United States Monetary Policy Going Forward: A Single Mandate for Price Stability Will Help Maximize Job Creation and Economic Growth

Joint Economic Committee
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UNITED STATES MONETARY POLICY GOING FORWARD

A Single Mandate for Price Stability Will Help Maximize Job Creation and Economic Growth

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INTRODUCTION

In recent years, the Federal Reserve has shifted away from well-established norms for monetary policy. These policy deviations contributed to the inflation of an unsustainable housing bubble, a global financial crisis, and increased market uncertainty, which has inhibited a robust recovery. Avoiding these policy deviations may well have mitigated the ensuing negative fallout. Therefore, the Federal Reserve should implement a rules-based monetary policy going forward in order to promote long-term price stability, economic growth and job creation.

In recent years, the Federal Reserve has deviated from well-establish norms for monetary policy.

The Federal Reserve deviated from norms for monetary policy in the period from 2002 to 2005 by holding its target rate for federal funds too low for too long. This deviation contributed to the inflation of an unsustainable housing bubble and, once the Federal Reserve raised interest rates, a dramatic decline in home prices after they peaked in the summer of 2006. When the housing bubble burst, the severe correction in home prices lead to an unprecedented increase in residential foreclosure rates.

These policy deviations contributed to the unsustainable housing bubble, the bursting of which cascaded through the financial system and created a global financial crisis.

During the past decade, the proliferation of mispriced derivative financial instruments in the financial services sector resulted in a systemic vulnerability to defaults in home loans. The unexpectedly high default rates occurred because many widely-held derivatives had as reference assets either (1) residential mortgage loans, (2) securities containing residential mortgage loans, or (3) securities of companies engaged in residential mortgage securitization. As a result, disruptions in the housing market cascaded throughout the financial system, and a global financial crisis ensued. Had monetary policy followed its previous policy route, the severity of the crisis and the subsequent recession likely would have been mitigated.

During and after the financial crisis, the Federal Reserve engaged in several additional unconventional policy actions. Some of these

actions—such as providing emergency liquidity to the market during the height of the financial crisis—were in keeping with the Federal Reserve's role as the lender of last resort and its emergency authority. Other actions—such as the Federal Reserve's controversial intervention into the housing market —are more questionable because they occurred after the acute effects of the crisis had passed. Significantly, these post-crisis actions have sustained the Federal Reserve's balance sheet at unprecedented levels—triple its pre-crisis size—thereby risking the possibility of harmful future price inflation.

So far, policymakers have paid insufficient attention the macroeconomic causes of the crisis, especially the Federal Reserve's monetary policy in the lead-up to, during, and after the crisis.

In light of the housing bubble, the global financial crisis, and the subsequent anemic economic recovery, federal policymakers are reconsidering the oversight and regulation of U.S. financial institutions and markets. So far, federal policymakers have focused on perceived microeconomic causes of the crisis, including: (1) federal housing policies that sought to increase the rate of home ownership; (2) possible market failures; (3) shortcomings in federal oversight and regulatory regimes for financial institutions and markets; and (4) wrongdoing by certain firms and individuals.[1] However, the financial crisis had both macroeconomic and microeconomic causes. Federal policymakers have paid insufficient attention to the macroeconomic causes of the crisis—especially the Federal Reserve's monetary policy in the lead-up to, during, and after the crisis.

After discussing some historical context, this study provides four policy recommendations:

- ***(1) Create a single mandate for long-term price stability;***
- ***(2) Requiring the Fed to monitor asset prices;***
- ***(3) Restrict open market operations to U.S. Treasuries, repos, and reverse repos during normal times; and***
- ***(4) Require the Fed to articulate its lender-of-last-resort policy.***

This study begins with a brief discussion of the advantages of rules-based monetary policy over discretionary monetary policies. It then reviews the Federal Reserve's implementation of monetary policy in light of the rules-versus-discretion dichotomy and finds that discretionary actions by the Federal Reserve have contributed to past economic disruptions and pose a threat to the economy going forward. It concludes by commenting on the Federal Reserve's recent adoption of an explicit inflation target guiding its monetary policy decisions and by providing four policy recommendations for implementing a rules-based monetary policy going forward: (1) creating a single mandate for the Federal Reserve to maintain long-term price stability; (2) requiring the Federal Reserve to monitor asset prices for signs of incipient asset price bubbles; (3) restricting open market operations to U.S. Treasuries, repurchase agreements, and reverse repurchase agreements during normal times; and (4) requiring the Federal Reserve to clearly articulate a lender-of-last-resort policy.

DESIGNING MONETARY POLICY

Well-reasoned, stable and predictable monetary policy reduces economic volatility and promotes long-term economic growth and job creation. Generally, "rules-based" policies reduce uncertainties and facilitate long-term planning and investment. Rules-based policies are most successful when they are designed "with a clear focus on the longer term, and with allowance for future contingencies."[2] Policymakers should set the rules of the game and make a credible commitment to abide by them; but, inflexible or overly prescriptive policies can prevent essential emergency actions during times of crisis.

Well-reasoned, stable and predictable monetary policy reduces economic volatility and promotes long-term economic growth and job creation.

Conversely, activist, interventionist, and discretionary monetary policies have been historically associated with increased economic volatility and subpar economic performance. Reasons for this are numerous and, in large part, practical. First, it is difficult for policymakers to identify in real time the economic inflection points that mark the beginning of financial crises and recessions; this is due to the extraordinary complexities and dynamism of the economy. Forecasts based on economic models are generally unreliable in identifying such inflection points. Hence, it is very difficult for policymakers to establish a proper baseline from which monetary policy adjustments should be made.

Activist, interventionist, and discretionary monetary policies have been historically associated with increased economic volatility and subpar economic performance.

Second, even when economic circumstances are both known and well understood, implementing the appropriate monetary policy response is rife with difficulties. One well-known implementation problem, identified by Nobel laureate Milton Friedman, is the long and variable lag between a monetary policy action and its effects on the economy. Another problem is the "time inconsistency problem," a theory for which Finn Kydland and Edward Prescott won the 2004 Nobel Prize in Economic Sciences.[3] The time inconsistency problem refers to the difficulties created by the time lapse between the announcement of a policy and its implementation. During this time lapse, the optimal policy response may change, and such changes induce policymakers to shift course over time. Taken together, these shortcomings mean discretionary policies are a drag on the economy because they are unpredictable, may be ill-timed, and inappropriate.

These two conclusions about the rules-versus-discretion dichotomy are quite logical, given that private businesses and households make plans based on expectations of future economic conditions. Unpredictable monetary policy creates uncertainty in markets and increases risk premia, thus boosting the cost of capital for business. An investment must yield a higher expected return to induce a

business to invest in it. Consequently, unpredictable monetary policy lowers aggregate investment. This relationship between discretionary policy and reduced investment is particularly acute in illiquid assets, such as buildings, equipment, and software, which are key drivers of long-term job creation.[4] Similarly, households are less likely to make large purchases, including homes and automobiles as economic uncertainty increases.

RECENT MONETARY POLICY OF THE FEDERAL RESERVE

THE TURBULENT 1970'S AND THE GREAT MODERATION OF THE 1980'S AND 1990'S

During the 1970's, the Federal Reserve implemented "a pattern of 'go-stop' policies, in which swings in policy from ease to tightness contributed to a highly volatile real economy as well as a highly variable inflation rate."

The distinct impact of discretionary and rules-based policy is readily apparent when viewed within the context of U.S. monetary policy over the past 40 years. During the 1970's, the Federal Reserve implemented "a pattern of 'go-stop' policies, in which swings in policy from ease to tightness contributed to a highly volatile real economy as well as a highly variable inflation rate."[5] These unpredictable and disruptive policies were guided, in part, by a misplaced belief in a simple version of the "Phillips Curve," a widely discredited economic theory that found an inverse relationship between the unemployment rate and the inflation rate. Under the Phillips Curve, the destructive phenomenon of stagflation, which is the combination of stagnant growth, persistent high unemployment, and high inflation, could not occur. However, the Federal Reserve, using the Phillips Curve to guide its monetary policy actions during the 1970's, produced stagflation through its unpredictable policy actions.

Rules based monetary policy, which was implemented under Chairman Volcker and Greenspan, focused on price stability led to the Great Moderation of the 1980's and 1990's.

A sea change in monetary policy occurred with the appointment of Paul Volcker as Chairman of the Board of Governors of the Federal Reserve System in 1979. His mandate was to break the back of inflation. In order to accomplish this goal, he raised the federal funds target rate from 11% in August of 1979 to a range of 18 to 20% by mid-1981 before lowering it incrementally to 8% in mid-1985. The economy suffered back-to-back recessions (January 1980 to June 1980 and July 1981 to November 1982). However, inflation (measured by the consumer price index) dropped from 13.3% in 1979, the year Volcker joined the Federal Reserve, to 3.8% in 1982, and thereafter averaged 3.0% over the next 20 years as Chairman Volcker and, later, Chairman Alan Greenspan implemented, with some exceptions, a transition toward a more rules-based monetary policy.

Comparing other economic indicators under the "go-stop" monetary policy of the 1970's and the relatively predictable monetary policy climate associated with the 1980's to 1990's (i.e., the "Great

Moderation") highlights the performance advantages of rules-based monetary policy. Most notably, macroeconomic volatility decreased during the 20 years after the 1970's, with quarterly output volatility (measured by standard deviation) falling in half and quarterly inflation volatility falling by two thirds. Moreover, two robust economic expansions occurred during the same period—the November 1982 to July 1990 economic expansion, which lasted 31 quarters, and the March 1991 to March 2001 expansion, which lasted 40 quarters. Unsurprisingly, the unemployment rate trended down over the same period. By contrast, the longest economic expansion of the 1970's was only 10 quarters long.[6]

After a nearly 20 year period of relative predictability, the Federal Reserve deviated from so-called "rules-based" monetary policy during the period from 2002 to 2005 by holding the target federal funds rate too low for too long.

THE TAYLOR RULE AND A MAJOR POLICY DEVIATION IN THE 2000'S

Many economic researchers and commentators have suggested that, after a nearly 20 year period of relative predictability, the Federal Reserve deviated from a rules-based monetary policy during the 2002-2005 period by holding the target federal funds rate too low for too long. However, this critique requires a framework for analysis, and it begs the question: from what did the target rate deviate? One particularly useful method for assessing policy deviations is to compare the historical target federal funds rate to the rate prescribed by the "Taylor rule."[7] The Taylor rule, devised by Stanford economist John Taylor, is a monetary policy rule that derives a recommended federal funds rate based on the level of inflation relative to the Federal Reserve's target inflation rate and the level of real output relative to potential output.[8] Generally speaking, implementing the Taylor rule would result in the Federal Reserve increasing the federal funds rate as inflationary forces increase and lowering the federal funds rate as inflationary forces decrease. The Taylor rule is both descriptive and prescriptive:

> *One such rule, the original Taylor rule, fit the data particularly well during the late 1980's and early 1990's, a period of generally favorable economic performance. Because this rule also performed well in a variety of macroeconomic models, keeping the volatility of inflation and output relatively low, the rule over time became viewed as a normative prescription for how policy should be set, conditional on a few economic indicators.*[9]

The Taylor rule is also robust with respect to specification, meaning a variety of formulations of the rule itself result in similar prescriptions. These theoretical and practical advantages led to a de-facto institutionalization of Taylor rule guidance in the Federal Open Market Committee's (FOMC's) decision-making process after its initial

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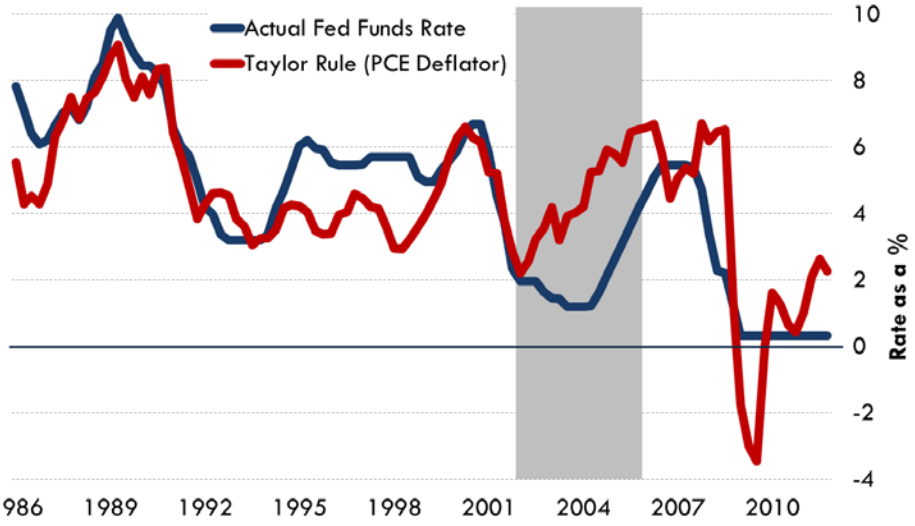
release in 1993. The FOMC is composed of 12 voting members and directs the Federal Reserve's open market operations, which effectuate the purchase and sale of Treasuries and other securities to influence the federal funds interest rate.[10] Members of the Committee often referenced various Taylor rule specifications during the Committee's regular meetings, and utilized it as a baseline for conducting monetary policy actions. The past effectiveness of the Taylor rule establishes it as a reliable tool for assessing Federal Reserve policy discretion.

During much of the period from 1986-2002 following the initial taming of inflationary forces, the target federal funds rate tracked closely the rate prescribed by the Taylor rule, with the exception that the actual federal funds rate was above the Taylor rule prescription for a period during the mid-to-late 1990's when the economy was experiencing explosive productivity growth (Figure 1).

Figure 1. Actual Federal Funds Rate vs. the Rate Prescribed by Taylor Rule, using PCE Deflator since 1986



*Shaded region represents the 2002 to 2005 policy deviations

Soure: Federal Reserve Board

The bursting tech stock bubble in early 2000, the economic shock of the terrorist attacks on September 11, 2001, and the 2001 recession precipitated possible deflation concerns among some members of the FOMC. However, subsequent analysis of the economic indicators suggests that such concerns did not have a strong foundation. For example, headline consumer prices never experienced a year-over-year decline during the period from 2001-2005. In fact, the CPI averaged 2.5% year-over-year growth during that period, and experienced a low average of 1.6% year-over-year growth in 2002. Contemporaneous analysis of inflationary data is difficult; however,

this analysis certainly refutes the contention that the economy needed aggressive monetary stimulus.

Nevertheless, the FOMC voted to reduce target rates from 6.5% in December of 2000 to 1.82% by December of 2001. It then held the target rate below that level for nearly three years before incrementally raising it back to 5.25% by June of 2006. During that period, the target federal funds rate averaged 2.17 percentage points below the level prescribed by the Taylor rule (using quarterly data).

Professor Taylor has argued that the cumulative effect of this monetary ease contributed to the housing bubble and thereby increased the magnitude of the decline in residential real estate prices on the back end of the bursting bubble.[11] There is growing, but not universal, agreement among economists about Taylor's findings.[12] For example, a study by Federal Reserve Bank of Kansas City vice president George Kahn found that "[w]hen the Taylor rule deviations are excluded from [my] forecasting equation, the bubble in housing prices looks more like a bump."[13]

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Of course, Federal Reserve monetary policy from 2002 to 2005 was not the sole cause of the housing bubble. Microeconomic factors, including the housing policies of President Bill Clinton and George W. Bush to expand homeownership among historically disadvantaged and low-income households; pressure from federal regulators to lower credit standards for extending residential mortgage loans; the panoply of federal tax preferences for housing; market-distorting housing finance government-sponsored enterprises (Fannie Mae and Freddie Mac); inaccurate ratings reports; and opaque derivatives markets, among others, contributed to the financial imbalances in the U.S. housing market. Other macroeconomic factors, including, most notably, massive capital inflows to the United States from abroad also contributed to the housing bubble.[14] However, the Federal Reserve's monetary policy in the 2002 to 2005 period were undeniably a contributing factor—one that was wholly avoidable had the FOMC simply followed well-established and stable monetary policy norms rather than engage in discretionary policies.

FINANCIAL CRISIS MONETARY POLICY

The Federal Reserve responded to the bursting housing bubble and the financial crisis of 2008 by taking a series of unconventional actions.

The Federal Reserve responded to the bursting housing bubble and the financial crisis of 2008 by taking a series of unconventional actions (see Appendix A). Some of these actions clearly were in keeping with the Federal Reserve's role as "lender of last resort," and were initiated pursuant to the Federal Reserve's emergency authority under section 13(3) of the **Federal Reserve Act**. In times of crisis,

depositors and other creditors cannot distinguish between healthy and unhealthy banks and other financial institutions. As a result, the flow of credit freezes, and all borrowers are penalized. A lender of last resort "ensure[s] that healthy financial institutions have access to sufficient short-term credit, particularly during [such] times of financial stress."[15] By addressing the liquidity problems of solvent, but temporarily illiquid banks and other financial institutions during a financial crisis, a lender of last resort can prevent unnecessary failures that could cause a financial crisis to spread to non-financial sectors of the economy and escalate into a depression.

Other Federal Reserve actions—including those preceding and during the crisis, both as general policy and directed to specific individual firms—addressed solvency problems, or selectively allocated credit to markets pre- and post-crisis. Insolvency reflects a fundamental weakness in the balance sheet of a firm because its liabilities are greater than its assets. However, addressing solvency problems in this way can induce firms to take undue risk under the assumption that they will later be "bailed out" if the risks don't pan out. Selectively allocating credit to favored markets can also distort financial decision making and lead to future asset bubbles. Thus, it is unclear whether this second category of actions was necessary, proper, or even helpful. The sum total of the Federal Reserve's actions over the past four years has been an unprecedented expansion of the Federal Reserve's balance sheet, which remains a risk to the sustainability of the economic recovery because it increases the danger of accelerating price inflation as the economy strengthens.

The impact of the bursting housing bubble spread throughout the financial system and credit markets deteriorated well before the market crash in the fall of 2008. Within the bounds of traditional monetary policy, the Federal Reserve began lowering the target federal funds rate from 5.25% in August of 2007 to a range of 0 - 0.125% by January 2009. However, it also simultaneously implemented several discretionary policies in the year leading up to the crisis, including creating specialized lending facilities aimed at supporting financial firms with deteriorating balance sheets. Among these lending facilities were the Term Auction Facility (TAF), the Term Securities Lending Facility (TSLF), and the Primary Dealer Credit Facility (PDCF). The TAF was essentially a repackaging of existing Federal Reserve lending capabilities aimed at alleviating the stigma associated with borrowing from the traditional discount window, while the TSLF and the PDCF represented new lending to unconventional non-commercial bank borrowers. During this same period, the Federal Reserve engaged in the first iteration of an on-

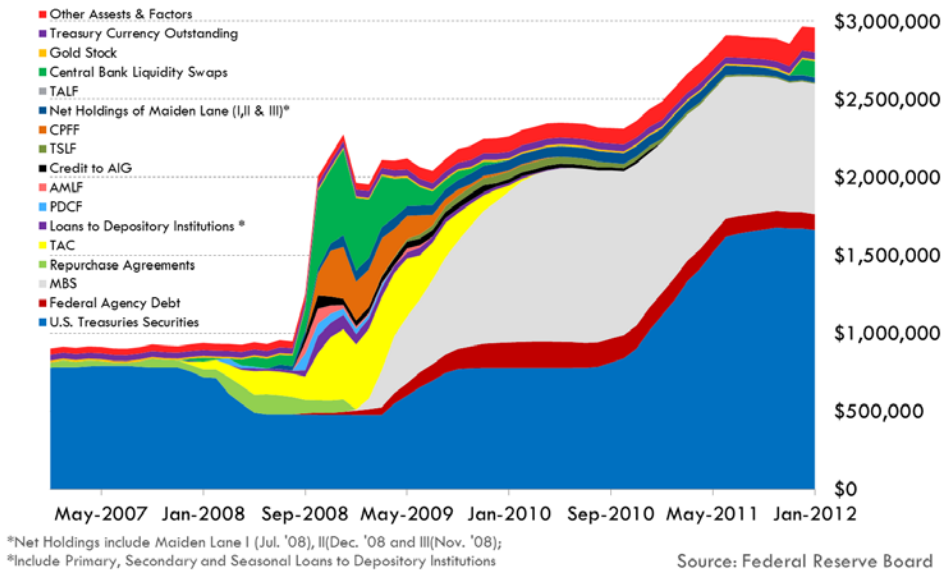
again, off-again bailout policy by facilitating the sale of the investment bank Bear Stearns to JP Morgan-Chase with a loan of almost $30 billion.[16] It also extended currency swaps to foreign central banks to enable them to stabilize dollar-based markets under their jurisdiction.

Initially, these pre-crisis actions did not increase the size of the Federal Reserve's balance sheet because the Federal Reserve "sterilized" (or offset) their effects by selling over $300 billion of its U.S. Treasury holdings during the first several months of 2008. Then, when credit market deterioration accelerated in September 2008, the Federal Reserve expanded its existing crisis lending facilities and introduced new ones. Between September and November 2008, the Federal Reserve introduced the Asset-backed Commercial Paper Money Market Fund Liquidity Facility (AMLF), the Commercial Paper Funding Facility (CPFF), and the Term Asset-backed Loan Facility (TALF). Each facility sought to stabilize the financial system by providing liquidity to key credit markets outside of the traditional banking system. The Federal Reserve also bailed out American International Group (AIG), a large global insurer after allowing the investment bank Lehman Brothers to file for bankruptcy.

Leading into the fall, the Federal Reserve halted its sterilization efforts because it was concerned about disrupting the Treasury market by flooding it with additional supply. Therefore, as firms began drawing heavily upon the myriad lending facilities, the Federal Reserve's balance sheet expanded massively—doubling to $2.2 trillion in just six weeks (see Figure 2 on the following page). The Fed's balance sheet remained at this elevated level through the end of 2008.

Leading into the fall [of 2008], the Federal Reserve halted its sterilization efforts . . . [and] the Federal Reserve's balance sheet expanded massively—doubling to $2.2 trillion in just six weeks.

Figure 2. Massive Expansion of the Federal Reserve Balance Sheet since 2006 (millions $)



*Net Holdings include Maiden Lane I (Jul. '08), II(Dec. '08 and III(Nov. '08);
*Include Primary, Secondary and Seasonal Loans to Depository Institutions

Source: Federal Reserve Board

The most acute effects of the financial crisis had begun to recede by January 2009, but the Federal Reserve took additional discretionary actions to maintain and even expand the size of its balance sheet.

The most acute effects of the financial crisis had begun to recede by January 2009. Consequently, borrowing through the Federal Reserve's crisis lending facilities declined sharply, as the Federal Reserve's balance sheet fell by $300 billion in the first four weeks of the year. The size of the crisis lending facilities continued to taper off into the summer months, and, by the end of 2009, the great bulk of the related borrowing had ceased.

If all else remained equal, the size of the Federal Reserve's balance sheet would have tapered down to pre-crisis levels as well. However, the Federal Reserve instead took additional discretionary actions to maintain and even expand the size of its balance sheet.

In early 2009, the Federal Reserve announced a program of large-scale asset purchases, dubbed "quantitative easing 1" (QE1). The mechanical effect of the program was simply to sustain the size of the central bank's balance sheet as the emergency liquidity facilities tapered off; however, the policy implications of the program were significant. Most importantly, the Federal Reserve began to actively support the housing market by purchasing over $1.25 trillion of residential mortgage-backed securities (RMBS) and $172 billion of debt securities issued by Fannie Mae, Freddie Mac, and Ginnie Mae.[17] In essence, the Federal Reserve was attempting to manipulate the economy by subsidizing the housing market. It hoped lower home mortgage interest rates would encourage refinancing activity, thereby increasing consumers' disposable income.

Despite the Federal Reserve's extraordinary efforts in 2009, the summer of 2010 brought a marked slowdown in the already anemic economic recovery.

Despite the Federal Reserve's extraordinary efforts in 2009, the summer of 2010 brought a marked slowdown in the already anemic economic recovery: job creation sputtered, economic growth slowed and a manufacturing sector recovery melted away**.** The 2010 mid-term elections drastically changed the composition of Congress, and federal policymakers were unlikely to implement fiscal stimulus programs in an attempt to spur the economy. Within that context, Chairman Bernanke announced in August a second round of quantitative easing (QE2), in which the Federal Reserve would purchase $600 billion of U.S. Treasury securities over eight months beginning in November 2010. The purchases brought the Federal Reserve's balance sheet to nearly $3 trillion—more than triple its pre-crisis size.

More recently, in August and September 2011, the Federal Reserve took two additional unconventional policy actions. First, the Federal Reserve announced in its August FOMC statement that economic conditions warranted "exceptionally low levels for the federal funds rate at least through mid-2013."[18] Federal Reserve policymakers

hoped this so-called "communications channel" would spur economic activity where large-scale asset purchases have fallen flat because it effectively commits the central bank to a highly accommodative monetary policy in the medium-term.[19]

Second, the Federal Reserve announced in mid-September that it would implement another unconventional bond-buying program, known as "Operation Twist," running through the end of June 2012. The program is modeled after the Federal Reserve's previous "Operation Twist" in the 1960's, which was considered a failure by most economists because it only lowered long-term interest rates by 10 to 20 basis points at most.[20] The effect of this program is to extend the average duration of the Federal Reserve's Treasury holdings by selling $400 billion of U.S. Treasuries with maturities of three years or less and using the proceeds to purchase $400 billion of U.S. Treasuries with maturities of six to 30 years.[21] Like quantitative easing, which reduces long-term interest rates, the program seeks to stimulate borrowing in order to finance consumer purchases of durable goods and housing and business investment in buildings, equipment, and software. However, unlike quantitative easing, the program will not increase the size of the Federal Reserve's balance sheet.

In addition to Operation Twist, the Federal Reserve has committed to reinvesting the principal payments from its holdings of federal agency debt and RMBS into agency RMBS. This change is a major policy reversal. Previously, the Federal Reserve had said that its massive intervention into housing finance was temporary and that it would allow its portfolio of federal agency debt and RMBS to decline gradually as principal was repaid. Now, the Federal Reserve has indicated that its portfolio of federal agency debt and RMBS is more or less permanent. Thus, the Federal Reserve will continue to allocate credit selectively toward politically favored borrowers.

Analyzing the impact and appropriateness of the Federal Reserve's policy over the past four years is challenging. It is difficult to differentiate between the concepts of liquidity and solvency, which are often interconnected. Moreover, dynamic and complex markets are ill-suited to clean, post-hoc dissection and explanation. A lack of consensus among economists about the ultimate effect of the Federal Reserve's discretionary actions reinforces this view.

The Federal Reserve's actions have increased market uncertainty.

However, three observations about the Federal Reserve's recent actions are worth mentioning:

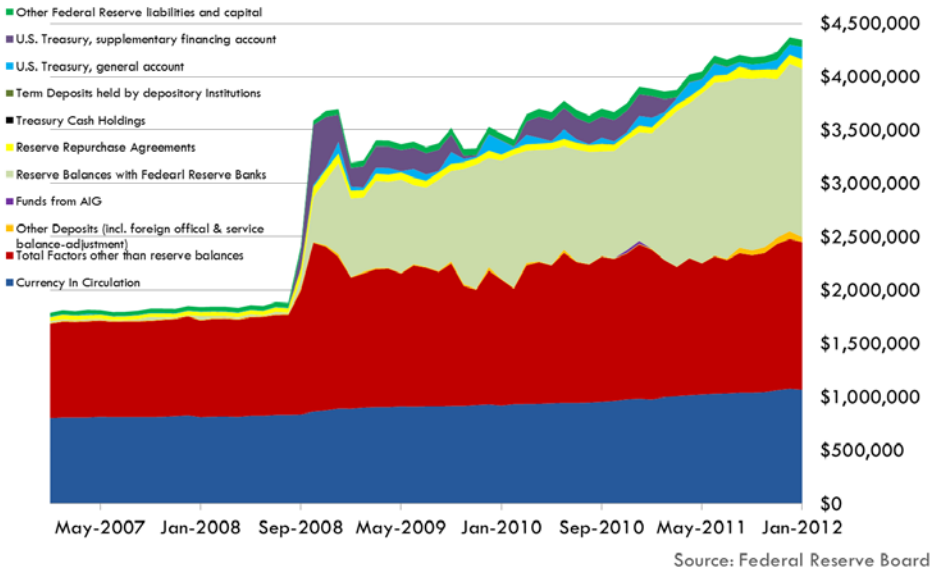
(1) The Federal Reserve's actions have increased market uncertainty. During the height of the crisis, the Federal

Reserve pursued a scattershot approach to addressing market failures. Some programs were poorly articulated, while others were implemented differently than advertised or not at all. With respect to individual firms, the Federal Reserve may have even contributed to the liquidity crisis by "saving" some firms and not others, thereby complicating creditors' risk calculus and creating moral hazard.

The Federal Reserve's decision to sustain the size of its post-crisis balance sheet through its quantitative easing programs has increased the risk for accelerating price inflation as the recovery strengthens.

(2) The Federal Reserve's decision to sustain the size of its post-crisis balance sheet through its quantitative easing programs has increased the risk for accelerating price inflation as the recovery strengthens. QE1 and QE2 have jointly extended two trillion dollars of credit to the banking sector, as reflected by the staggering increase in the monetary base beginning in the fall of 2008. To date, banks have chosen not to lend these funds out. As a result, excess reserves held on deposit at the Federal Reserve are over $1.5 trillion (Figure 3). These funds represent a real risk to the economy because if they are lent out more rapidly than Federal Reserve policy can manage, high and destructive inflation will ensue.

Figure 3. Massive Expansion of Federal Reserve Liabilities since 2006, (millions $)



Source: Federal Reserve Board

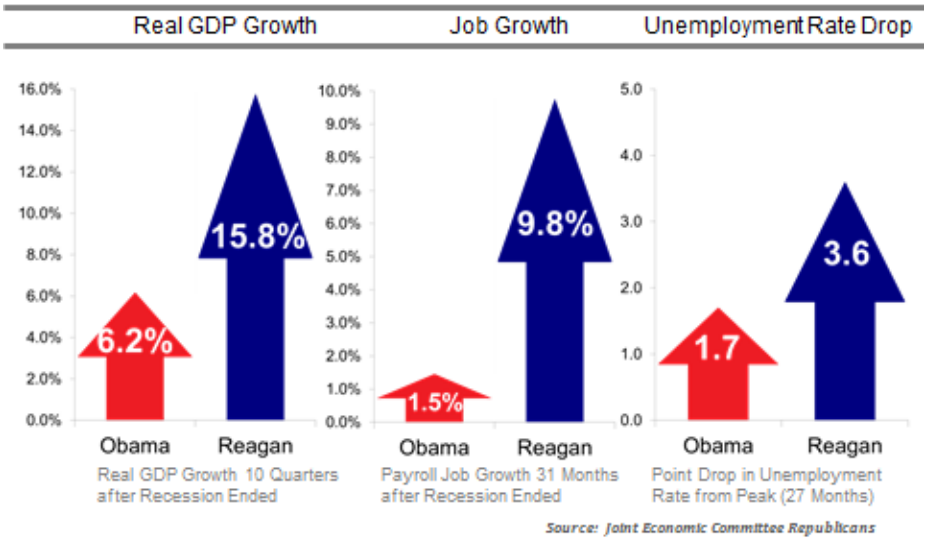
The discretionary monetary policy climate of recent years has once again correlated with a period of increased economic volatility and subpar performance.

(3) The discretionary monetary policy climate of recent years has once again correlated with a period of increased economic volatility and subpar performance. For example, the current recovery has greatly underperformed relative to the next most severe recession-recovery cycle, which occurred in the early 1980s under President Reagan. In that recession, the economy grew 15.8 percent and the unemployment rate fell 3.6

percentage points in the first ten quarters of the recovery. By contrast, the economy has grown just 6.2 percent and the unemployment rate has only fallen 1.7 percentage points since the recent economic recovery began in June 2009 (Figure 4).

Figure 4. Growth, Jobs and Unemployment

Obama Recovery Loses to Reagan Recovery on Key Measures



Source: Joint Economic Committee Republicans

A NOTE ON THE FEDERAL RESERVE'S NEW INFLATION TARGET

In its most recent monetary policy statement (January 2012), the Federal Open Market Committee adopted two new policies. The first policy was an extension of an existing one: the Federal Reserve communicated that it intended to hold the rate for federal funds at extremely low levels for an additional year, until late 2014. This action places the Federal Reserve on an even more aggressive monetary policy footing.

The Federal Reserve continues its aggressive monetary policy stance.

The second policy was even more consequential: the Federal Reserve adopted an explicit inflation target. It noted, "[t]he inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation."[22] The FOMC determined that a 2% inflation rate, as measured by the annual change in the price index for personal consumption expenditures, was most appropriate.

Articulating an explicit inflation target was a significant, positive step toward a more rules-based and predictable monetary policy.

Articulating an explicit inflation target was a significant, positive step toward a more rules-based and predictable monetary policy. Many central banks, including the Bank of England, the European Central Bank, and the Reserve Bank of New Zealand, have successfully

executed monetary policy by using an explicit target for the price inflation rate.[23] The benefits of these targets are three-fold: (1) they increase accountability for monetary policy at the central bank; (2) they increase transparency of central bank monetary policy formation; and (3) they increase the independence of the central bank relative to elected policymakers.

However, the Federal Reserve needs to articulate its inflation target with more specificity.

However, there exist unknowns related to the Federal Reserve's implementation of its new target. A primary question relates to the Federal Reserve's tolerance for short- to medium-term inflation, which can also be damaging to economic growth and job creation. Does the new 2% long-term inflation target allow for 5% inflation, or perhaps more, over a short-term time horizon? If so, the current articulation would be insufficiently restrictive. What is the highest tolerable rate of inflation over 5 years? 10 years? The answers to these questions go to the heart of the Federal Reserve's commitment to price stability. A related question focuses on the 2% inflation target itself. Is the 2% inflation rate a middle point, a lower bound, or an upper bound? Again, this kind of clarification is important to revealing the Federal Reserve's true intention with its new policy.

POLICY RECOMMENDATIONS

The Federal Reserve's monetary policy deviations in the period between 2002-2005 contributed to a destructive housing bubble; and new discretionary policies in the wake of the financial crisis of 2008 have increased uncertainty in the market and risk higher inflation in the future. These recent decisions represent a distinct shift away from the rules-based policies that characterized the Great Moderation of the 1980's and 1990's. Since it is well understood that predictable, rules-based policies create macroeconomic certainty and spur long-term economic growth and job creation, it would behoove federal policy makers to return to such a rules-based approach. Thus, the Federal Reserve should implement a rules-based monetary policy going forward. This study makes four recommendations that policymakers should adopt, either individually or jointly, in order to increase the likelihood of a more stable monetary policy:

The Federal Reserve is an outlier—only two central banks out of 47 surveyed by the Bank of International Settlements have an equally weighted mandate in additional to price stability.

(1) Create A Single Mandate For Long-Term Price Stability

The Federal Reserve's dual mandate—stable prices and maximum employment—has been in place since 1977. However, in practice, most central bankers have focused their efforts on achieving long-term price stability. In fact, among the 47 central banks and monetary authorities surveyed by the

Bank if International Settlements in 2009, only the Bank of Canada and the Federal Reserve have additional mandates that are equal to the weight of price stability.[24] This is because a consensus exists among economists that monetary policy only affects real output and employment levels in the short term, whereas fundamental market factors (e.g., productivity growth and innovation, which are largely driven by budget, tax, and regulatory policies) affect real output and employment levels in the long term. Because an environment of price stability is conducive to long-run economic growth, achieving long-term price stability necessarily maximizes the sustainable positive effect that monetary policy can have on long-term employment levels.

The dual mandate opens the door to more discretion at the Federal Reserve.

A recent study by the vice president of the Federal Reserve Bank of St. Louis, Daniel Thornton, echoes this analysis and provides an additional perspective through a historical analysis of the FOMC's statement of policy objectives.[25] Interestingly, until December 2008, the Federal Reserve had never mentioned the maximum employment prong of the dual mandate in its statement of policy objectives (which is found within the policy directive the FOMC votes on every six weeks)—a period covering almost 30 years since the dual mandate was created. This first mention occurred just before the Federal Reserve began its first large-scale asset purchase program (QE1). Again, in November of 2010, as the second program (QE2) program was initiated, "[r]eference to the objective of maximum employment was more prominent."[26] Although it is unclear whether these references indicate a substantive change in Federal Reserve policy, they do suggest that Federal Reserve governors might be using the maximum employment prong of the dual mandate as a "cover" for engaging in unconventional and discretionary policies.

Shifting to a single mandate for long-term price stability will focus the Federal Reserve on what it can control and strengthen its independence.

The best way to achieve maximum real output and employment through monetary policy is, in fact, to achieve stable prices; and given the Federal Reserve's possible use of the dual mandate as a basis for engaging in disruptive, discretionary policies, policymakers may want to consider simplifying the Federal Reserve's mandate to include only stable prices.[27]

(2) Require the Federal Reserve to Monitor Asset Prices for Signs of Incipient Asset Price Bubbles

Conventional measures of inflation, including the CPI, missed the last asset bubble.

The Federal Reserve should monitor whether or not its selected price index fully captures price movements in the economy. In measuring inflation, the Federal Reserve should consider the effects of monetary policy on asset prices and the potential misallocation of capital. While an easy monetary policy usually flows evenly into the prices of goods and services, an easy monetary policy sometimes flows disproportionately into the prices of certain assets. In such cases, broad-based goods and services price indices (e.g., the consumer price index (CPI), the personal consumption expenditure (PCE) deflator) will not fully capture the price inflation occurring in the economy. As a result, the disproportionate impact of monetary ease on asset prices may cause unsustainable price bubbles in certain assets without broad-based goods and services price indices registering significant price inflation.

As a result, the Federal Reserve should monitor asset prices for signs of incipient inflation.

The Federal Reserve's response to potential asset price bubbles would vary depending upon the circumstances. No consensus exists as to whether a central bank should simply "lean against" asset price bubbles (i.e., factor them into the mix of indicators signaling inflationary or deflationary forces) or take more aggressive actions to "prick" asset bubbles.[28] The policy response might involve monetary policy tightening, supervisory suasion, or regulatory action to reduce the excessive flow of credit to fund speculation in the asset class. Of course, the correct course of action might require a combination of actions. However, regardless of the outcome of the current debate, the impact of monetary policy on individual asset classes should be considered within the context of monetary policymaking.

(3) Restrict Open Market Operations to U.S. Treasury Securities, repurchase agreements, and reverse repurchase agreements during Normal Times

Political allocation of capital will undermine the Federal Reserve independence.

The Federal Reserve's post-crisis purchase of over $1.25 trillion of residential mortgage-backed securities has been one of its most controversial actions in recent years, and with good reason. By moving beyond the confines of the U.S. Treasury market (including most repurchase agreements and reverse repurchase agreements, which are collateralized by U.S.

Treasuries), the Federal Reserve began allocating credit to selected markets, such as the residential mortgage market, which now features artificially low mortgage rates dampened by the Federal Reserve's purchase program.

The Federal Reserve faces a fundamental threat to its ability to independently conduct U.S. monetary policy when it begins allocating credit outside of the U.S. Treasury market—therein politicizing its actions. Initially, the Federal Reserve's RMBS portfolio was set to run off over time, as mortgages were refinanced, homes were sold, or principal was repaid over time. However, in September 2011, the Federal Reserve reversed this policy and announced that it would begin reinvesting the principal payments from its holdings of federal agency RMBS—thereby holding constant its position in the market—instead of allowing it to taper off as originally proposed. It may or may not be coincidental that the Fed's policy reversal coincided with intense political pressure to support the ailing housing market in order to spur a more robust recovery. Regardless, what is clear is that the Federal Reserve should not insert itself into political debates unless it is absolutely necessary under circumstances similar to those required for the Federal Reserve to invoke its 13(3) authority to extend emergency loans.

(4) Require the Federal Reserve to Articulate a Clear Lender-of-Last-Resort Policy to Govern Future Crises

In the wake of the financial crisis, Chairman Bernanke justified the extraordinary steps taken by the Federal Reserve to bail out several firms that were previously outside its regulatory purview by noting, "Because the United States has no well-specified set of rules for dealing with the potential failure of systemically critical non-depository financial institutions, we believed that the best of the bad options available was to work with the Treasury to take the actions we did to avoid those collapses."[29] To be sure, in its nearly 100 year history, the Federal Reserve has never clearly articulated its lender-of-last resort strategy.[30] Well-known economist and Federal Reserve historian Allan Meltzer clearly describes the problems this policy void creates:

In its nearly 100 year history, the Federal Reserve has never clearly articulated its lender-of-last resort strategy.

> *The absence of a [lender-of-last-resort] policy has three unfortunate consequences. First, uncertainty increases. No one can know what will be done.*

The lack of a lender-of-last-resort policy increases uncertainty, encourages political maneuvering by troubled firms, and creates moral hazard.

> *Second, troubled firms have a stronger incentive to seek a political solution. They ask Congress or the administration for support or to pressure the Federal Reserve or other agencies to save them from failure. Third, repeated rescues encourage banks to take greater risk and increase leverage. This is the well-known moral hazard problem.*[31]

Articulating a lender-of-last-resort policy will mitigate these negative consequences.

Requiring the Federal Reserve to clearly establish a lender-of-last resort policy—or at a minimum, a framework or set of guidelines—will decrease uncertainty in the market during a future crisis and mitigate the moral hazards created by the legacy of the recent "too-big-too-fail" bailouts. A clear lender-of-last resort policy will also provide policymakers a benchmark against which oversight can be conducted.

CONCLUSION

This study suggests four possible Federal Reserve reforms that policymakers may want to consider to ensure a stable monetary policy going forward.

(1) Creating a single mandate for price stability;

(2) Requiring the Federal Reserve to monitor asset prices for signs of incipient asset price bubbles;

(3) Restricting open market operations to U.S. Treasury securities, repurchase agreements, and reverse repurchase agreements during normal times; and

(4) Requiring a clear lender-of-last-resort policy.

Each reform seeks stability through increased transparency and predictability. Concurrent with policymakers' consideration of these reforms, the Federal Reserve itself should outline a clear exit strategy from today's discretionary climate and begin fostering a climate characterized by flexible, rules-based policies.

APPENDIX A: UNCONVENTIONAL LENDING FACILITIES AND BAILOUTS		
Federal Reserve Action	***Start Date***	***Description***
Term Auction Facility (TAF)	12/12/2007	The TAF auctioned funds to depository institutions under terms similar to the Federal Reserve's discount window. The TAF initially auctioned up to $20 billion every two weeks, but this amount was increased on several occasions to as much as $150 billion every two weeks.
International Swap Lines	12/12/2007	The Federal Reserve provided dollars temporarily to foreign central banks in exchange for foreign currency collateral and interest, enabling them to stabilize dollar-based markets within their jurisdiction.
Term Securities Lending Facility (TSLF)	3/11/2008	The TSLF allowed primary dealers (e.g., investment banks) to post collateral and temporarily swap illiquid assets for highly liquid assets such as U.S. Treasuries in order to increase liquidity in financial markets.
Federal Reserve bails out Bear Stearns	3/14/2008	The Federal Reserve facilitated the sale of the investment bank Bear Stearns to JP Morgan through a nearly $30 billion loan—the first financing of a non-commercial bank institution in four decades.
Primary Dealer Credit Facility (PDCF)	3/16/2008	The PDCF sought to improve broker dealers' access to liquidity in the overnight loan market banks use to meet their reserve requirements.
Federal Reserve bails out AIG after allowing Lehman Brothers to fail	9/16/2008	Just days after allowing the investment bank Lehman Brothers to fail, the Federal government effectively nationalized the insurer American International Group and the Federal Reserve lent the firm $85 billion.
Asset-backed Commercial Paper Money Market Fund Liquidity Facility (AMLF)	9/19/2008	The AMLF made non-recourse loans to banks to purchase asset-backed commercial paper. The AMLF would soon be superseded in importance by the creation of the Commercial Paper Funding Facility.
Commercial Paper Funding Facility (CPFF)	10/7/2008	The CPFF was used to purchase highly rated secured and unsecured commercial paper from issuers. It was the first Federal Reserve facility in modern times with an ongoing commitment to purchase assets, as opposed to lending against assets, and the first time in 50 years that the Federal Reserve provided financial assistance to non-financial firms.
Money Market Investor Funding Facility (MMIFF)	10/21/2008	The MMIFF was created to lend up to $540 billion to private sector special purpose vehicles that invest in commercial paper, but the facility expired at the end of October 2009 without ever being used.
Term Asset-backed Loan Facility (TALF)	11/25/2008	The TALF addressed problems in the market for asset-backed securities (ABS). Using this facility, the Federal Reserve made non-recourse loans to private U.S. companies that had a relationship with a primary dealer to purchase recently issued, highly rated ABS.
Federal Reserve bails out Citigroup	1/16/2009	The Federal Reserve worked jointly with the U.S. Treasury and the Federal Deposit Insurance Company to provide a package of guarantees, liquidity access and capital to Citigroup.

[1] Initial investigation into these areas culminated in the enactment of the *Dodd-Frank Wall Street Reform and Consumer Protection Act*. PL 111-203 (July 21, 2010).

[2] *See* Chapter 3, "Design of Fiscal, Monetary, and Financial Policies," *Economic Report of the President together with the Annual Report of the Council of Economic Advisors* (1990).

[3] See Kydland, Finn E. and Prescott, Edward C., "Rules Rather than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy* 85/3 (1977); Barro, Robert J. and Gordon, David B., "Rules, Discretion and Reputation in a Model of Monetary Policy," NBER Working Paper No. 1079 (1983); *see also* Dennis, Richard, "Time-Inconsistent Monetary Policies: Recent Research," *Federal Reserve Bank of San Francisco Economic Letter* (2003).

[4] *See* Greenspan, Alan, "Activism," *Council on Foreign Relations* (March 3, 2011).

[5] "The Great Moderation," Remarks by Governor Ben S. Bernanke at the meetings of the Eastern Economic Association (2004).

[6] Blanchard, Olivier and Simon, John, "The Long and Large Decline in U.S. Output Volatility," Brookings Papers on Economic Activity 32/1 (2001).

[7] For a historical overview of the development of the Taylor rule, *see* Also, Pier Francesco, Kahn, George and Leeson, Robert, "The Taylor Rule and the Transformation of Monetary Policy," *Federal Reserve Bank of Kansas City Research Working Papers RWP 07-11* (2007).

[8] *The general formulation of the Taylor rule is as follows:* $i_t = rr^* + \pi_t + \beta(\pi_t - \pi^*) + \gamma(y_t - y^*)$*; where* i_t *is the recommended policy rate;* rr^* *is the equilibrium real interest rate (assumed to be 2% in the original formulation of the Taylor rule);* $(\pi_t - \pi^*)$ *is the difference between the inflation rate and its long-run target (with* π^* *assumed to be 2% in the original version); and* $(y_t - y^*)$ is the output gap, or the difference between real GDP and potential GDP; and β and γ are both set to 0.5 in the original version. *See* Kahn, George A., "Taylor Rule Deviations and Financial Imbalances," Federal Reserve Bank of Kansas City (2010).

[9] *Ibid*. at 65.

[10] The 12 voting members consist of "the seven members of the Board of Governors of the Federal Reserve System; the president of the Federal Reserve Bank of New York; and four of the remaining eleven Reserve Bank presidents, who serve one-year terms on a rotating basis. The rotating seats are filled from the following four groups of Banks, one Bank president from each group: Boston, Philadelphia, and Richmond; Cleveland and Chicago; Atlanta, St. Louis, and Dallas; and Minneapolis, Kansas City, and San Francisco. The seven non-voting Reserve Bank presidents "attend the meetings of the Committee, participate in the discussions, and contribute to the Committee's assessment of the economy and policy options." Board of Governors of the Federal Reserve System, "Federal Open Market Committee," *available at* http://www.federalreserve.gov/monetarypolicy/fomc.htm

[11] Taylor, John, "Housing and Monetary Policy," Presentation for the Policy Panel at the Symposium on Housing, Housing Finance, and Monetary Policy, hosted by the Federal Reserve Bank of Kansas City in Jackson Hole, Wyoming (2007).

[12] *See, e.g.*, Kahn, George, "Taylor Rule Deviations and Financial Imbalances," Federal Reserve Bank of Kansas City (2010); Jarocinski, Marek and Smets Frank, "House Prices and the Stance of Monetary Policy," European Central Bank (2008); Ahrend, R., Cournede, B, and Price, R, "Monetary Policy, Market Excesses and Financial Turmoil," *OECD Economics Department Working Papers No. 597* (2008). An alternative theory, posited by Chairman Ben Bernanke, holds that a "global savings glut," which resulted in significant international capital flows into the U.S. economy, was a primary factor in causing the housing bubble. Bernanke, Ben, "International Capital Flows and the Returns to Safe Assets in the United States," Financial Stability Review No. 15, Banque de France (2011).

[13] Kahn, George, "Taylor Rule Deviations and Financial Imbalances," Federal Reserve Bank of Kansas City (2010).

[14] Bernanke, Ben, "International Capital Flows and the Returns to Safe Assets in the United States 2003-2007," Financial Stability Review No. 15, Banque de France (2011).

[15] Carlson, John et. al, "Credit Easing: A Policy for a Time of Financial Crisis," Federal Reserve Bank of Cleveland (2009).

[16] "Maiden Lane Transactions," Federal Reserve Bank of New York, available at http://www.newyorkfed.org/markets/maidenlane.html.

[17] Federal Housing Finance Agency, "Data as of October 1, 2010 on Treasury and Federal Reserve Purchase Programs for GSE and Mortgage-Related Securities," *available at* www.fhfa.gov/webfiles/17990/TreasFED10012010.pdf.

[18] Press Release, Federal Open Market Committee Statement (August 9, 2011).

[19] Historical evidence demonstrates that clear and credible Federal Reserve communications about forthcoming monetary policy actions can influence the policy's effectiveness. *See,* "Central Bank Talk and Monetary Policy," Remarks by Governor Ben S. Bernanke at the Japan Society Corporate Luncheon (2004).

[20] *See,* Bernanke, Ben, Reinhart, Vince, and Sack, Brian, "Monetary Policy Alternatives at the Zero Bound: An Empirical Assessment," Federal Reserve Board (2004).

[21] Press Release, Federal Open Market Committee Statement (September 21, 2011).

[22] Press release, Federal Open Market Committee Statement (January 25, 2012).

[23] Cobham, David (Ed.), "Twenty Years of Inflation Targeting: Lessons Learned and Future Prospects," Cambridge University Press (2010).

[24] Ortiz, Guillermo and Yam, Joseph (Chairs of the Central Bank Governance Group), "Issues in the Governance of Central Banks," Bank of International Settlements (May 2009).

[25] Thornton, Daniel, "What Does the Change in the FOMC Statement of Objectives Mean?" *Federal Reserve Bank of St. Louis Economic Synopses No. 1* (2011).

[26] *Ibid*.

[27] *See* Thornton, Daniel, "The Case for 'Inflation First' Monetary Policy," *Federal Reserve of St. Louis Economic Synopses No. 47* (2009).

[28] For an example of an analysis suggesting "asset prices are relevant only to the extent they may signal potential inflationary or deflationary forces," *see,* Bernanke, Ben and Gertler, Mark, "Monetary Policy and Asset Price Volatility," NBER Working Paper No. 7559 (200).

[29] "Federal Reserve Policies to Ease Credit and Their Implications for the Fed's Balance Sheet," Remarks by Chairman Ben S. Bernanke at the National Press Club Luncheon, National Press Club, Washington D.C. (2009).

[30] *See* Meltzer, Allan H., "Policy Principles: Lessons from the Fed's Past," in *The Road Ahead for the Fed*, Hoover Institute (2009).

[31] *Ibid*. at 22.