for today

- Conventional versus unconventional monetary policies.
- Ongoing financial market turmoil.
- Disinflation as a problem.
- Balance sheet expansion as a problem.

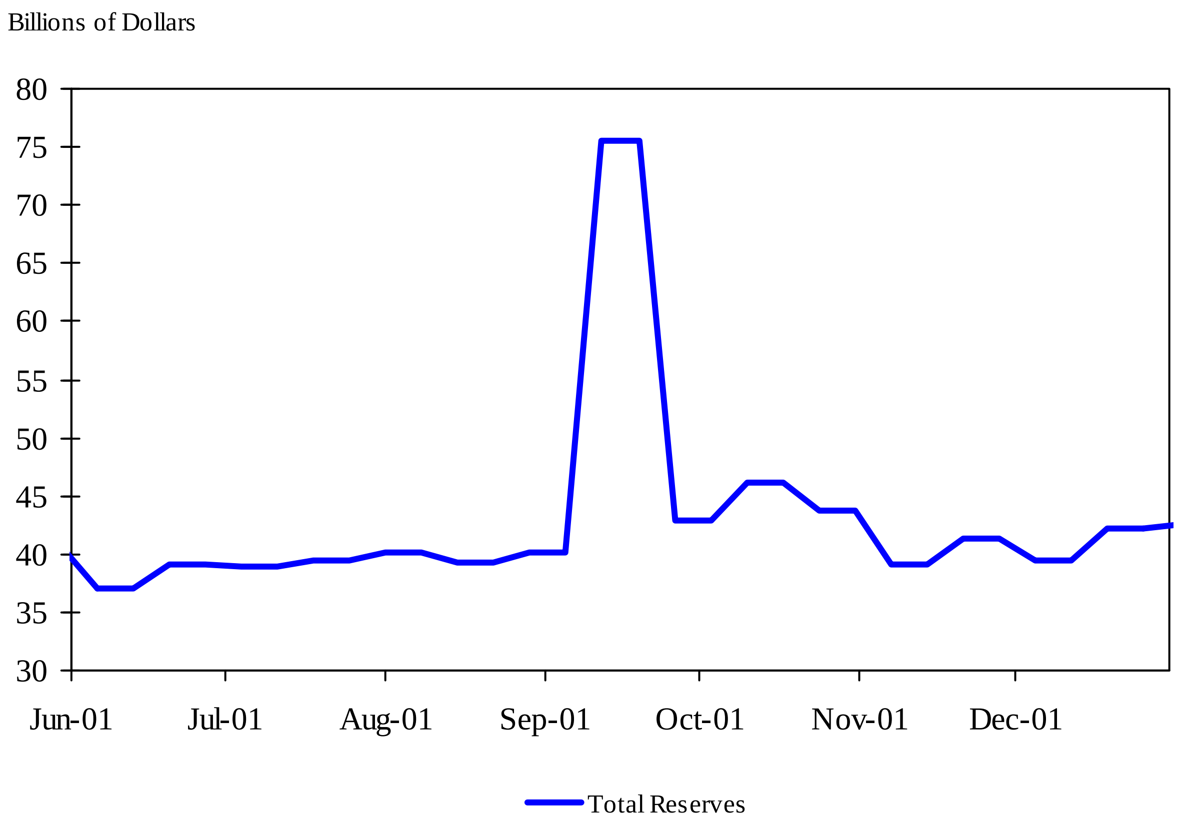
Conventional monetary policy

- Usually defined in terms of nominal interest rates.
- Private sector completely accustomed to thinking in these terms.
- This needs to change.
  - Normal times: Nominal interest rate targeting works well.
  - Exceptional times like today: Ability to signal to the private sector via nominal interest rate movements is lost.
  - Medium-run expectations for inflation can begin to drift.
  - No natural Fed move to make to head off inflation which is “too low.”

Conventional policy, part two

- Times of crisis and lender of last resort.
  - Central Banks often flood the banking system with reserves in times of crisis.
  - Once the crisis passes, the action is reversed.
  - The inflationary consequences of this type of action are minimal.
  - 9/11 was a great example.

Reserves of Depository Institutions around September 11, 2001 (Weekly data)

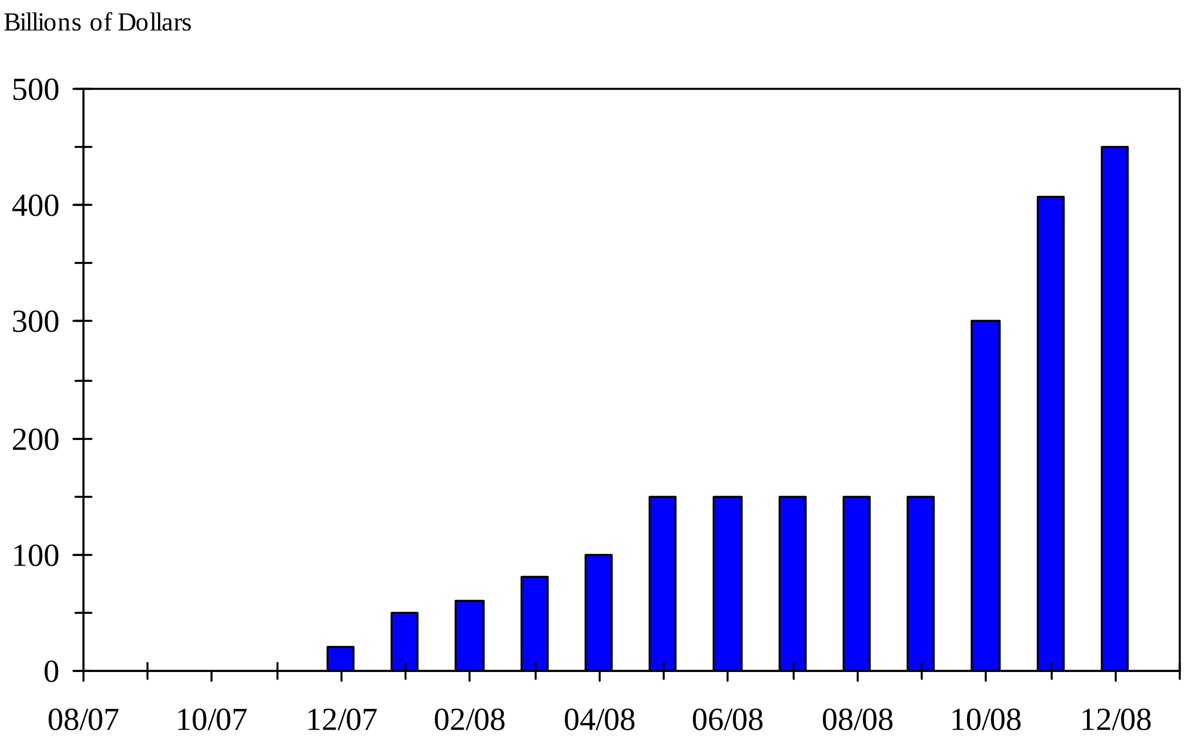


Source: Federal Reserve Board.

Innovative, unconventional policies

- The current financial crisis began in earnest in August 2007.
- The Fed continued to target nominal interest rates as usual during the first year of the crisis.
- The Fed also introduced new lending programs, such as the TAF, intended to reduce stigma and encourage bank borrowing from the Fed.
- Many other programs followed.

Term Auction Facility Credit



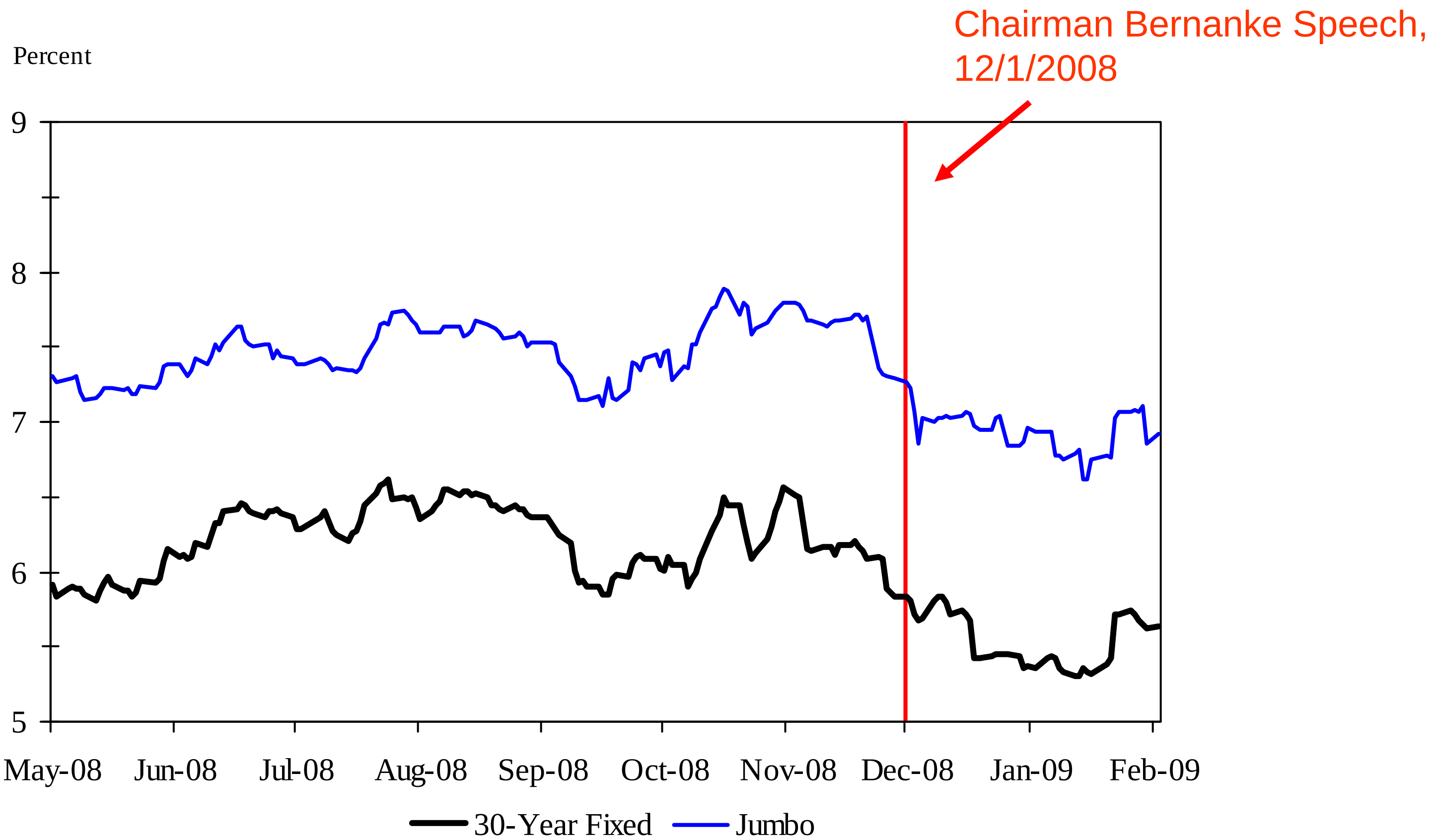
Source: Federal Reserve Board.

Unconventional policies, part two

- Beginning in September 2008, financial market turmoil intensified.
  - Part of the Fed's response was to flood the banking system with reserves.
  - This part is not so unconventional, as it is the normal central bank response to severe distress.
  - The scale dwarfs events like 9/11.
  - The time scale of the crisis is also much longer than normal.
- Meanwhile, with short-term rates at zero, the FOMC turned to alternative assets for open market operations.
  - In particular, agency MBS for $500 billion.
  - The agency part also not so unconventional.

Mortgage Rates

(Daily data)



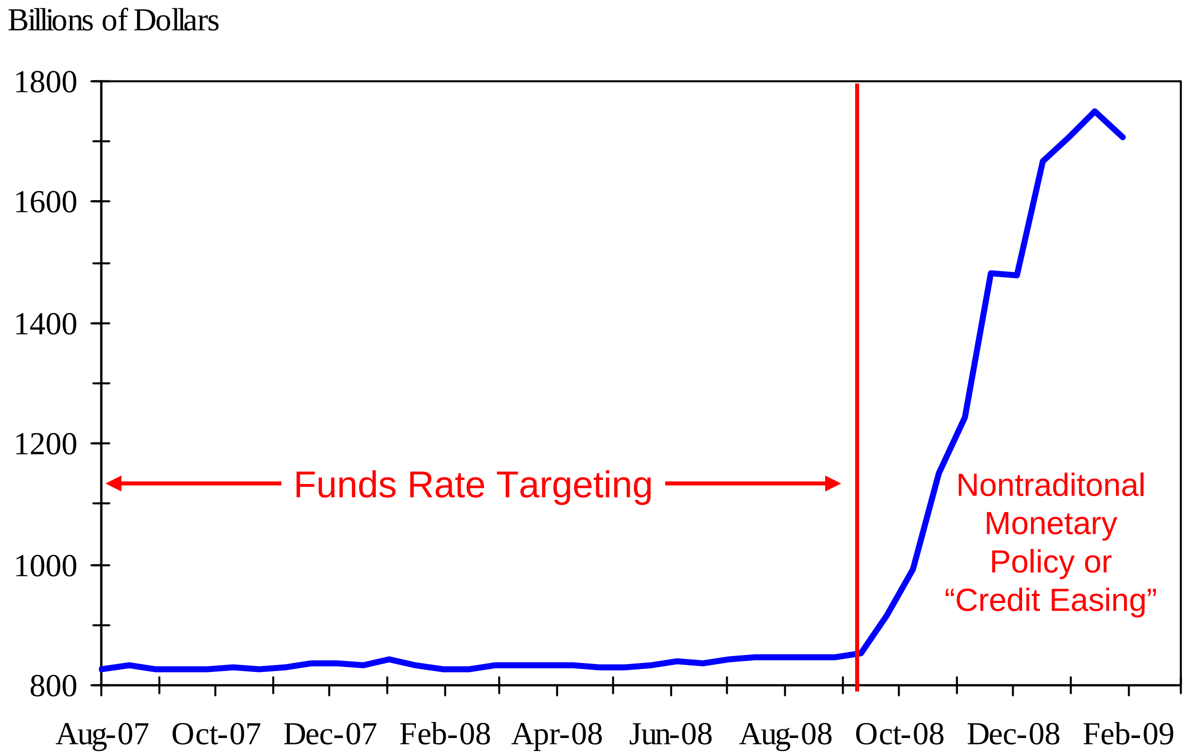
Source: Wall Street Journal and Federal Reserve Board.

The Risk of Inflation

- The monetary base has increased dramatically in the U.S. since September 2008.
  - Deficit spending is increasing dramatically.
  - These would normally be considered inflationary developments – medium term.
  - How to stop this?

St. Louis Source Base

(Weekly data as of 1/28/2009)



Source: Federal Reserve Bank of St. Louis, FRED

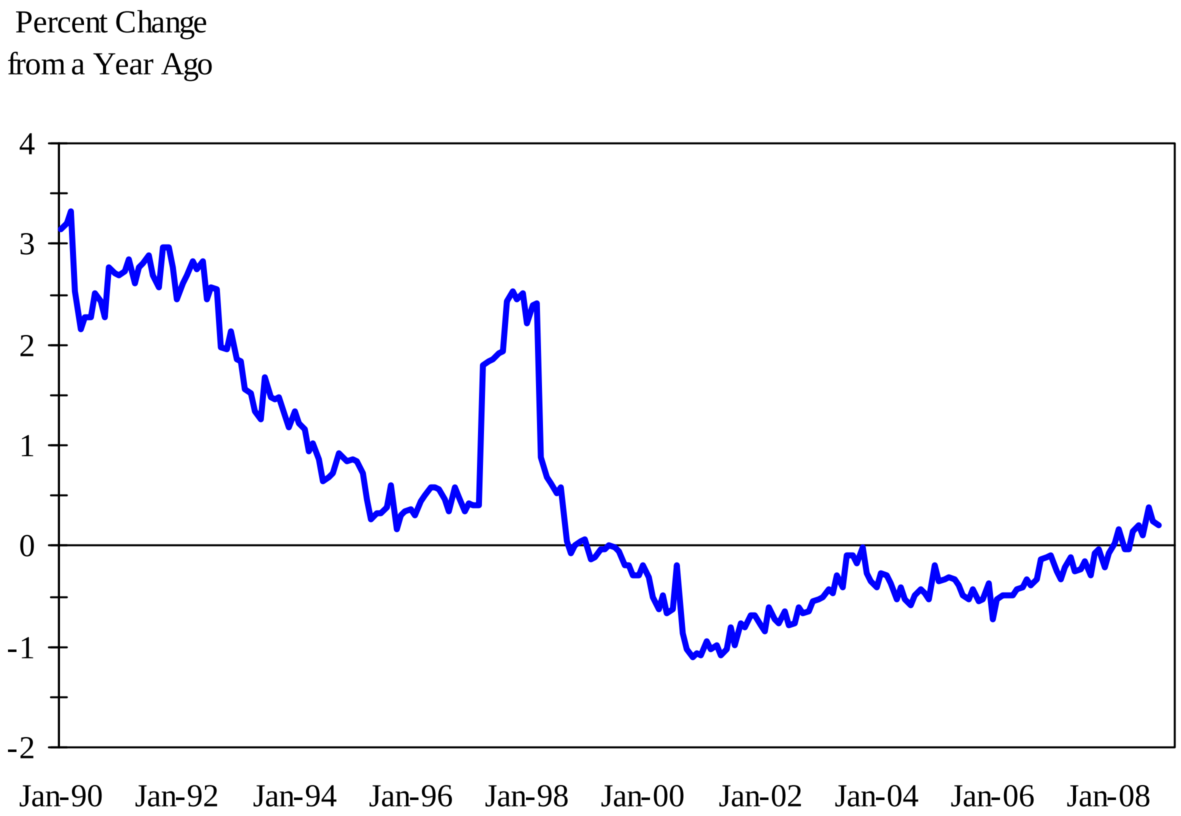
The Risk of Inflation: How to stop this?

- Reversibility.
  - Many of the newly introduced programs are temporary.
  - It seems the reserve build up could be reversed quickly and easily.
- Questions:
  - “Crisis” as a short event?
  - Criteria? What does normal look like, given that some segments of financial markets will not return?
  - Scale of the programs is large. A problem?
- Another idea: Set an inflation target.

The Risk of Deflation

- An inflation target might also help prevent deflation.
- The Japanese experience has been unpleasant.
  - Clear problems in their banking sector in the 1990s, not unlike the U.S. today.
  - Deflation in year-over-year core numbers for much of the time since the mid-1990s.
- Why worry about deflation?
  - Nominal contracts, especially in housing.
  - Unexpected deflation would worsen the situation.

The Japanese Experience:
Consumer Price Index Less Food and Energy

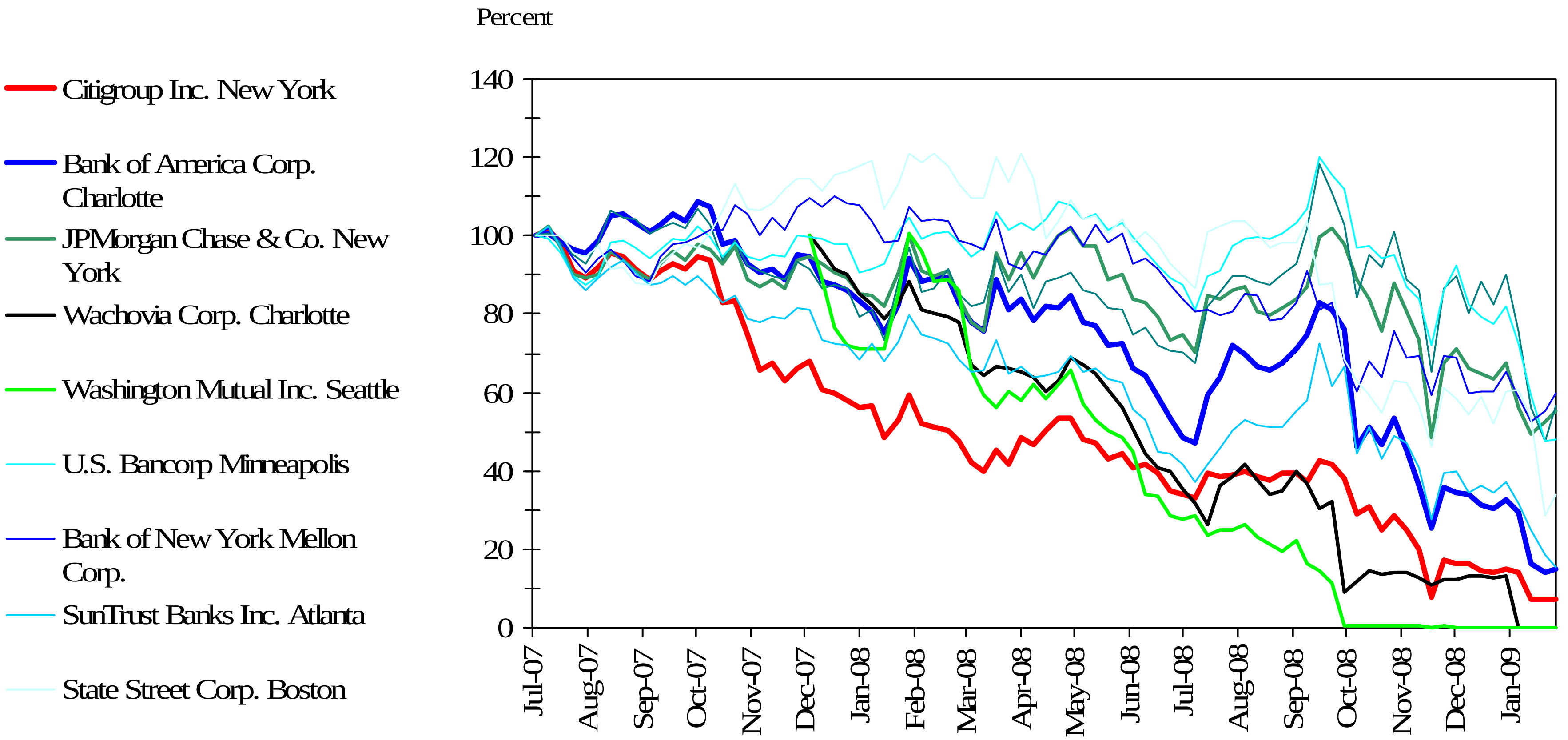


Source: Organization for Economic Cooperation and Development

Ongoing financial market turmoil

- Financial market turmoil looks set to continue into 2009.
- Sustained growth probably cannot return until financial markets stabilize.
- Time may not be a healer.
  - The information problems permeating markets do not naturally go away.
- Sharp recession has contributed to a new round of losses.
- Information problems need to be addressed directly.

Weekly Stock Prices of 10 Large US Banks



Financial market oversight

- Regulatory reform in the wake of this crisis is a global issue.
  - It will take time to design a reform that has a chance of working.
  - Large financial firms will have incentives to avoid rules by locating elsewhere.
- Parts of the regulatory system work well today.
  - The depression-era smaller bank panic has not occurred.
  - The combination of deposit insurance and prudential regulation has worked well in this sense.

Financial market oversight, continued

- Non-bank financials turned out to be susceptible to "bank runs."
  - Short-term, collateralized creditors ran on large investment banks.
  - This problem is not easy to fix: "deposit insurance plus regulation" does not make sense.
- Access to the discount window should be tied to Fed regulation.
  - Information flow is critical for responsible Fed lending.
  - Information flow is also critical for informed monetary policy.

Conclusions

- A time of very fluid, volatile expectations.
  - We know expectations are a major factor in macroeconomic performance.
- The Fed is pursuing a set of less conventional policies.
  - The quantitative effects are more uncertain than normal.
  - The zero nominal interest rate takes away the Fed's ability to signal.
  - But the less conventional policies are every bit as powerful.
- Optimal financial market oversight is a difficult problem.
  - It will not be easy to design a reform that works.

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