"Four Common Misconceptions About the Federal Reserve"

Remarks at the
Boston Economic Club

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Boston, Massachusetts

I would like to thank Chip Case for inviting me to address the Boston Economic Club. Over the years Chip has been a visiting scholar at the Boston Fed and has provided wonderful insights into developments in real estate markets. As you all know, Chip is one of the country's leading experts on real estate – an area that has been the focus of much attention and a lot of difficulties over the last few years.

Normally when giving a talk I try to focus on an important element of the economic outlook, or an important policy action the Federal Reserve has recently taken – and I use data to explain the issue and its relevance.

Today, however, I am going to take a different tack. I still want to use data – never fear – but for a somewhat different reason.

As you know, ever since the financial crisis, the Federal Reserve has been lauded by some for its bold actions and criticized by others. This comes with the territory of being the nation's central bank. Certainly much of the criticism stems from an economy that is very difficult for many citizens. And importantly, some of the criticism is deserved – and we at the Fed truly try to learn when we do fall short.

But some of the criticism stems from what I'll call some "common misconceptions" or assumptions about the Fed.[1] Today I would like to offer a plainspoken defense to some of those common misconceptions. A defense rooted in facts and numbers, to be sure – my rhetorical skills may not win over Fed critics, but the facts and numbers may help them and others understand how the Fed actually operates.

Let me acknowledge, of course, that as important and illuminating as they are, facts and data do not capture the emotion and the frustration of these challenging economic times. At the Fed we appreciate the widespread frustration stemming from the financial crisis, the recession, and the anemic recovery. But to go forward and tangibly improve things, we must use facts to guide our work, and must do a better job of sharing key facts and the data that underlie how and why the Fed takes the steps it does.

Let me add as I always do that my comments reflect my perspectives, not necessarily those of my colleagues on the Federal Open Market Committee or the Fed's Board of Governors.

In recent years the U.S. central bank has taken unusual steps to combat a threatening financial crisis, a severe recession, and a disappointing recovery. By no means were we perfect, but we acted in the public's interest and I'm very supportive of the strong steps taken. I would point out that the U.S. experience in the 1920s and 1930s, and Japan's experience in recent decades, show the even more dramatic economic pain that comes when central banks and national governments act less than forcefully, or declare the crisis over too soon.

However, the extraordinary steps the Fed has taken over the last four years have led to some misconceptions and mistaken assumptions. Central banking and monetary policy are not easy to explain, but the Fed could have done a better job of it. But at the end of the day we've seen the creation of certain misconceptions, not supported by facts, about the U.S. central bank as an institution. The best way to address a misconception is to offer up the facts. So today I plan to address some of the misconceived assumptions about the Federal Reserve and our actions.

It is not surprising the Federal Reserve and other central banks have received an unusual amount of attention of late. We are experiencing historic times, and an unusual confluence of events. We experienced a global financial crisis which underlined the fact that financial markets and financial institutions have a significant impact on the real economy and all of its participants. We have seen in dramatic fashion how increased global interconnectedness, despite its benefits, allows problems to quickly move across national borders. As a case in point, witness the reactions of our own U.S. financial markets to actions occurring, or not occurring, in Greece – a country of less than 11 million people, roughly the size of Ohio – and other countries. Add to this the fact that, both here and abroad, fiscal problems have increasingly limited the response we would normally expect in a severe economic downturn and a painfully slow recovery.

These events, taken together, have made forecasting the future path of the economy quite challenging – and should instill humility about predicting the future, or how future shocks could impact the domestic or world economy.

In response to the crises, the Federal Reserve has been forceful in trying to promote growth and thus reduce the unemployment rate, while achieving core inflation rates close to 2 percent. Other central banks have too. Central banks[2] have attempted to fight the crisis and downturn by dramatically increasing their balance sheets (see **Figure 1**), buying non-traditional assets, and pushing short and long-term rates to new lows to try to create conditions that stimulate economic activity.

Unfortunately, the creative and forceful response of many central banks to a bad economic situation has not often been matched by fiscal policymakers and international officials. Central banks cannot address these economic problems on their own. They can mitigate some of the problems by reducing the cost of credit to individuals and businesses. And make no mistake, while the scale of the problem is great, that should not dissuade us from actions that make even just “a dent.” For instance, an action that reduces the unemployment rate by half a percent does not bring us close to full employment, and does not solve the country’s problems, but nonetheless would perhaps create roughly 750,000 jobs that may not have been created in the absence of the action.

Federal Reserve actions alone cannot solve all the problems affecting the domestic and world economy. But the Fed can carefully weigh the costs and benefits of actions, and where actions can move us closer to better economic outcomes without substantial costs, it can and should take action. In fact, that's exactly what the Fed has been doing, and that is exactly what it should be doing – consistent with the dual mandate given to us by Congress, to do what we can to achieve maximum sustainable employment consistent with stable prices.

With that introduction, allow me now to discuss four common misconceptions about the Fed. To give you an overview, the four assumptions or misconceptions are as follows:

- *The Federal Reserve is not audited and its actions occur without oversight*
- *The Federal Reserve is not a transparent organization*
- *"Printing money" has caused serious inflation*
- *Rates are already low so further monetary policy actions will have no impact on the economy*

There are of course a number of other issues we could discuss, but I think these are important and involve plenty for us to cover today.

Common Misconception 1:
The Federal Reserve is not audited and its actions occur without oversight

In recent years there have been those advocating that the Federal Reserve should be audited. They are right in that the Fed should be audited – but they are mistaken in believing that the Fed is not. In truth the Fed is a heavily audited organization subject to substantial oversight.

This is entirely appropriate given the sensitivity of what central banks do, and the need to do it without reproach.

In truth,

- all twelve Federal Reserve Banks employ professional internal auditors;
- an outside audit firm, Deloitte & Touche, audits our financial statements;
- the Federal Reserve's Inspector General, created by Congress, audits our activities;
- the U.S. Government Accountability Office audits our actions, and
- Congress, which created the Federal Reserve System, provides significant oversight regarding Fed actions, as demonstrated by frequent requests to testify before committees – and by legislation over the years that has altered our role.[3]

But as one who loves data and facts, let me say a bit more to be quite specific on this matter.

We produce an annual report that includes audited financial statements and a letter from me as CEO attesting to effective internal controls, based on the work of our internal audit and risk-management teams. We include a letter from Deloitte & Touche attesting that we have maintained in all material respects effective internal control over financial reporting.

We are also audited by the Office of Inspector General, created by Congress to provide independent oversight over the Federal Reserve – with the power to do investigations, inspections, audits, and reports. The Inspector General reports to Congress semi-annually – the most recent report covers activities through March and is available on the web.[4]

In **Figure 2,** I list some of the reports by the Inspector General over the past year, all of which are available on the Board's web site. As you can see, the reports cover a wide range of topics.

We are also audited by the U.S. Government Accountability Office (GAO), which conducts audits, investigations, inspections, and reports on behalf of Congress. These reports are publicly available on the GAO web site. **Figure 3** shows some of the GAO reports done in the past year regarding a wide variety of Federal Reserve activities. As with the Inspector General reports, one GAO report covers the operations of the Fed's emergency liquidity facilities, including the one run at the Boston Fed on behalf of the System.[5]

And we have direct oversight by Congress, which requests testimony on a wide range of topics. **Figure 4** lists some of the recent Congressional testimony provided by the Fed's Governors, all of which are available on the Board website. For the sake of brevity this figure does not include the testimony of staff other than Governors. Naturally, Congressional hearings include extensive questioning concerning our actions and policies.

We are an entity created by Congress. Congress can and does change our roles and responsibilities over time. A good example is the Dodd-Frank legislation which increased our responsibilities in some areas (like savings and loan holding company supervision) and curtailed our role in others (such as lending in "emergency and exigent" circumstances).

So in sum we are a heavily audited and supervised organization.

However, I suspect that *some* who argue for more audits of the Federal Reserve may actually be advocating for the politicization of monetary policy. The Federal Reserve was designed by Congress to be a non-partisan organization that conducts monetary policy in the public interest free of political influence. Good monetary policy in the public's long-run interest can involve unpopular decisions in the short run – such as the Volcker-era effort to rein in inflation using very high interest rates. Central banks in developed countries have become independent of legislative bodies and the chief executive precisely because monetary policy has been shown to result in better economic outcomes (e.g., growth, and price stability) when it is not influenced by partisan politics.

I strongly believe that officials in the Federal Reserve conduct policy without regard to partisan politics, and to the best of their abilities try to administer monetary policy in the national interest. This is a hallmark of our organization and should not change.

In sum, the common misconception is that the Federal Reserve is not audited and its actions occur without oversight. The fact is that the Fed is widely audited, and is subject to robust oversight – which is as it should be.[6]

Common Misconception 2:
The Federal Reserve is not a transparent organization

When I first joined the Federal Reserve 25 years ago, the lack of transparency was a very valid criticism of the Fed and most other central banks. However, the fact is that much has changed in the last 25 years – and particularly in recent years.

Let me admit that in the midst of the financial crisis in the fall of 2008 one could fairly say that we did not spend sufficient time explaining to the public the unique and extraordinary actions being taken. All I can say is that in the midst of the crisis there was a focus on solutions, and given the severity of the situation, this resulted in our spending less time communicating well about what we were doing and why. Though no excuse, reacting to a crisis in real time effectively requires something else "give" – and we were frankly so preoccupied with extinguishing the fire we did not explain as well as we should have what we were doing and why. At the Fed we have tried since to explain precisely what we did and why, but we are still some distance from being understood, or fully trusted for that matter.

I think the Fed has learned from this. I would argue that at this point our organization has shifted a great deal compared to two years ago, and at this point we are quite transparent and getting better at it in time.

When I started at the Fed there was no explicit mention of our federal funds target after Federal Open Market Committee meetings, no minutes of the meetings, and no transcript released with a five-year lag. The minutes we provide now are quite detailed, providing a summary of staff presentations, discussion of the views of all participants regarding the outlook for the economy, and discussion of the debate around the policy recommendation.

In addition, we have started providing economic projections after each scheduled two-day meeting – currently four times a year. This provides a summary of the forecasts by the twelve Reserve Bank presidents and the Governors (currently there are five); on variables related to inflation, unemployment, and the growth rate of GDP. We provide both the range of forecasts and the central tendency of the forecasts. And the Fed is continuing to review its communications practices to ensure accountability and increase public understanding.

Also, after the four two-day FOMC meetings the Chairman now conducts a press conference. He fully describes recent policy decisions and the forecasts of the participants in the FOMC meeting, and answers questions posed by members of the press.

And the Federal Reserve has also been communicating more directly with the public. The Chairman has participated in a variety of what for central bankers are less traditional opportunities, from "60 Minutes" to various town hall style meetings, including one last week with soldiers and their families on base in Texas.

The role of the Reserve Bank presidents has also evolved. **Figure 5** lists the speeches I have given this year that like today's include a published text, charts, and an invitation to members of the media. The text and slides of this speech are available to anyone on our public web site. When we can, we make video summaries available as well. We "tweet" some of the main points.[7] And at the end of the speech I will be answering whatever questions you would like to raise.

I also give a variety of informal talks that generally provide condensed versions of some of my previous public speeches. In addition, I have from time to time had interviews with members of the media working in print, radio, and TV. And I am not alone in this respect. My peers have similarly been trying to communicate more about actions we are taking on a range of issues, from monetary policy to supervisory policy to financial stability. We do not always agree on policy matters and this in itself is an indicator of transparency.

Also, there are some areas in which the Federal Reserve is now being more transparent – in part with the encouragement of Congress. The emergency facility loans we made during the crisis are listed on our web site, and information on "Discount Window" loans to banks are provided with a lag.

The reason for this lag is straightforward – not secret for secrecy's sake. As a lender of last resort concerned about financial stability and the continuation of lending during times of financial turbulence, you want institutions that are in generally sound financial condition to turn to the central bank when there is a temporary shortage of liquidity in the banking system – in other words when they have *liquidity* but not *solvency* problems. In the parlance of monetary policymaking, this prevents interest rates from rising significantly during a financial disruption.[8]

However, immediate disclosure might cause financial institutions to view loans from the Fed as stigmatized, possibly raising concerns with depositors and investors, and further contributing to liquidity problems. The Dodd-Frank legislation wrestled with this issue and came up with what I view as a reasonable solution – disclosure of Discount Window loans after two years.

So I fully acknowledge that the Federal Reserve has not always been very transparent – but feel very comfortable attesting that there has been a rather dramatic change over the last two decades, and in particular over the last few years. While we at the Fed continue to examine ways to better explain and describe monetary policy and other aspects of central banking, I would suggest that there are now regular opportunities to hear from Federal Reserve officials directly or via the press, and I am glad that Fed officials are now much more publicly discussing policy actions.

In sum, the common misconception is that the Federal Reserve is not a transparent organization. The fact is that we are quite an open central bank – much better than we used to be – and are improving in this area even as we speak.

Common Misconception 3:
"Printing money" has caused serious inflation

Figure 6 highlights that both bank reserves and the total assets of the Federal Reserve have grown substantially during the crisis, recession, and anemic recovery – with the most rapid expansion occurring in the fall of 2008. The asset expansion is broken out in more detail in **Figure 7**. In the wake of the failure of Lehman Brothers and the freezing up of short-term credit markets, the Federal Reserve established a variety of emergency liquidity facilities. Something that is frequently overlooked is that over time all the loans were paid back with interest and the facilities have been closed. The size of the Fed's balance sheet has still continued to grow, as a result of our large-scale purchases of Treasury and mortgage-backed securities – policy actions we took given the weak economy and our primary policy rate hitting the lower bound of near zero.

However, while the most rapid growth in reserves occurred three years ago, **Figure 8** shows that over the three-year period ending last quarter the U.S. has experienced the lowest average inflation rate of any such period over the past thirty years. Over the past three years, total personal consumption expenditures (PCE[9]) inflation has averaged only 1.2 percent.

Figure 9 shows that in only two of the five most recent three-year periods has total PCE inflation been above 2 percent – and these two periods were ones where food and energy shocks occurred.

We have indeed expanded our balance sheet – some call that "printing money" – but it is a misconception that it has resulted in significant inflation.

The reason why this is so is shown in **Figure 10**, which depicts loan growth at commercial banks over the same three-year periods. Anemic loan growth in the credit crunch era of the early 1990s is one outlier on the chart, and the negative growth in the most recent three-year period is another. In the recent period banks have become more risk averse, and have focused (appropriately) on rebuilding their capital – while many borrowers have had their borrowing capacity weakened by the difficult business conditions of a severe recession and slow recovery. The end result is curtailed lending. Bank reserves are not going to be inflationary when bank lending is not expanding.[10]

Let me be quick to stress that inflation would be serious and detrimental at higher levels. I am not suggesting otherwise. I am just pointing out some facts that suggest it is currently very restrained.

Indeed, other market indicators show little evidence of concern over inflation. The 10-year U.S. Treasury bond has fallen to around 2 percent, as shown in **Figure 11**. Similarly, other countries where the central banks have expanded their balance sheets to fight the anemic economic conditions also have very low 10-year government bond rates. Evidently investors are not expecting large increases in inflation, or they would demand much higher rates to purchase long-term securities.

As everyone knows, high unemployment goes hand in hand with wages and salaries growing very slowly, at least for most jobs. Given the current conditions in the job market, there is little upward pressure on wages and salaries – and this means that there is little reason to expect significant inflationary pressures as higher labor costs push up higher end prices. I would add that while measures of money such as M2[11] have grown rapidly of late, much of that growth reflects investor risk aversion – investors moved funds to bank accounts during the debt ceiling discussion in August and in light of the European problems that have emerged more recently.

Finally, I would note that one country where the central bank expanded its balance sheet significantly, some time ago, is Japan. The Japanese central bank began expanding its balance sheet more than a decade ago but rather than experiencing rapid *in*flation, they have been concerned with *de*flation, as shown in **Figure 12**. Deflation – which is not my forecast at this point, let me say – can be extremely difficult to overcome, as consumers expect products will be cheaper in the future, wages and salaries decline, and debtors face high real interest rates.

Make no mistake, the Federal Reserve will need to remove its current policy accommodation as the economy improves. The current level of bank reserves would not be appropriate if we were at full employment – such accommodation would indeed be inflationary in that situation. However, that is not the situation the country is in now, and I fully expect we will remove accommodation appropriately as the economy improves.

In sum, the common misconception is that "printing money" has caused serious inflation. The fact is that inflation has remained extremely restrained during this period of accommodative monetary policy necessitated by economic conditions.

Common Misconception 4:
Rates are already low so further monetary policy actions will have no impact on the economy

The empirical evidence shows that Fed purchases of Treasury and MBS securities did cause market interest rates to fall. While rates can be impacted by a variety of factors – for example if the economy were to show signs of rapid growth you would expect rates to rise – 10-year rates now are much lower than they were before we undertook our actions.

It is unlikely that lower rates would have no impact on the economy. Such an assumption would be quite a leap of faith, because in general further lowering rates would:

- impact home purchases – because lower rates can have a big impact on cash flow of consumers;
- impact consumer durables like cars – because auto-loan rates are one of the largest payments many people make each month;
- impact investment – because lower rates improve the potential benefit (the net present value) of investment projects;
- impact exchange rates and foreign trade – as suggested by the complaints heard from some trading partners when the Fed has previously lowered rates;

- impact inflation expectations, which impact real interest rates – given the evidence that one-year inflation expectations did rise when the Fed announced its purchase program last year.

Researchers at the Boston Fed have conducted statistical tests to determine if the reaction to long-term interest rates is different after the crisis, and whether there is empirical evidence that lower interest rates would indeed have no impact. Research by my colleague Giovanni Olivei has found that prior to the crisis our statistical model of the economy would imply that a sustained decline in the 10-year Treasury rate of 100 basis points would lead to a cumulative increase in real GDP over two years of approximately 2.5 percent.

With the reduction in interest sensitivity in housing more recently, the model would imply that a sustained decline in the 10-year Treasury rate of 100 basis points would now lead to a cumulative increase in real GDP over two years of approximately 2 percent – as shown in **Figure 13**.[12] Concerns with falling prices, high unemployment, and limited access to credit have likely all contributed to this lower – but clearly non-zero – response to lower rates in housing markets.[13] The assertion that our rate actions simply will have no impact is not supported by our statistical work.

In sum, the common misconception is that rates are already low so further monetary policy actions will have no impact on the economy. In fact, statistical analysis suggests the opposite.

Concluding Observations

We continue to experience unusual turbulence in financial markets. We had significant financial shocks that impacted the real economy during the crisis and recession, and we remain at risk that financial shocks here or abroad could still impact our economy.

The Federal Reserve, like other central banks, has taken strong action to mitigate the impact and avoid worse outcomes for the economy. As stated at the outset of my talk, the Fed's actions have mitigated problems but we alone cannot quickly restore full employment. That will take time and appropriate actions by international policymakers, U.S. fiscal policymakers, and monetary policymakers.

Thank you for indulging me today as I discussed some common misconceptions about the Federal Reserve. In sum, I believe the facts show that the Fed remains an organization with significant oversight, which has substantially increased its transparency, and continues to pursue actions consistent with our Congressional mandate to work to the best of our ability to achieve maximum employment consistent with stable prices, in the national interest.

Thank you, and I would be happy to take a few questions now.

NOTES:

[1] The American Heritage Dictionary's primary definition of a misconception is "An incorrect interpretation or understanding." I am also thinking of assumptions, which the same dictionary defines as "a statement accepted or supposed true without proof or demonstration."

[2] Even those with only an inflation mandate – unlike the Federal Reserve, which has a dual mandate involving growth and employment as well as inflation.

[3] Such as the Dodd-Frank Act that in many ways altered the actions the Fed could take in a crisis

[4] See http://www.federalreserve.gov/oig/default.htm

[5] That report used our internal audit reports and the Inspector General report, and we provided substantial additional information to the GAO.

[6] For more on this topic see the Board's notes on audits and oversight at http://www.federalreserve.gov/faqs/about_12784.htm

[7] You can follow the Boston Fed on Twitter at "@BostonFed"

[8] You can learn more about the Discount Window in the FAQs section of www.discountwindow.org – specifically http://www.frbdiscountwindow.org/dwfaqs.cfm?hdrID=14&dtlID=75

[9] For an understanding of PCE and other inflation measures see the Public Policy Brief "Inflation Targeting – Central Bank Practice Overseas" by Jane Sneddon Little and Teresa Foy Romano (http://www.bostonfed.org/economic/ppb/2008/ppb081.pdf) which states "The PCE measures the goods and services purchased by individuals and nonprofit institutions. In contrast, the CPI measures the out-of-pocket expenditures of urban households, a smaller set of items than the set covered by the PCE. The two indices also differ in the basket of items included in the PCE is chain-weighted – that is, it changes from quarter to quarter – while the composition of the CPI basket remains fixed."

[10] What we call the money multiplier – whereby reserves generate lending (bank assets) which generates deposits (bank liabilities) that are counted as money – has been severed by the decline in lending.

[11] For a definition of M2 see the *Monetary Policy Report to the Congress* (http://www.federalreserve.gov/monetarypolicy/files/20110713_mprfullreport.pdf) July 13, 2011 – page 37 (footnote 13).

[12] Forthcoming in a research brief entitled "The Sensitivity of Demand to Interest Rate Changes: Has It Changed Recently?" by Vice President and economist Giovanni Olivei.

[13] Tests on other components of the forecast cannot reject that the coefficients we use to model the economy have not changed.

Four Common Misconceptions About the Federal Reserve

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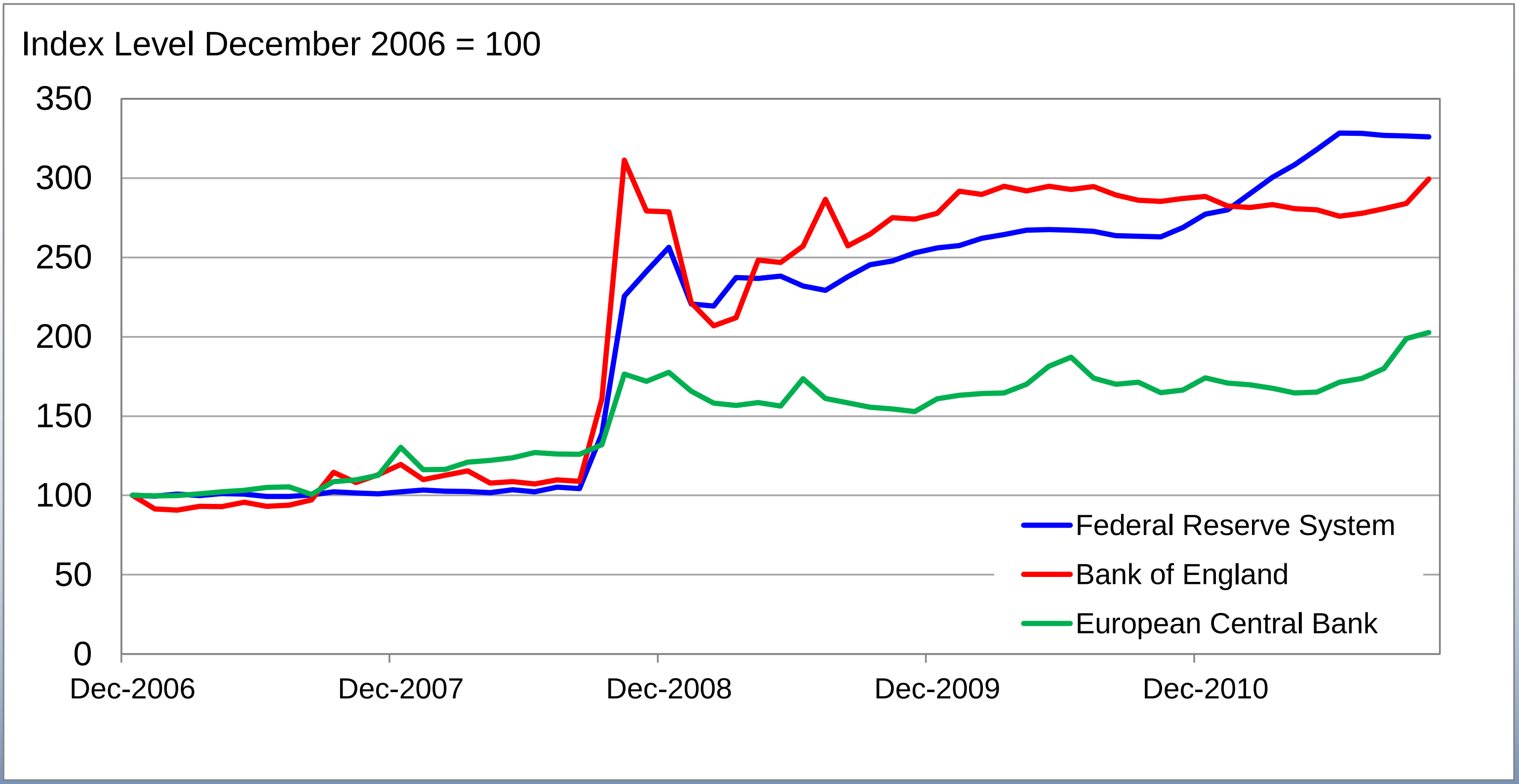
Boston Economic Club

November 16, 2011

Figure 1
Central Bank Assets

December 2006 - October 2011



Source: Federal Reserve Board, Bank of England, European Central Bank, Bloomberg / Haver Analytics

Figure 2
Sample of Inspector General Reports & Bank Supervision Reports

Audit of the Board's Transportation Subsidy Program Audit

Audit of The Federal Reserve's Section 13(3) Lending Facilities to Support Overall Market Liquidity: Function, Status, and Risk Management

Evaluation of Prompt Regulatory Action Implementation

Audit of the Board's Implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act

Audit of Federal Financial Institutions Examination Council Financial Statements as of and for the Years Ended December 31, 2010 and 2009, and Independent Auditors' Report

Evaluation of Joint Response by the Inspectors General of the Department of the Treasury and Board of Governors of the Federal Reserve System to a Request for Information Regarding the Bureau of Consumer Financial Protection

Security Control Review of the Visitor Registration System

Audit of Board of Governors of the Federal Reserve System Financial Statements as of and for the Years Ended December 31, 2010 and 2009, and Independent Auditors' Report

Summary Analysis of Failed Bank Reviews

Evaluation of the Joint Implementation Plan for the Transfer of Office of Thrift Supervision Functions

Figure 3
Sample of GAO Publications

Federal Reserve Board: Opportunities Exist to Strengthen Policies and Processes for Managing Emergency Assistance

Troubled Asset Relief Program: The Government's Exposure to AIG Following the Company's Recapitalization

Federal Reserve System: Debit Card Interchange Fees and Routing

Bank Regulation: Modified Prompt Corrective Action Framework Would Improve Effectiveness

Mortgage Foreclosures: Documentation Problems Reveal Need for Ongoing Regulatory Oversight

Financial Crisis: Review of Federal Reserve System Financial Assistance to American International Group, Inc.

Dodd-Frank Act: Eleven Agencies' Estimates of Resources for Implementing Regulatory Reform

Mortgage Reform: Potential Impacts of Provisions in the Dodd-Frank Act on Homebuyers and the Mortgage Market

Federal Reserve Bank Governance: Opportunities Exist to Broaden Director Recruitment Efforts and Increase Transparency

Troubled Asset Relief Program: Status of Programs and Implementation of GAO Recommendations

Federal Reserve Banks: Areas for Improvement in Information Systems Controls

Banking Regulation: Enhanced Guidance on Commercial Real Estate Risks Needed

401(K) Plans: Certain Investment Options and Practices That May Restrict Withdrawals Not Widely Understood

Figure 4
Sample of 2011 Testimony of Fed Governors

Dodd-Frank Implementation: Monitoring Systemic Risk and Promoting Financial Stability

Assessing the Regulatory, Economic, and Market Implications of the Dodd-Frank Derivatives Title

Credit Ratings Agencies

The Economic Outlook and Recent Monetary Policy Actions

Community Banking

Derivatives Regulation

Dodd-Frank Act

Semiannual Monetary Policy Report to the Congress

Banking Supervision

Mortgage Origination

Statement by Chairman Bernanke on Financial Literacy

Term Asset-Backed Securities Loan Facility

Implementation of Title VII of the Dodd-Frank Act

The Economic Outlook and Monetary and Fiscal Policy

Federal Reserve Lending Disclosures

Banking Supervision and Regulation

Figure 5
2011 Speeches by Eric Rosengren

A Look Inside a Key Economic Debate: How Should Monetary Policy Respond to Price Increases Driven by Supply Shocks?

Remarks at a Forum on Opportunities and Challenges Facing New England's Smaller Industrial Cities

A U.S. Perspective on Strengthening Financial Stability

Defining Financial Stability, and Some Policy Implications of Applying the Definition

Global Financial Intermediaries: Lessons and Continuing Challenges

Towards Greater Financial Stability in Short-Term Credit Markets

Housing and Economic Recovery

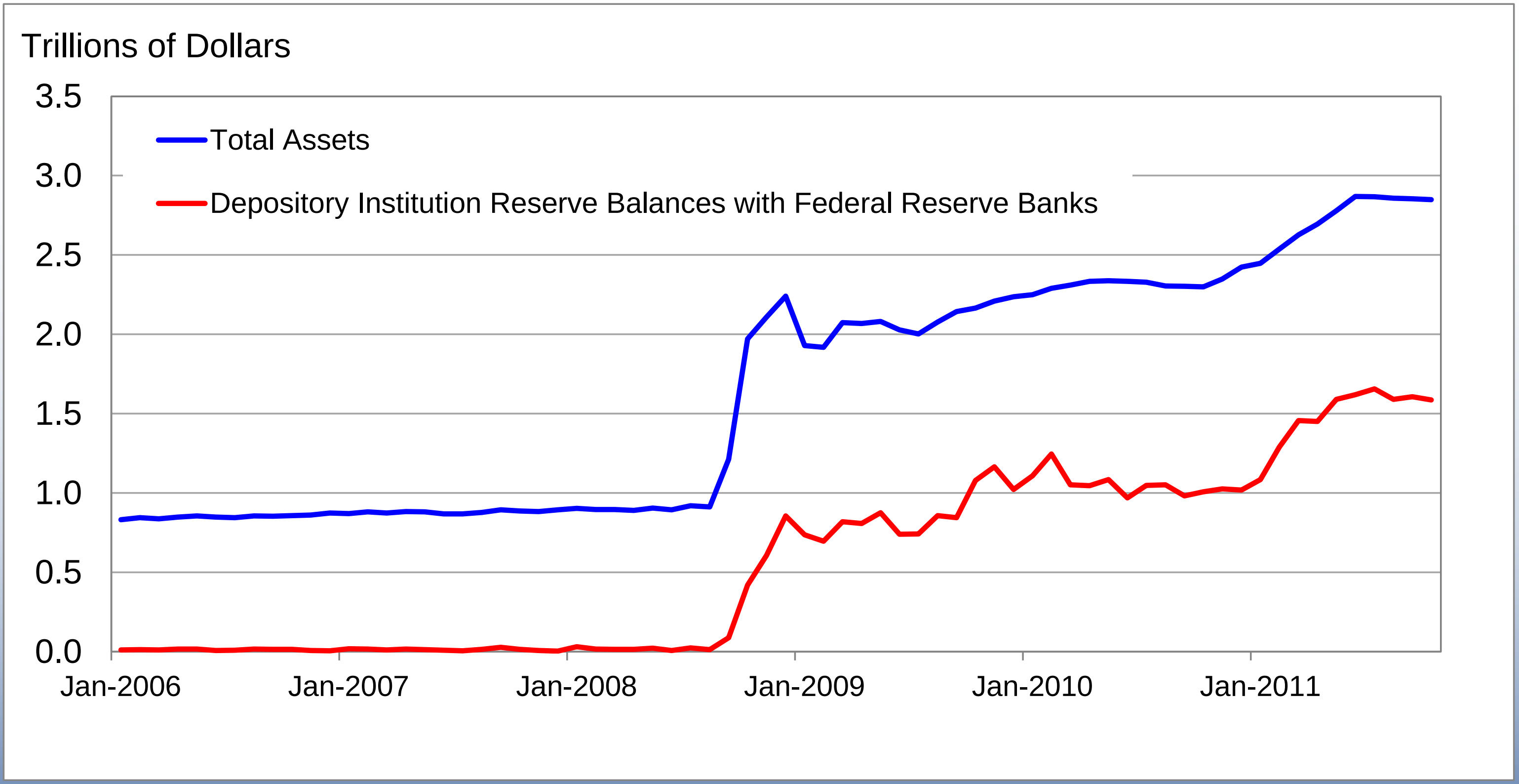
Higher Education and the Economy

The Role of 'Financial Myths' in Financial Crises

Two Key Questions about the Economic Recovery

Figure 6
Federal Reserve System Assets and Reserve Balances with Federal Reserve Banks

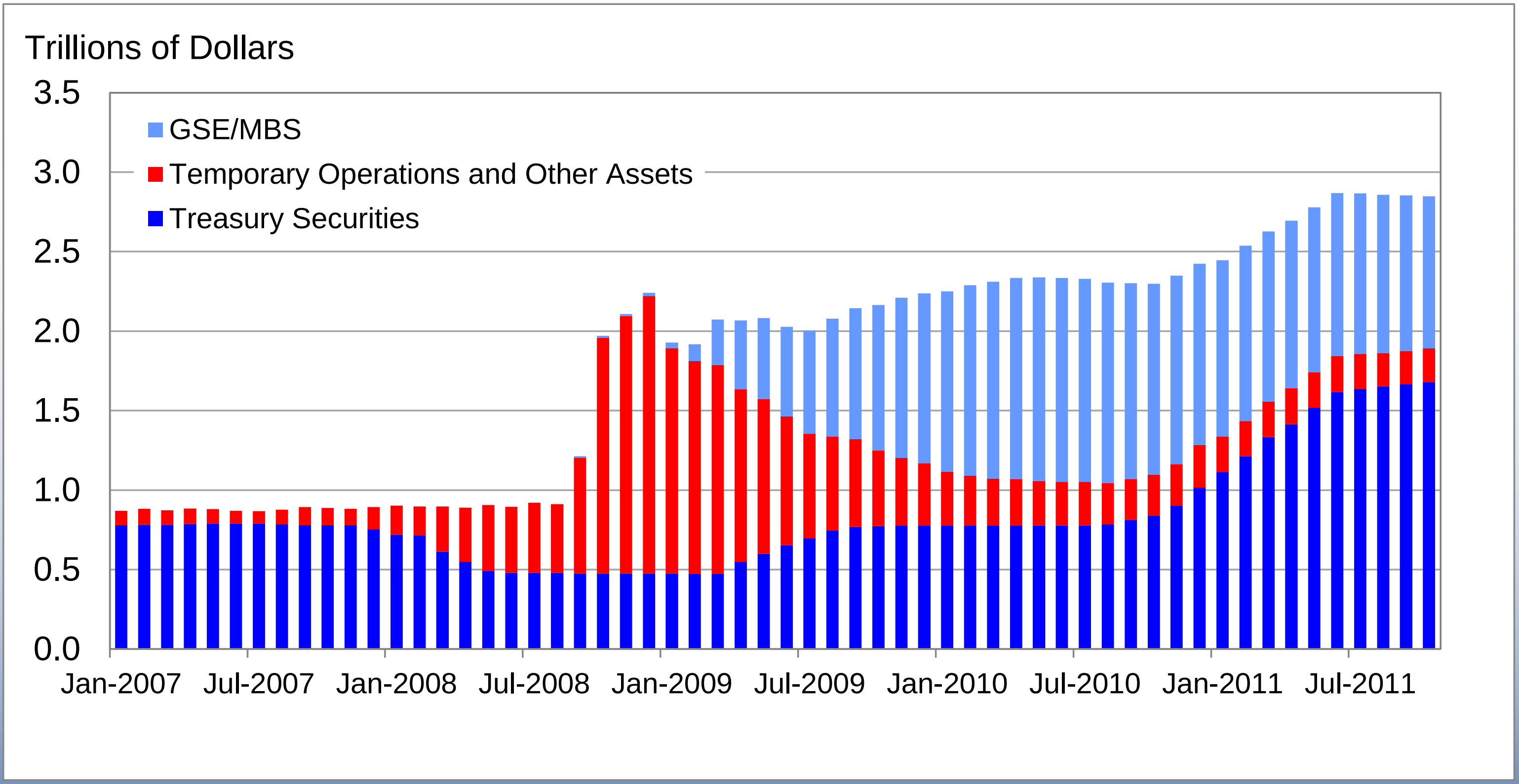
January 2006 - October 2011



Source: Federal Reserve Statistical Release H.4.1 / Haver Analytics

Figure 7
Federal Reserve System Assets

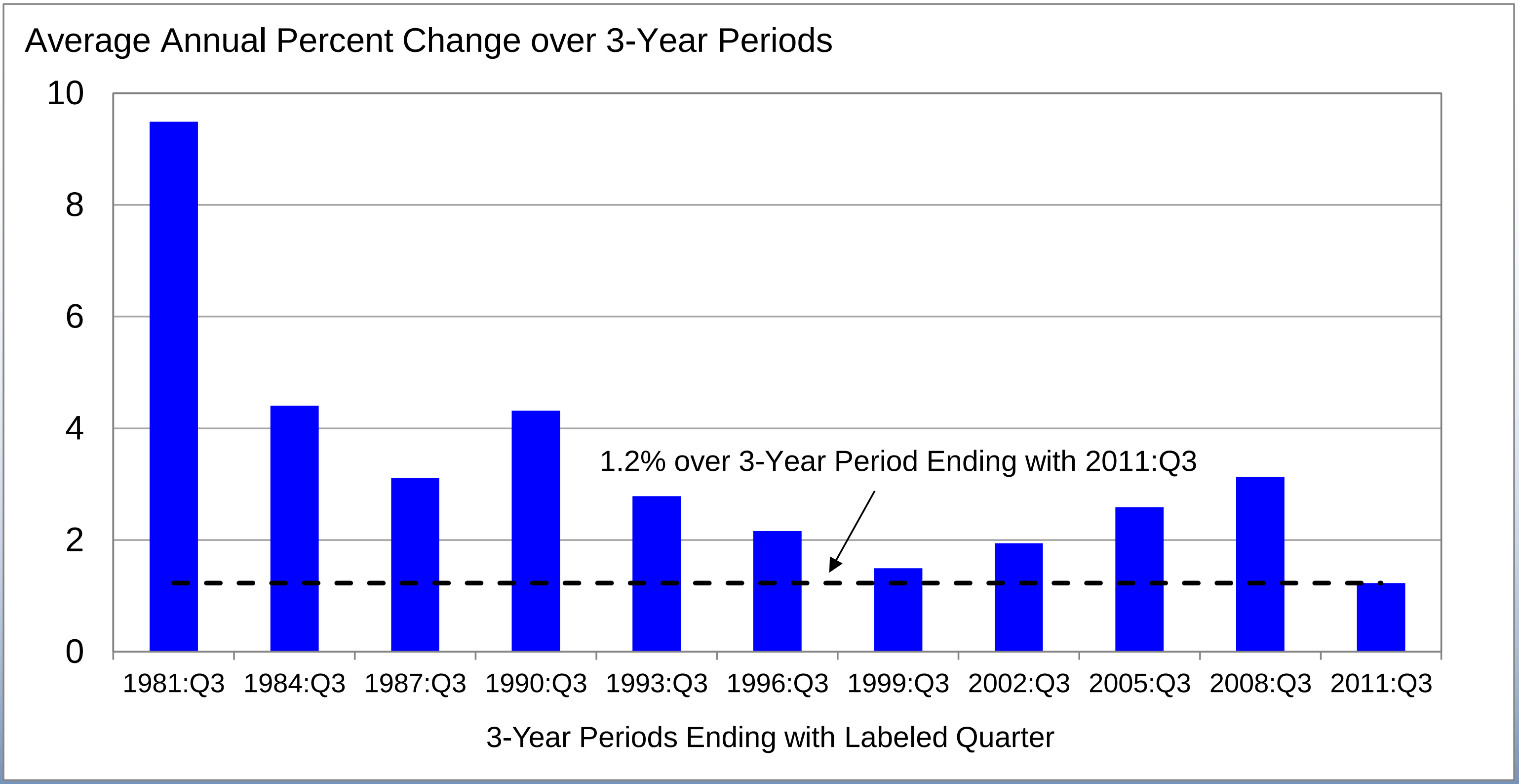
January 2007 - October 2011



Source: Federal Reserve Statistical Release H.4.1 / Haver Analytics

Figure 8
Inflation Rate: Change in PCE Deflator over Three-Year Periods

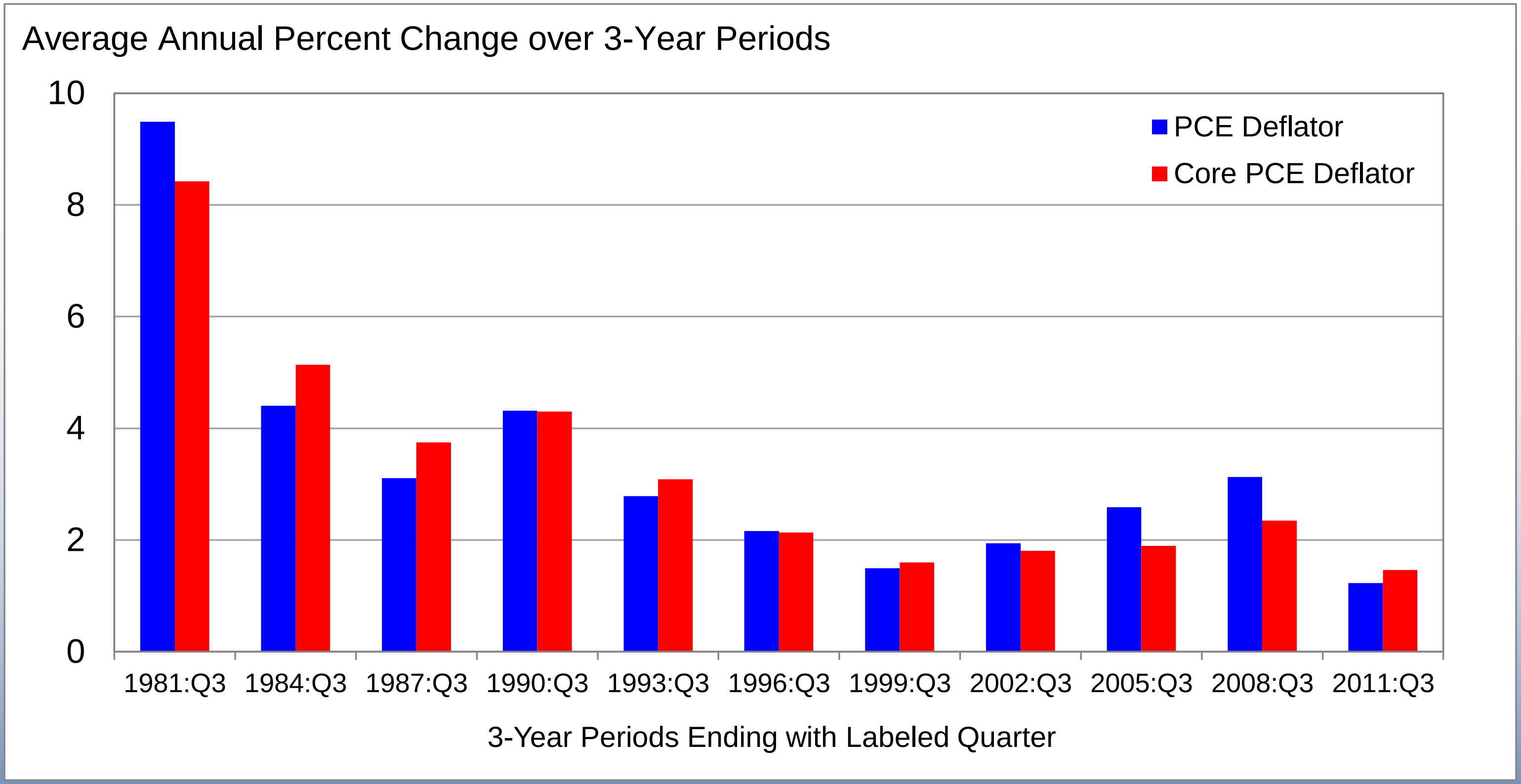
1978:Q3 - 2011:Q3



Source: BEA / Haver Analytics

Figure 9
Inflation Rate: Change in Total and Core PCE Deflators over Three-Year Periods

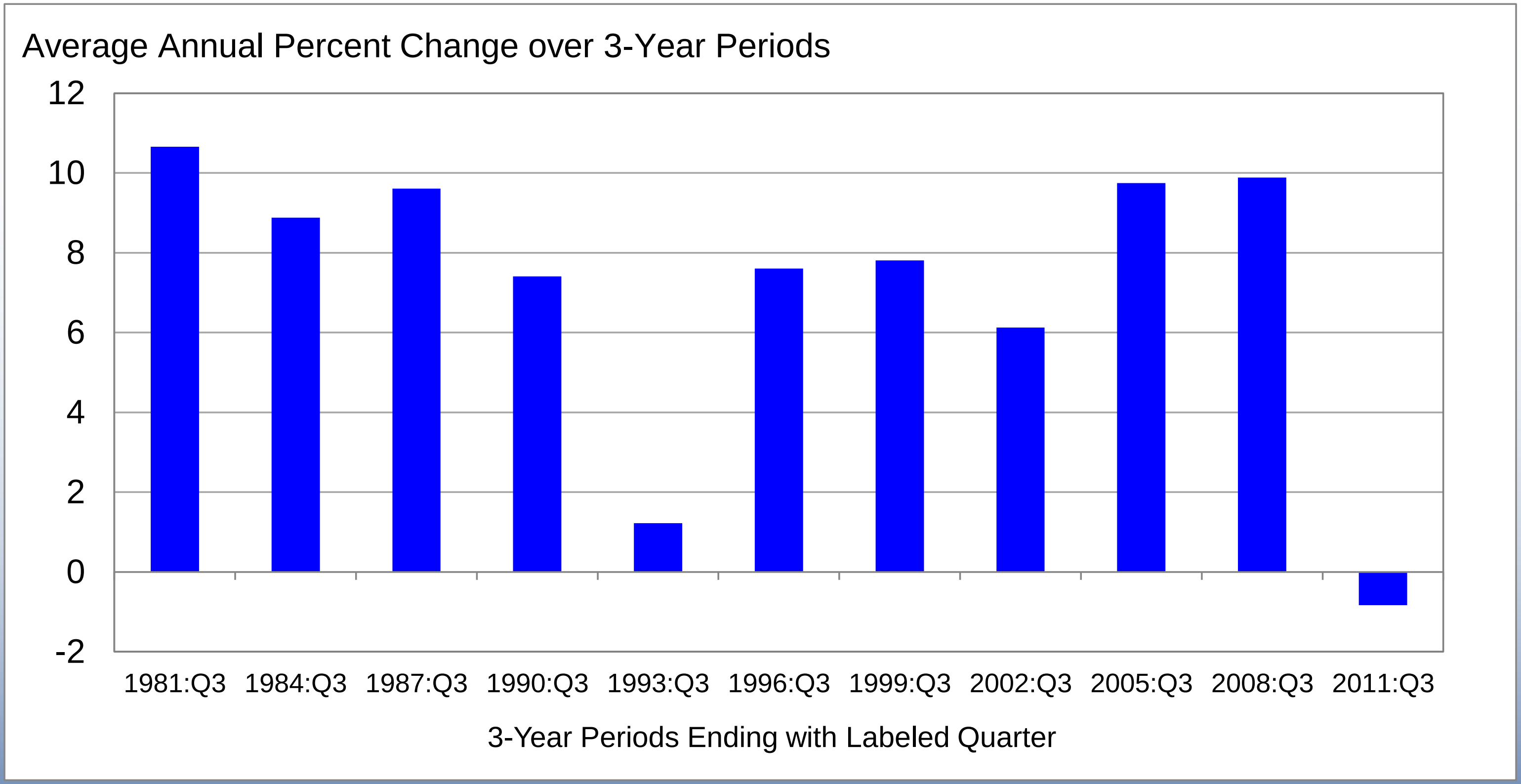
1978:Q3 - 2011:Q3



Source: BEA / Haver Analytics

Figure 10
Loan Growth at Commercial Banks over Three-Year Periods

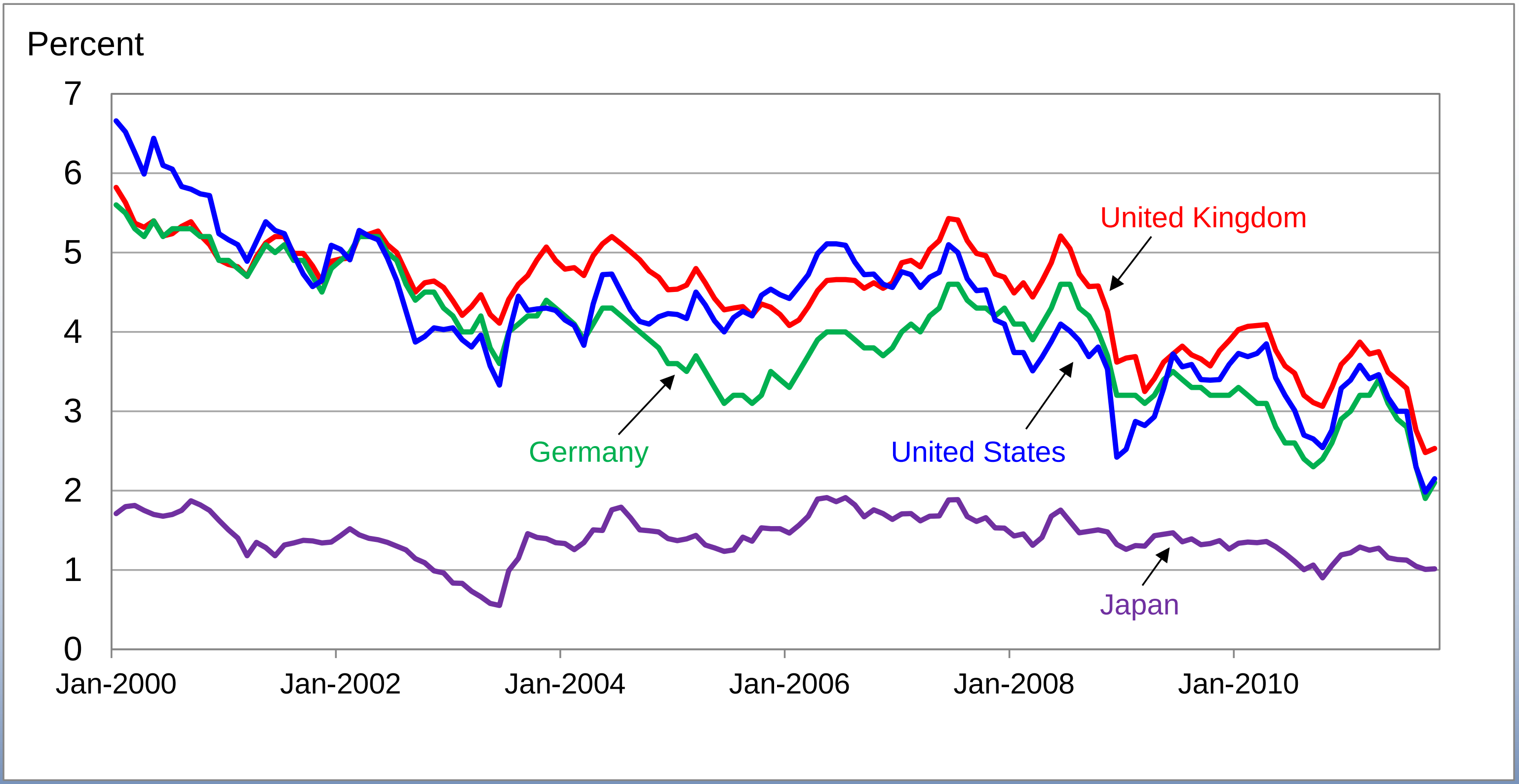
1978:Q3 - 2011:Q3



Source: Federal Reserve Statistical Release H.8 / Haver Analytics

Figure 11
Yields on Ten-Year Government Bonds in Germany, Japan, the U.K. and the U.S.

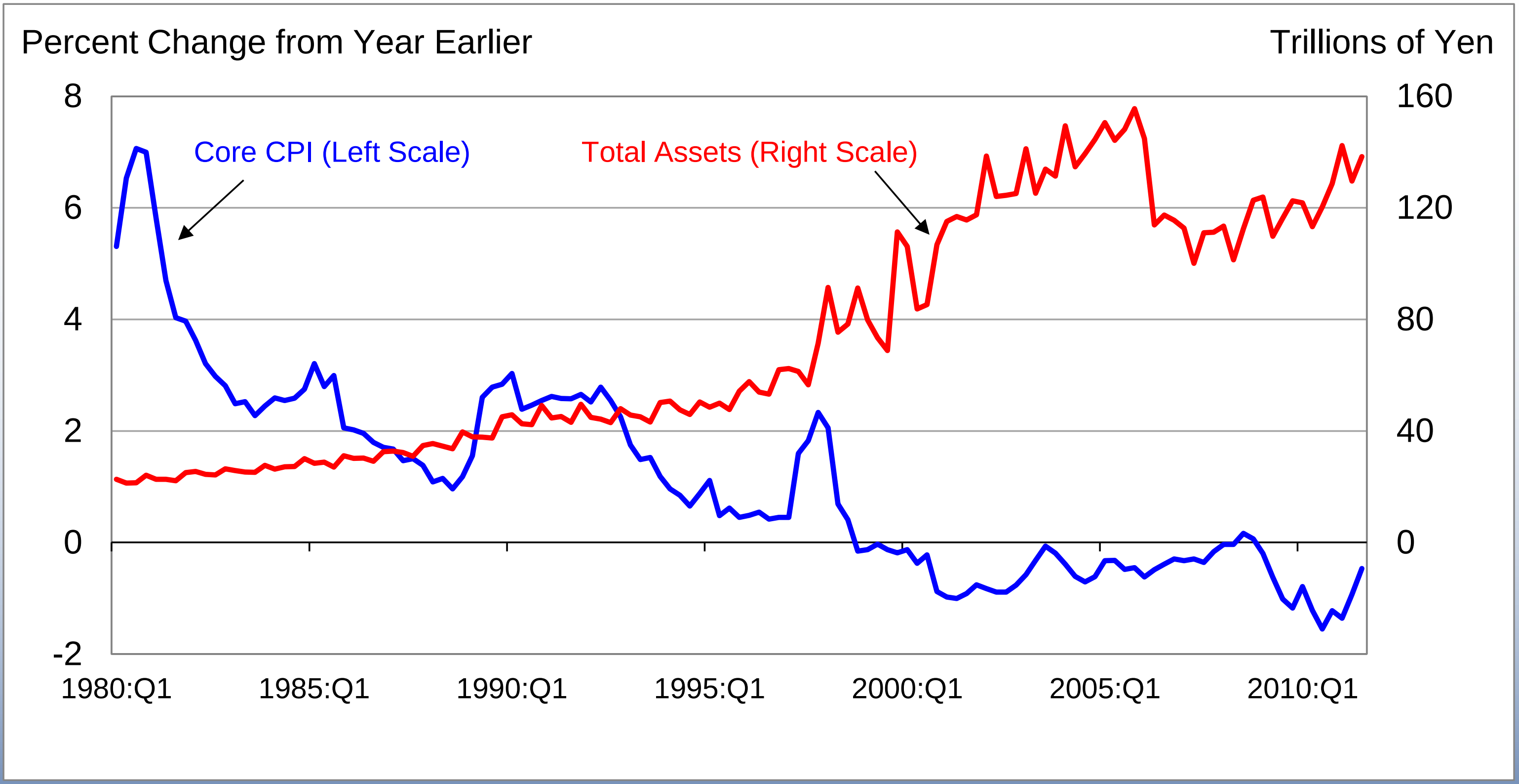
January 2000 - October 2011



Source: Bank of England, Deutsche Bundesbank, Federal Reserve Board, Japanese Ministry of Finance / Haver Analytics

Figure 12
Core Consumer Price Index for Japan and Assets of Bank of Japan

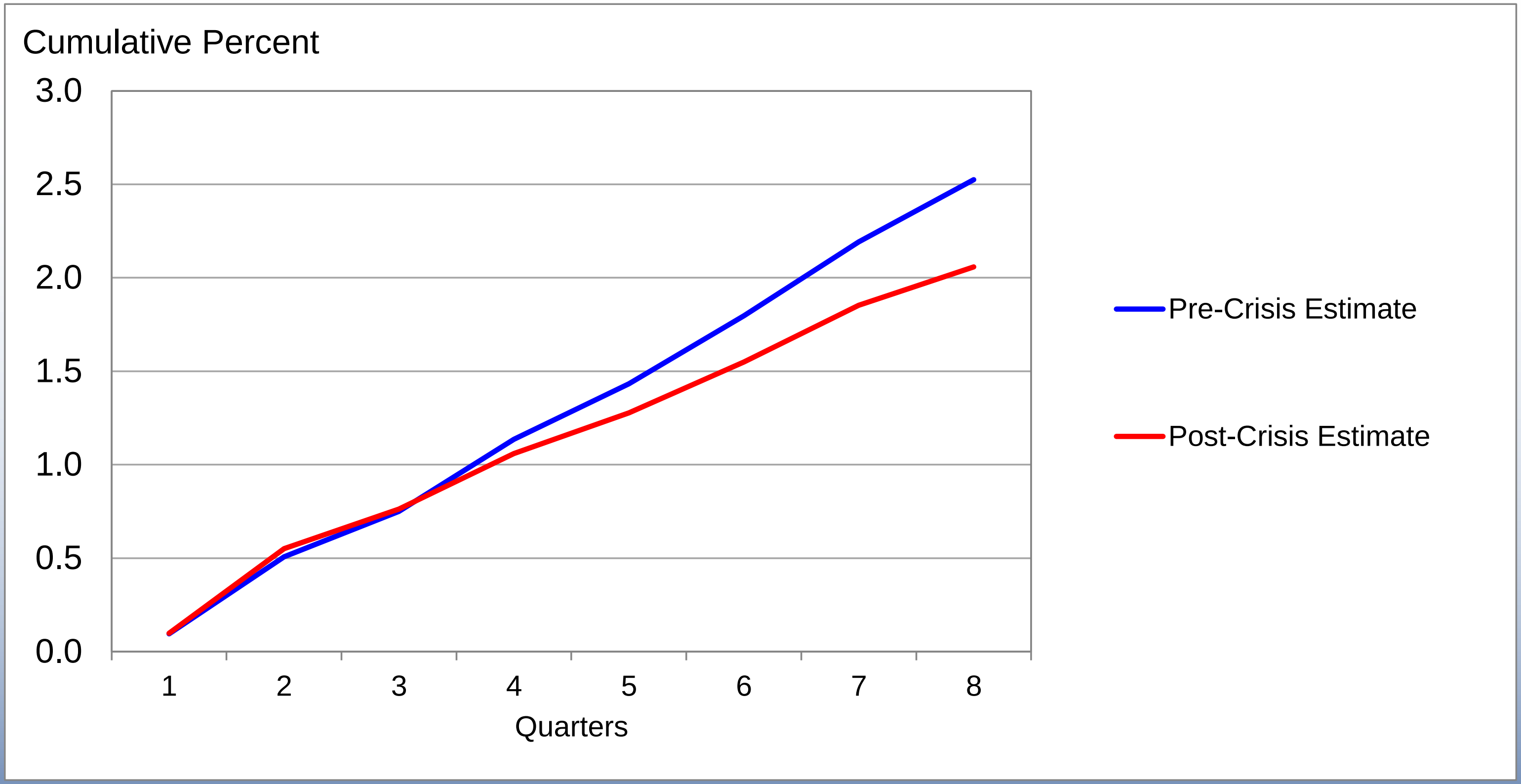
1980:Q1 - 2011:Q3



Note: Western Core – All Items Excluding Food and Energy

Source: Japanese Ministry of Internal Affairs and Communications, Bank of Japan / Haver Analytics

Figure 13
Estimated Responses of Real GDP to a Sustained Decline of 100 Basis Points in the Ten-Year Treasury Yield



Source: Federal Reserve Bank of Boston Research Department Model Estimates