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REPUBLICAN STAFF COMMENTARY

Too Loose for Too Long

Has Price Inflation Already Set In?

May 4, 2011

There has been no doubt that the combined effect of the Federal Reserve's [Fed's] multi-trillion-dollar injections of money into the banking system, along with its holding of the target federal funds rate at a record low level of 0.0%-0.25% for a record-long 29 months (Fig. 1), would create very strong inflationary pressures.

The questions that remain are: (1) when will inflationary pressures begin to rise; and (2) will the Fed will be able to adequately anticipate such pressures so as to successfully fine-tune an exit strategy that will prevent high inflation without significantly dampening economic growth? As summed up by Philadelphia Federal Reserve Bank President Charles Plosser:

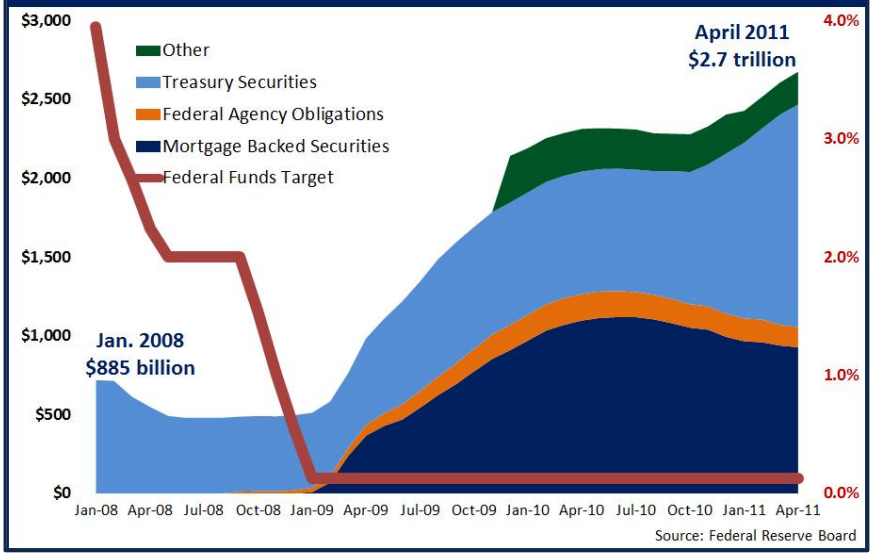
> *Some people have questioned whether the Fed has the tools to exit from its extraordinary positions… The question is not <u>can</u> we do it, but <u>will</u> we do it at the right time and at the right pace. Since monetary policy operates with a lag, the Fed will need to begin removing policy accommodation before unemployment has returned to acceptable levels. Will we have the fortitude to exit as aggressively as needed to prevent a spike in inflation and its undesirable consequences down the road?"*[1]

Highlights

- ***The Fed has held constant its target federal funds rate at a record low level of 0.0%-0.25% for a record-long 29 months, and has pumped more than $2 trillion into the money supply.***
- ***"Inflation is always and everywhere a monetary phenomenon." -****Milton Friedman*
- ***A "long and variable" lag between monetary policy action and its intended effects means the Fed must act before price inflation begins.***
- ***Once inflation is entrenched, the Fed must tighten more aggressively to control inflation.***
- ***Inflation distorts economic decision-making.***
- ***Signs of emerging inflation and improving economic conditions suggest the Fed should begin to retreat from its loose, accommodative policies.***

Loose Policy: Inflated Balance Sheet, Low Interest Rates **Fig. 1**

(Assets in Billions of Dollars through April 2011)



Source: Federal Reserve Board

The addition of a second round of quantitative easing in November 2010 and, now, emerging signs of inflation,

have raised concerns that the Fed may already have sustained its exceptionally loose monetary policy for too long.

What is Monetary Policy?

Monetary policy refers to actions of central banks to provide and regulate the money supply. Households and firms demand money to make economic transactions, store value, and meet unexpected needs. To meet this demand, governments grant a legal monopoly to central banks, which are tasked with supplying the quantity of money that households and firms demand. On the one hand, supplying too much money causes price inflation. On the other, supplying too little causes price deflation.

The main tools of monetary policy are:

1. **Open market operations**. Open market operations, which refer to the buying and selling of debt securities, are the Fed's principal tool for conducting monetary policy. Normally, the Fed uses U.S. Treasury debt securities to alter the money supply, but during QE1, however, the Fed bought federal agency (a government-sponsored enterprise, or GSE, such as Fannie Mae and Freddie Mac) debt securities and federal agency residential mortgage-backed securities as well. To increase the money supply, the Fed creates reserves to buy Treasuries or other debt securities from the public. In turn, commercial banks use these new reserves to increase their loans and investments to households and firms. Ordinarily, commercial banks will collectively expand their loans and investment by the reciprocal of the larger of desired reserves or required reserves expressed as a percentage of deposits. For example, if the Fed buys $10 billion in Treasuries and the desired reserve ratio is 5%, the money supply will increase by $200 billion [$10 billion/.05]. This is known as the money multiplier. To decrease the money supply, the Fed reduces reserves by selling debt securities to the public, putting the money multiplier into reverse.

2. **Loans to financial institutions**. As lender of last resort, the Fed may make fully secured short-term loans to financial institutions based on acceptable collateral in proper margin. Loans to financial institutions normally play a minor role in conducting monetary policy, but the demand for currency increases during financial crises. When the public converts deposits to currency, the money supply held within financial institutions contracts and causes financing to become more difficult or costly to obtain. Loans to financial institutions allow the Fed to counteract this contraction in the money supply and lending that would otherwise occur.

3. **Reserves**. The Fed establishes reserve requirements—a percentage of specified bank deposits that must be held in reserve either as cash or with the Fed—for member commercial banks, and since 2008, the Fed has been paying interest on commercial bank reserves. The Fed can affect the ability and willingness of commercial banks to lend to households and firms by changing reserve requirements and the interest rate paid on reserves.

After Federal Open Market Committee (FOMC) meetings, the Fed announces a **target for the federal funds rates**, the overnight interest rate that commercial banks pay to other commercial banks for their excess reserves at the Fed, to signal its monetary policy to the public. Reducing the target rate indicates an easing of monetary policy, while increasing the target rate indicates a tightening of monetary policy. The Fed seeks to maintain its target through open market operations until the next meeting of the FOMC.

How does Monetary Policy Affect Output and Prices?

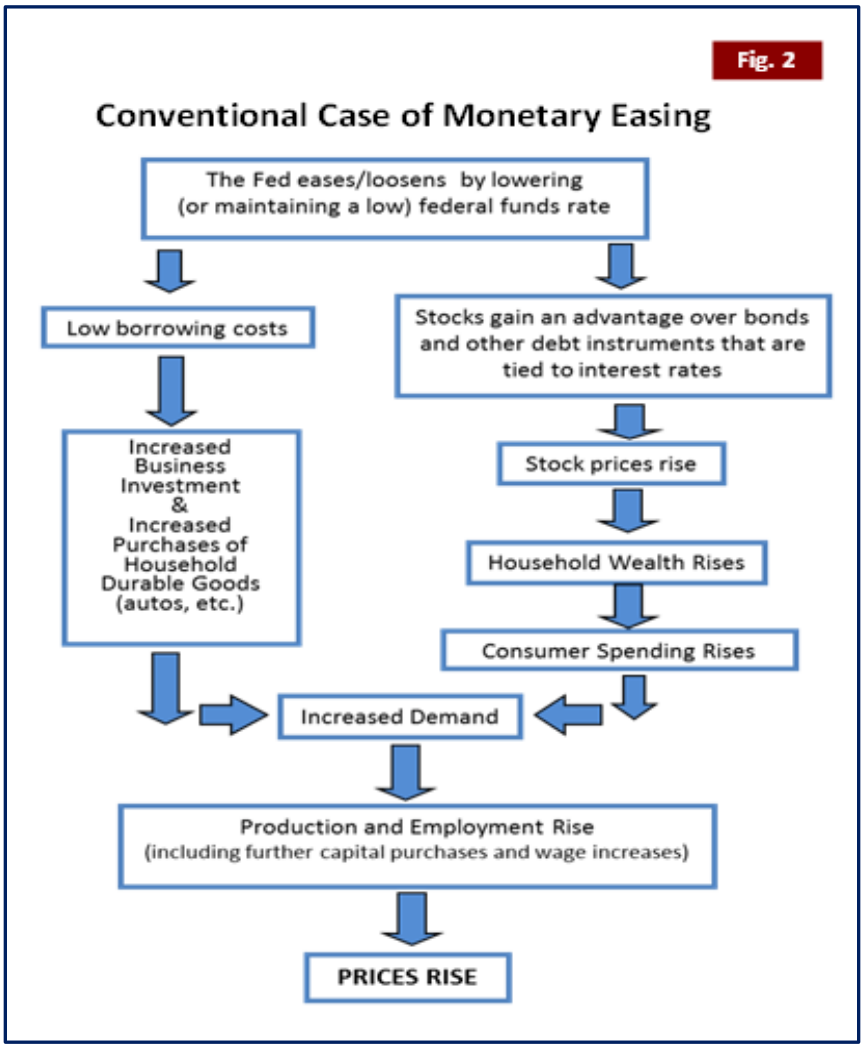
By altering interest rates, monetary policy affects demand for goods and services, which in turn impacts output, employment, and inflation. Monetary policy may have different short-term and long-term economic effects, and households' and firms' expectations affect the duration and strength of these effects.

Whereas monetary policy can affect output and employment in the short-run, inflation is the only factor monetary policy can affect in the long-run. As famously stated by Nobel Laureate Milton Friedman, "Inflation is always and everywhere a monetary phenomenon."[2]

Conventional Case: Economic effects of easing under expectations of price stability. First, let's look at a one-time monetary easing after a period of price stability that the public expects to continue (see Fig. 2). The Fed lowers the target for the federal funds rate and buys Treasuries to inject additional reserves into commercial banks. Nominal interest rates decline, but short-term rates fall more than long-term rates (because the easing is seen as temporary), causing the yield curve to steepen.[3]

The first effect of easing is an immediate increase in the price of financial assets such as Treasury bonds, municipal bonds, corporate bonds, and common stock.

The second effect is a short-term boost in output, peaking in three to six months. Since commercial banks generally "borrow short to lend long," a steepening yield curve encourages commercial banks to increase their lending and investing to households and firms. Simultaneously, lower interest rates encourage households to purchase homes and consumer durable goods such as autos and prompts firms to invest in new buildings, equipment, and software.



Most Keynesian economists hold that changes in real interest rates drive business. However, there is no statistically significant relationship between real interest rates and business investment. In contrast, most neoclassical economists hold that changes in the expected real after-tax rate of return drive business investment. Changes in real interest rates are one of many factors that affect expectations for the real after-tax rate of return.

The third effect of monetary easing is a general increase in the prices of goods

and services and a reversal of the first two effects. Easing boosts the demand for consumer and capital goods without affecting their supply. Over time, this imbalance increases the prices of goods and services between one and three years after a monetary policy easing. Milton Friedman described this period between a monetary policy action and its effect on prices as the "long and variable lag of monetary policy."[4] The Federal Reserve describes the timing of monetary policy lags in the following:

> *The major effects [of monetary policy action] on output can take anywhere from three months to two years. And the effects on inflation tend to involve even longer lags, perhaps one to three years or more.* [5]

This lag between monetary policy action and price changes is due, in part, to price stickiness (i.e., the slowness of some prices to change in response to changes in supply or demand). Unlike stock prices, which change instantaneously, or gas prices, which change weekly or daily based on costs and demand, prices for other consumer products and services tend to change less frequently. A survey of businesses showed that the median frequency of price changes was just once per year.[6] This is because prices changes can be costly and time-consuming to implement (there are costs to reprinting price tags, changes to entry keeping, etc.) and consumers often resist or resent price changes (most specifically, price increases). Additionally, the existence of long-term contracts and legal obstacles contribute to the lag in price and wage changes. Consequently, even when interest rates have the effect of raising or lowering input costs in the short run, it may take a year or more for those price changes to be realized in finished goods and services.

If the Fed does not continue to ease monetary policy, nominal interest rates increase, the yield curve flattens, financial asset prices revert, and the short-term boost to output dissipates. Thus, the only long-term effect from the easing is a general increase in the price level of goods and services.

How changing inflationary expectations affect the economic outcome of easing. Look what happens if the Fed continues to ease for a sustained time: Because monetary easing eventually results in inflation, sustained easing can cause the public to doubt the Fed's commitment to price stability and to instead start to expect price inflation. At first, financial institutions and major firms begin to monitor the Fed's actions and attempt to discern whether increases in demand are due to real or monetary factors.

Despite the easing, nominal interest rates may begin to rise instead of fall as lenders try to protect themselves from future price inflation. Consequently, financial asset prices fall and any short-term boost to output diminishes. As expected inflation begets real price inflation, all households and firms begin to build continued price inflation expectations into their assumptions of labor and other long-term contracts. Thus, inflationary expectations become "entrenched" in the economy.

Rising inflationary expectations erode the Fed's ability to stimulate output in the short term through easing. During the 1970s, the Fed tried to overcome the diminishing effectiveness of easing by increasing the quantity of each easing. The result of this policy was accelerating price inflation. In the current environment, a long-sustained and exceptionally large monetary stimulus has generated significant and rising inflation expectations that, if not already, are likely to limit the Fed's ability to effectively stimulate the economy through a continued loose monetary policy.

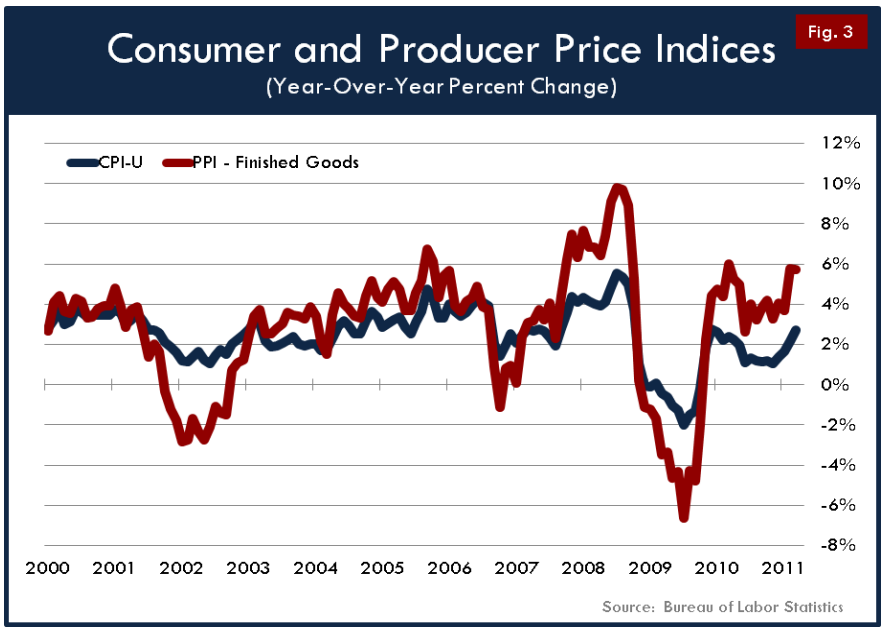
Furthermore, rising inflationary expectations, when caused by doubts that the Fed will adequately contain inflation, make it more difficult for the Fed to fight inflation. Once inflation expectations become entrenched, the only way to fight inflation is for the Fed to tighten so aggressively that it causes losses in output and employment.

Asset bubbles. In most cases, an easing of monetary policy works as described in the conventional case. Under certain circumstances—such as when governments intervene in free markets—a monetary easing flows primarily through the asset channel rather than through the goods and services channel. This is what happened when the Fed eased monetary policy during and after the March 2001-November 2001 recession.

Action by the People's Republic of China to maintain an undervalued exchange rate (in an effort to support its export-led development strategy following the Asian financial crisis of 1997-98), and the response of other Asian countries who followed suit, intensified price competition in tradable goods and services in global markets. This price competition prevented competitors in the United States, the European Union, or other countries with floating exchange rates from increasing prices. Consequently, when the Fed eased monetary policy during and after the March 2001-November 2001 recession, the monetary easing flowed through asset channels and non-tradable good and services channels, producing a housing price bubble in the United States and many other countries with floating exchange rates.

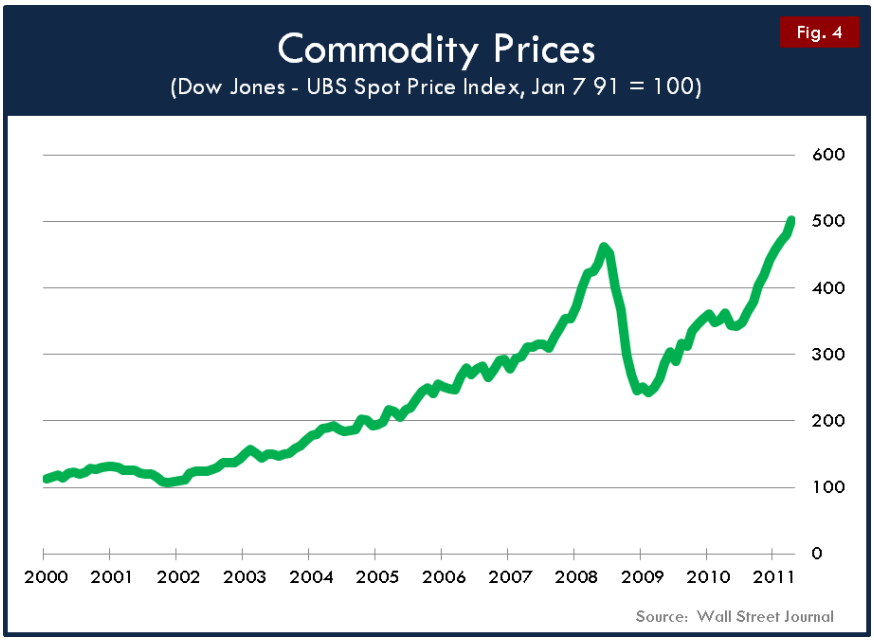
Price inflation distorts economic decision-making. High and variable levels of inflation (and expectations for such) can significantly hinder economic activity for a number of reasons. When inflation rises beyond normal levels (the Fed's unofficial target is about 2% per year), it causes uncertainty and distortions in the economy: businesses cannot adequately assess underlying demand for their products and may delay increasing output; wages may be determined more by inflation than underlying productivity; and frequent price increases can lead to wasted resources. The uncertainty and confusion caused by inflation can significantly reduce and distort investment decisions, causing some to forego investments if they believe the returns will not keep pace with inflation, and preventing others from making prudent investment decisions. Additionally, inflation can erode the purchasing power of savers and individuals with fixed incomes (and some taxpayers who are subject to non-inflation indexed taxes) as the money they have saved or regularly receive can no longer buy as much as it used to.

Economic costs of restoring price stability once inflationary expectations become entrenched. Once "entrenched," inflationary expectations are difficult to change. In most cases, central banks cannot restore price stability without maintaining a very tight monetary policy for an extended period, which is likely to trigger a severe recession, a substantial increase in the unemployment rate, and a large increase in the number of business and personal bankruptcies.



Emerging Inflation and its Risks

After two years of low and declining inflation, inflation has picked back up and could be on the rise. Over the past four months (through March 2011), the Producer Price Index (PPI) has increased by an average of 1.1%, and in March, the PPI was up 5.7% from a year ago. The Consumer Price Index (CPI) has risen by an average of 0.5% over the past four months, and in March the CPI was up 2.7% from a year ago (Fig. 3).



Although the uptick in broad consumer price indices is still nascent, a number of factors suggest that the inevitable and expected inflation may have already begun. For starters, commodity prices (Fig. 4) have risen sharply since August 2010 (the same time that Federal Reserve Chairman Bernanke first mentioned a potential second round of quantitative easing—QE2).[7]

These commodity price increases, however, have yet to crop up in the form of sizeable price increases of consumer goods and services as reflected in the CPI. Whether or not these commodity price increases, which are likely the result of increased global demand, translate into broader price increases will depend in large part on the Fed. An accommodative monetary policy will allow prices of other goods and services, and thus inflation, to rise alongside commodity prices. On the other hand, a tightening of monetary policy, through interest rate increases or a drawing down of quantitative easing, may help prevent inflation from rising as high as it otherwise might.

Along with early signs of rising inflation and expectations for higher inflation in the near-term, recent improvement in economic conditions has further called into question the Fed's continuance of a very loose, accommodative monetary policy. The Fed has maintained a record-low target of 0.0%-0.25% for a record-long, almost 29 months and enacted two rounds of quantitative easing totaling more than $2.3 trillion. Despite recent economic improvement and potential signs of emerging inflation, the FOMC has continued to instill expectations of an exceptionally low federal funds rate for an "extended period" and has neither actively nor passively (by not reinvesting principal payments) reduced—or even signaled future reductions in—its inflated balance sheet.[8]

Emerging Dissent within the Federal Reserve

The most prominent critic of the Fed's ongoing loose monetary policy has been Kansas City Federal Reserve Bank President, Thomas Hoenig. Although no longer a voting member of the FOMC, Hoenig dissented in each of the eight FOMC meetings in 2010, arguing that improvements in economic and financial conditions were such that:

- Continuing to express expectations for exceptionally low federal funds rate for an extended period "could lead to financial imbalances and increase risks to longer run macroeconomic and financial stability" while limiting the Fed's ability to adjust policy when needed.

- Maintaining the Federal Reserve's holdings of longer-term securities (including reinvestment of principal payments from existing holdings and the additional round of security purchases announced in November) were not needed to support the Committee's policy objectives.

Another FOMC member (voting in 2011) who has expressed concern over the Fed's current policy is Charles Plosser of the Philadelphia Federal Reserve. Mr. Plosser is doubtful that the benefits of QE2 will outweigh the costs. Nevertheless, he has thus far supported continuance of QE2 based on the belief that failing to carry out its stated plans (absent significant changes in circumstances) would undermine the Fed's credibility. In a February 23rd speech (prior to the release of data showing sizeable employment gains and an uptick in inflation), Mr. Plosser commented on the future path of monetary policy, stating:

> *If the growth rates of employment and output begin to accelerate or if inflation or inflation expectations begin got rise, then it may be time to begin taking our foot off the accelerator.*[1]

Why the Fed Should Change Course

Historically, delays in appropriate monetary policy action have contributed to economically destructive episodes. A recent example is the Fed's maintenance of very low rates amidst the housing boom of the early- to mid-2000s. While the Federal Reserve ascribes its accommodative monetary policy as only a small factor in the housing bubble, many other economists place significant blame on the Fed for failing to raise interest rates despite the noticeable housing bubble.[9,10]

Whereas the Federal Reserve's role in the housing boom and bust was limited to its effect on short-term interest rates, the Federal Reserve's current role also includes the management and eventual winding down of more than $2 trillion it has pumped into the economy through quantitative easing. The combination of record low interest rates and massive expansion of the money supply have set the stage for potentially excessive and damaging levels of inflation (particularly when coupled with unprecedentedly high deficits and an unsustainable fiscal outlook). Recent economic improvement, signs of emerging inflation, and recognition of the precarious United States' fiscal outlook suggest that it may be time—or past time—for the Federal Reserve to reverse course by indicating rate increases in the near-term and by pulling back its expansion of the money supply.

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[1] Plosser, Charles I., "The Progress of Recovery and Challenges for Policymakers," speech presented before the Rotary Club of Birmingham, February 23, 2011, http:/ /www.philadelphiafed.org/publications/speeches/plosser/2011/02-23-11_rotary-club-of-birmingham.cfm

[2] Friedman, Milton, "The Counter-Revolution in Monetary Theory: First Wincott Memorial Lecture," delivered at the Senate House, University of London, September 1970.

[3] The yield curve depicts interest rates by length of maturity, with interest rates typically rising as length of maturities increase. A steeper yield curve indicates a wider than normal gap between short- and long-term rates whereas a flatter yield curve represents a smaller than normal difference between short- and long-term rates.

[4] Friedman, Milton, "The Lag in Effect of Monetary Policy," *The Journal of Political Economy*, Vol. 69, No. 5 (Oct., 1961), pp. 447-466.

[5] Federal Reserve Bank of San Francisco, About the Fed: "How Does Monetary Policy Affect the U.S. Economy," http://www.frbsf.org/publications/federalreserve/monetary/affect.html

[6] Mankiw, Gregory N., "The Inexorable and Mysterious Tradeoff Between Inflation and Unemployment," Harvard Institute of Economic Research, September 2000, http://www.economics.harvard.edu/pub/hier/2000/HIER1905.pdf

[7] QE2 refers to the second round of quantitative easing formally announced by the Federal Reserve on November 3, 2010. QE2 includes the purchase of $600 billion in Treasury securities through June 2011. QE2 follows on the heels of QE1 (originally announced in November 2008 and expanded in March 2009), which included purchases of $1.25 trillion in agency mortgage-backed securities, $200 billion in agency debt, and $300 billion in Treasury securities.

[8] Board of Governors of the Federal Reserve System, Press Release: March 15, 2011, http://www.federalreserve.gov/newsevents/press/monetary/20110315a.htm.

[9] Board of Governors of the Federal Reserve System, "Monetary Policy and the Housing Bubble," December 22, 2009, http://www.federalreserve.gov/PUBS/FEDS/2009/200949/

[10] Hilsenrath, Jon, "Bernanke Challenged on Rates' Role in Bust," *Wall Street Journal*, January 14, 2010, http://online.wsj.com/article/SB126334299214726955.html