Reducing Deflationary Risk in the U.S.

James Bullard
President and CEO
Federal Reserve Bank of St. Louis

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Any opinions expressed here are mine and do not necessarily reflect those of other Federal Open Market Committee participants.
THE STATE OF PLAY

- Worldwide economic recovery continues.
- During the recovery process, economies are susceptible to further negative shocks.
- Negative shocks can dampen inflation expectations.
- How to combat this possibility when policy rates are already near zero?
  - Some of the material in this talk is based on my paper, "Seven Faces of ‘the Peril’", which appeared in the September-October 2010 issue of the Federal Reserve Bank of St. Louis Review.
MARKET-BASED U.S. INFLATION EXPECTATIONS
Current U.S. Monetary Policy

- Near-zero policy rate.
- Large quantitative easing program.
- “Extended period” language for near-zero policy rate.
- Conventional wisdom reaction to a negative shock: *lengthen the “extended period.”*
- Could this send the U.S. (and Europe) to a liquidity trap?
Consider a model with three generic features:

- A Fisher relation.
- A monetary authority which follows a Taylor-type policy rule.
- The zero lower bound on nominal interest rates.

Models with these features possess an unintended steady state.

- The unintended steady state is characterized by:
  - Short-term nominal interest rates at or near zero.
  - Inflation consistently below target.
Interest Rates and Inflation in Japan, the U.S., and the Euro Area

- Japan, Jan 2002 to January 2011
- U.S., Jan 2002 to January 2011
- Euro area, Jan 2002 to Jan 2011

- Fisher relation
- Nonlinear Taylor-Type Rule
- Series6

**January 2011**

(-0.5, 0.001)

(2.3, 2.8)
Reactions
Macroeconomists and policymakers are generally very fragmented on this issue.

The following is a list of views, some formal, some informal.
Denial

![Graph showing Denial](image-url)

Legend:
- U.S., Jan 2002 to January 2011
- Fisher relation
- Linear Taylor-Type Rule

**Key Points:**
- The graph illustrates the relationship between inflation and the nominal interest rate over time.
- The data points represent various periods, with notable segments labeled as 2003-2004 and January 2011.
- The graph includes a Fisher relation and a linear Taylor-Type Rule for comparison.

**Conclusions:**
- The effectiveness of QE2 in influencing the economy.
- Analysis of the market's reaction to these monetary policies.
LEARNABILITY

- Eusepi (2007, *JME*).
- Global analysis.
- Targeted equilibrium can be the sole learnable long-run outcome.
  - The Taylor-type rule has to respond only to past inflation.
- But many other possibilities exist.
- Cold comfort—a form of denial?
FOMC, 2003
Discontinuity
TRADITIONAL

Diagram showing the relationship between inflation and the nominal interest rate with points indicating data from Japan (Jan 2002 to Jan 2011) and the U.S. (Jan 2002 to Jan 2011), with lines representing the Fisher relation and nonlinear Taylor-type rule.
**FISCAL EXPANSION**

- Aggressive fiscal expansion to avoid a liquidity trap.
- Total government liabilities $M + B$ promised to grow at a rate in excess of the nominal interest rate.
- This eliminates the liquidity trap as a steady state equilibrium.
- This approach is criticized by Atkeson, Chari, and Kehoe (2010, *QJE*): implementation through extreme government response.
- *Impractical and dangerous in the wake of the European sovereign debt crisis.*
  - Japanese fiscal expansion nearing a debt-GDP ratio of 200 percent.
Deterministic paths for the policy rate

- Set a threshold for inflation below the target rate of inflation.
- If inflation falls below the threshold, abandon the Taylor-type policy rule.
- Instead, follow a deterministic path for the nominal interest rate.
- Involves raising policy rates independently of economic events.
- Avoids the fiscal expansion.
**Quantitative Easing**

- Successful for the U.S. and the U.K.
- U.K. actual and expected inflation have remained higher.
- Threats to permanently “monetize more debt” are more credible than fiscal actions.
  - Reliably pushes inflation expectations higher.
- Can be made state contingent in an appropriate way.
- Japanese record shows that a temporary balance sheet expansion is not effective.
QE2: Was It Effective?
What the FOMC Did

- The FOMC began slowing the run-off of the balance sheet in August 2010.
- Markets began pricing in additional action after the Chairman’s Jackson Hole speech later in August.
- The decision on QE was made at the November FOMC meeting.
- Most effects were already priced into financial markets at that point.
EXPECTED INFLATION INCREASED

TIPS Breakeven Inflation Rates

Percent, Constant Maturity

Chairman Bernanke's speech at Jackson Hole  November 2-3 FOMC

10-year

5-year

2.43

2.18

Mar-10  May-10  Jul-10  Sep-10  Nov-10  Jan-11  Mar-11
EQUITY PRICES INCREASED

Wilshire 5000 Price Index (Full Cap)

Index, 12-31-1970 = 830.27

Chairman Bernanke's speech at Jackson Hole
November 2-3 FOMC
THE DOLLAR DEPRECIATED

Nominal Broad Trade-Weighted Exchange Value of the USS

Index

110
105
100
95
90

Jan-10 Apr-10 Jul-10 Oct-10 Jan-11

Chairman Bernanke's speech at Jackson Hole
November 2-3 FOMC
REAL INTEREST RATES DECLINED

5-year TIPS Yield

Chairman Bernanke's speech at Jackson Hole
November 2-3 FOMC

Percent p.a.

Jan-10 Apr-10 Jul-10 Oct-10 Jan-11
**Classical monetary policy easing**

- These are the “classic” financial market effects one might observe when the Fed eases monetary policy in ordinary times (that is, in an interest rate targeting environment).
- Effects on the real economy would be expected to lag by six to twelve months.
  - Real effects are difficult to disentangle because other shocks hit the economy in the meantime.
  - This is a standard problem in the evaluation of monetary policy.
ACTUAL INFLATION TURNING AROUND?

Consumer Price Index Inflation Measures

Year-over-Year Percent Change

- 6.0
- 5.0
- 4.0
- 3.0
- 2.0
- 1.0
- 0.0
- -1.0
- -2.0


FRB Cleveland Median CPI
Core CPI
Headline CPI
Conclusions
**Conclusions**

- The U.S. was susceptible to negative shocks which could dampen inflation expectations.
- This could possibly push the economy into a liquidity trap.
- The conventional wisdom policy response to a negative shock is to promise a longer “extended period.”
- This may work—but it may also encourage a liquidity trap outcome.
- A better policy response to a negative shock is to expand the QE program.