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# Three Lessons for Monetary Policy from the Panic of 2008

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## THE NATURE OF THE CRISIS

- The autumn 2008 panic was part of an ongoing crisis usually dated to August 2007.
- Some key events include:
  - October 2007: U.S. equity prices peak.
  - March 2008: Bear Stearns is purchased by JPMorgan with Fed assistance.
  - The U.S. economy continues to grow through Q2 2008.
  - Commodity prices spike during Q2 2008.
  - The U.S. economy contracts in Q3 2008.
  - The contracting economy intensifies the financial crisis, which has at that point been continuing for a year.
  - Q4 2008: Dozens of financial firms worldwide require assistance to avoid bankruptcy.
  - Q4 2008 and Q1 2009: Many major economies worldwide contract.

## A THREE-PART MONETARY POLICY RESPONSE

- A wide array of collateralized lending programs: *liquidity programs*.
  - Funded by reserve creation, “printing money,” after September 2008.
  - Temporary in nature.
  - Not an inflationary threat.
- A target policy interest rate near zero.
- An aggressive asset purchase program: *quantitative easing*.
  - Also funded by reserve creation.
  - Far more persistent than the liquidity programs.
  - Creates a medium-term inflation threat.

## THREE LESSONS FOR MONETARY POLICY

- Lesson One: Lender-of-last-resort (LOLR) on a grand scale.
- Lesson Two: Quantitative easing can substitute for policy rate easing after the zero bound is encountered.
- Lesson Three: Better understanding of the connections between asset pricing and monetary policy is a top priority.

# Lender-of-last-resort on a grand scale

## THE LESSON

- The Lesson: The Fed's ability to act decisively in a crisis through its lender of last resort function far outstrips previous conventional wisdom.
- The liquidity programs need to be carefully evaluated.
- The scale of the liquidity programs may be unintentionally setting up expectations of future intervention.

## THE LENDER OF LAST RESORT

- Central banks traditionally lend extensively in a crisis.
  - This is the “lender of last resort” function of monetary policy.
- The Fed developed a wide array of liquidity programs in 2007 and 2008.
- These programs are designed to improve market functioning during the crisis.
- The programs are temporary in nature.
- As market functioning improves, these programs are not as necessary.

## THE LIQUIDITY FACILITIES

- Depository institution facilities.
  - Primary credit.
  - Term Auction Facility (TAF).
  - Foreign currency swaps with foreign central banks.
- Primary dealer facilities—authorized under 13(3).
  - Primary Dealer Credit Facility (PDCF).
  - Term Securities Lending Facility (TSLF).
- Market and institution facilities—authorized under 13(3).
  - Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF).
  - Commercial Paper Funding Facility (CPFF).
  - Money Market Investors Funding Facility (MMIFF).
  - Term Asset-Backed Securities Loan Facility (TALF).

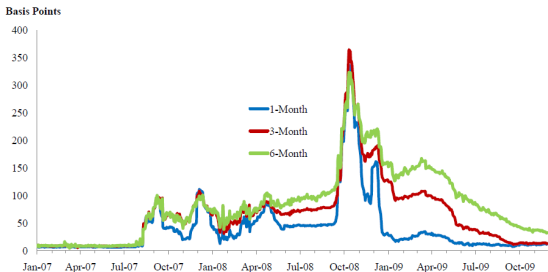


## IMPROVED MARKET FUNCTIONING

- The liquidity facilities are intended to improve market functioning.
- Some may have worked better than others.
  - Careful evaluation of these programs is an important topic for current research.
- A quantitatively important role for government guarantees?
- By many metrics, global financial markets are less strained than they have been.
- To be sure, some stress remains.

## AN EXAMPLE OF IMPROVED MARKET FUNCTIONING

### LIBOR-OIS Spread



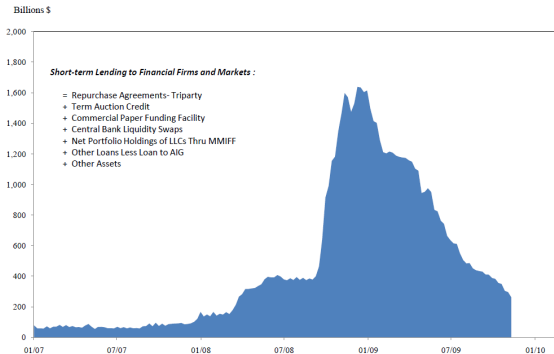
Source: Financial Times and Reuters.

## THE DIMINISHING NEED FOR LIQUIDITY PROGRAMS

- Many programs are being used less intensively than in the recent past.
- Core idea: let these programs continue to wind down naturally.
- Plan to end the 13(3) programs next year.

# LIQUIDITY PROGRAM VOLUMES

## Short-Term Lending to Financial Firms and Markets



## THE FUTURE OF THE LIQUIDITY FACILITIES

- The expectation is that most or all of these programs will end next year if financial conditions continue to improve.
- The lesson is that these programs were far larger and more varied than what could have been anticipated before the crisis.
  - The effectiveness of these programs should now be carefully evaluated.
  - The central banking research community needs to think much more carefully about the ramifications of the lender of last resort policy.
  - The crisis may have unwittingly set up expectations of future intervention that could be influencing markets today.

# Monetary Policy by Different Means

## THE LESSON

- The Lesson: The Fed is very capable of conducting stabilization policy when policy rates are near zero.
- The quantitative policy should be conducted in a manner analogous to interest rate policy.
- This means adjusting the policy according to incoming information on the economy.

## ZERO POLICY RATES

- The FOMC has said it will keep the federal rate funds target near-zero “for an extended period.”
- Any movement on this is contingent on both inflation and real economic developments.
- How should the FOMC conduct stabilization policy during the period of near-zero policy rates?
- Answer: There are many interest rates that the Fed can influence.



## OUTRIGHT ASSET PURCHASES

- The FOMC has announced more than \$1.7 trillion in outright asset purchases.
- The purchases are in agency debt, agency MBS, and longer-term Treasuries.
- This is being financed by reserve creation, “printing money.”
- The monetary base has more than doubled.
- In contrast to the liquidity programs, the expansion of the monetary base associated with the asset purchase program is likely to be very persistent.
- This has created a medium-term inflation risk.

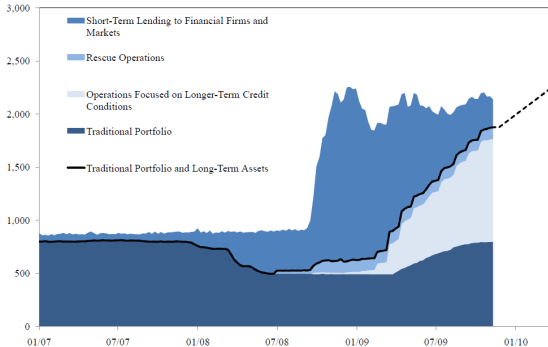
## THE MEDIUM-TERM INFLATION RISK

- Very large increases in the monetary base are inflationary under ordinary monetary theory.
- The actual effects depend on at least two factors.
- One factor: Private sector expectations of the future level of the monetary base.
  - Large increases which are expected to be temporary, as with the liquidity programs, are not inflationary.
  - Large increases which are expected to be more persistent may be inflationary.
  - The increase in the base associated with asset purchases is more persistent.
- A second factor: The speed with which the monetary base is translated into changes in the money supply.
  - This is not occurring very rapidly right now.

# THE COMPOSITION OF FEDERAL RESERVE ASSETS

## Composition of Federal Reserve Balance Sheet

Billions \$



## ASSET PURCHASES AS QUANTITATIVE EASING

- The FOMC moved its policy rate to near zero in December 2008.
- The asset purchase program began in January 2009.
- The program has been regarded as successful in further easing monetary conditions after the zero bound was encountered.
- The asset purchase program substituted for additional easing that could not be done through the policy rate.
- It would be natural for the FOMC to continue to adjust the asset purchase program going forward, while the policy rate is near zero.

## ASSET PURCHASES AS STATE-CONTINGENT POLICY

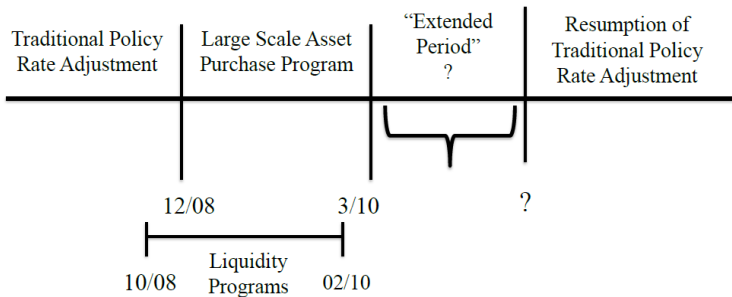
- When central banks adjust interest rates, they do so in response to economic conditions (e.g. Taylor Rule).
- The U.S. asset purchase program does not currently have this state-contingent character.
- The Committee has simply announced that \$1.725 billion of assets will be purchased by Q1 2010.
- It may be helpful to think more in terms of adjusting this program as macroeconomic information arrives.
- This means adjustments to asset purchases would dominate U.S. monetary policy responses to incoming information in the near term.

## WHAT TO DO

- Stay active at a very low level in the market for agency MBS past Q1 2010.
- If reasonably encouraging information on the economy arrives, consider removing some monetary accommodation through asset sales.
- If the economy performs poorly, consider additional asset purchases.
- This allows monetary policy to remain active, responding to shocks, during the period of near-zero interest rates.

## WHAT TO DO

### Timeline of Monetary Policy



## SUMMARY FOR THE ASSET PURCHASE PROGRAM

- The U.S. asset purchase program is large and is being financed by reserve creation.
- It is generally considered successful, substituting for easing that could not be accomplished through the policy rate.
- Longer-term interest rates generally fell as aspects of the program were announced.
- The FOMC could use the program to respond to incoming information on the economy during the period of near-zero policy rates.



# Asset Pricing

## THE LESSON

- The Lesson: Asset price "bubbles" are a very serious issue for monetary policy.
- This issue has been debated extensively over the past 15 years, but the debate will now intensify.
- The main problem: It is hard to see what was "wrong" with previous policy, given conventional ideas about what policy is trying to accomplish.

## TWO DECADES, TWO "BUBBLES"

- Monetary policy necessarily affects asset prices and interest rates.
- Historically, this did not appear to create prolonged run-ups in asset prices.
- But changes in the recovery of employment in the past two recessions led the Fed to keep interest rates low for a long time.
- Both periods featured prolonged increases in certain asset prices: for technology in the 1990s, and for housing in the 2000s.
- The drag on the economy from the housing decline since 2006 has been especially severe.

## MONETARY POLICY OUTCOMES

- Still, monetary policy outcomes during the past two decades up to the current crisis have been good.
- Unemployment hit lows of 3.8 percent in 2000, and 4.4 percent in 2007.
- Inflation has been low and stable through this period.
- If policy was too low for too long in the 1990s and in the 2000s, why didn't we see more inflation?
- Yet, without an increase in inflation, asset price misalignments seem to have caused significant problems for the macroeconomy.
- This may mean that monetary policy should put more weight on asset prices going forward.

## WHAT THE POLICY DEBATE HAS SAID

- At least three points have been stressed.
- It is hard to identify asset price misalignments in real time.
- Interest rate movements are a blunt instrument to use to lean against particular asset price movements.
- Not all "bubbles" are bad.
- These are all good points.

## WHAT THE LITERATURE SAYS

- The literature on (New Keynesian) monetary policy investigates situations under which multiple equilibria exist.
- This can be interpreted as the “bubbles” of common parlance.
- The multiple equilibria co-exist with a fundamental equilibrium.
- Inside the literature, the main idea is to identify policies that “kill off” the multiple equilibria so that they no longer exist.
- One example of a policy that often works well is for monetary policy to react aggressively to shocks.
- To obtain a better analysis of policy issues with respect to bubbles, we may have to entertain ideas like these.

# Conclusions

## THREE LESSONS

- The lender of last resort function has proven far more flexible and more powerful than previously believed.
- The asset purchase program has shown that an active stabilization policy is possible with the policy rate at zero.
- The issue of asset price "bubbles" is a difficult one for monetary policy and may require new and innovative analysis.





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