



Five Questions About Current Monetary Policy

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Thank you for inviting me to speak with you here in Providence. Over the past 25 years or so, my family and I have followed and enjoyed the rebirth that happened in Providence – from trying some of the great downtown restaurants to occasionally taking in the WaterFire celebration.

However, I have also witnessed what has happened to many Rhode Island communities over the past three years, as a result of the recession. Rhode Island has suffered to an even larger extent than the rest of New England. Despite the downtown rebirth I mentioned, unfortunately a drive today through Providence includes some empty storefronts and foreclosure signs.

So, it is particularly appropriate to be in Rhode Island to discuss what national monetary policy is doing to address economic problems, here and around the country. *

There has been a great deal of attention paid to the monetary policy actions that were initiated by the Federal Reserve at the last Federal Open Market Committee (FOMC) meeting. There has been much commentary, from a wide range of observers, on our decision to pursue large scale asset purchases. Given the intensity of the public debate, I have decided to take a somewhat different approach today than I usually do in my talks. Today I am going to do my best to answer the five questions I most often hear about these recent monetary policy actions in my conversations and meetings around New England.

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Question 1 is, *Why was policy changed at the November FOMC meeting?*

Before we look at the data, I'll preview my answer. The policy change we at the Fed just announced was consistent with the central bank's mandate, given how far the national economy is from our gauges of health.

Congress, which created the Federal Reserve in 1913, has provided significant guidance over the years on what should be our primary areas of focus. Unlike some foreign central banks that only have one target – price stability – the Federal Reserve has been tasked with pursuing

* *Of course, the views I express today are my own, not necessarily those of my colleagues on the Board of Governors or the Federal Open Market Committee (the FOMC).*

the lowest possible unemployment rate consistent with price stability. So we refer to a “dual mandate,” meaning both maximum employment *and* stable prices.

Members of the Federal Open Market Committee or FOMC – the presidents of the Reserve Banks and the members of the Board of Governors in Washington – all provide quarterly estimates of where we expect inflation and unemployment to be in the long-run. We can consider those long-run estimates to reflect what members see as achieving our dual mandate for price stability and maximum sustainable employment. According to past submissions, most members expect that inflation is likely to settle close to 2 percent and that the unemployment rate is likely to settle between 5 and 6 percent, in the long run.

Obviously the national economy is quite some distance from those long-run targets. And in places like Rhode Island, the gap is even larger. From a national perspective, **Figure 1** highlights that the unemployment rate, which is currently 9.6 percent, has been well above that 5 to 6 percent range for some time, as a result of the long recession. Most of this unemployment likely reflects the dramatic decline in demand for goods and services that characterized the recession. With inadequate demand leading to very high unemployment rates, one would generally expect that such a large gap (in relation to the long-run target) would yield a strong bias towards more accommodative monetary policy.

Turning to the stable prices side of our dual mandate, **Figure 2** shows that core inflation has fallen quite significantly. The core consumer price index or CPI, which had been above 2 percent before the recession, is now below 1 percent. With the current amount of slack in the labor markets, it is certainly possible that inflation could fall further. Thus, on inflation we are also far from where we want and expect to be in the longer run – and we are continuing to

experience disinflationary pressures. Again, such a large gap on the inflation side of our mandate should provide a strong bias towards more accommodative monetary policy.

In short you see unemployment close to double the mandate-consistent target, and inflation about half of what we consider consistent with price stability.

Still, an argument against further monetary easing could be made if one thought the economy was about to take off. But are things about to turn, or turning now – as some suggest? Unfortunately, recent data have not been particularly encouraging. **Figure 3** shows that GDP (shown in blue) grew by only 2 percent in the third quarter. Even less encouraging is the fact that final sales (shown in green) – which is a better measure of demand for our products, since it excludes inventory investment from the GDP number – was quite anemic in the third quarter, and indeed growth in final sales has been falling over the past four quarters. As I have noted in prior talks, we are likely to need four to five years of relatively strong growth (above “potential”) to bring the unemployment rate down significantly (to a rate consistent with “full employment”¹).

Furthermore, **Figure 4** shows that the growth in final sales from the low point of the recession (shown in the dark line extending out five quarters) has been quite weak, and certainly in the weak camp among previous recessions. With these doubts as to the strength of final sales shown in the data, one has to question the likelihood that, other things equal, the economy will grow fast enough to significantly reduce the unemployment rate in an acceptable timeframe and reduce these disinflationary pressures.

With both employment and inflation falling short of the long-run expectations that reflect the Fed’s mandate, one would expect additional accommodative monetary policy. However,

with the federal funds rate close to zero, the Fed's usual policy tool could not be utilized. However, monetary policy can still be conducted. The asset-purchase policy announced at the November FOMC meeting was in my view strongly consistent with our dual mandate from Congress – in other words, the pursuit of maximum sustainable employment and stable prices.

Still, some have argued very forcefully that we should not have taken further action. This leads to the second question.

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Question 2 is, *What is the likely cost of not changing monetary policy?*

Again, as we turn to the evidence, let me sum up my answer to this important and at times overlooked question. Not changing policy risked further disinflation, a rise in the real cost of funds tantamount to monetary tightening, and risks of continued and possibly worsening pain in labor markets. Allow me to explain.

Figure 5 highlights how severe the recession has been, in terms of output. We saw dramatic declines in GDP in the United States (the black line), but the chart shows that many other countries experienced an even *more* severe decline in output, and for some countries it is not clear they have reached their recession trough as yet. Particularly in Europe, where some countries have had sovereign debt problems and significant fiscal austerity, the output decline is striking.

While that chart shows that in fact the impact on *output* was lesser in the U.S. than in many countries, **Figure 6** shows that the impact on *labor markets* here in the U.S. has been more

severe than in most countries; in fact, only severely distressed Spain and Ireland have seen a bigger effect on employment. The U.S., again shown by the black line, is still well below the peak employment of prior to the onset of the recession, and the decline has been more significant than in many other countries. Firms in the U.S. moved particularly aggressively to cut jobs, particularly as the recession deepened in the aftermath of financial problems in the fall of 2008.

Figure 7 shows one of the problems with labor markets remaining extremely weak for a protracted period. The percent of jobless workers who have been unemployed for 27 weeks or more is over 40 percent. This is much higher than in recent recessions, as you can see in the shaded recession sections of the chart. In fact, it is the highest reading on record for this series.

Long periods of unemployment can have particularly corrosive effects. Not only do people have to deplete their savings, but unfortunately long-term unemployed job-seekers can find it quite difficult to re-enter the workforce – because skills may atrophy and because hiring firms may shun those who have been unemployed for a long time. In short, there are real and significant long-term costs to individuals and the economy when the unemployment rate remains stubbornly high.

Allow me to walk you through the next couple of charts, which highlight that it can be *costly to not do anything* to counteract further disinflation. As those of you in this room know, many economic decisions are influenced by the real cost of borrowing. **Figure 8** gives us a historical perspective, going back to 1980, comparing in the top chart the short-term federal funds rate and the inflation rate. The bottom chart shows what you get when you put the two together – the real federal funds rate resulting from the effective rate minus the change in the core CPI.

If we simply narrow the time frame of the chart, as in **Figure 9**, we see clearly that if short-term interest rates are fixed – say at about the zero bound, as now – but the inflation rate declines, then the real interest rate actually *increases*. You see this in the red line on the bottom chart. As a result, a decline in the inflation rate when interest rates are fixed amounts to monetary tightening. Given the state of the economy, a monetary contraction right now is both unintended and undesirable. So we want to prevent any further disinflation – not only because it gets us closer to a harmful deflationary situation, but also because it represents a monetary tightening when conditions are indicating that further accommodation is desirable.

If the federal funds rate was not close to zero right now, the arguments for reducing it – that is, for easing in monetary policy – would be quite strong. However, the federal funds rate *is* quite close to zero. And this leads us to the third question.

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Question 3 is, *How Different are large scale asset purchases (LSAPs) from traditional monetary policy?*

Before we look at the data, I'll preview my answer to this question. Are large-scale asset purchases a fundamentally different policy, either in intent and mechanics? The answer is no, LSAPs are much closer to traditional monetary policy than many commentators assume. We simply move in other markets than the federal funds market. And, like traditional monetary policy actions, we're not talking about "bailouts" or stimulus spending or placing a debt burden on future generations. Let me explain.

In more normal times when the FOMC wants to ease monetary policy, we buy Treasury bills and, in paying the sellers for them², we create additional bank reserves. By making more reserves available to the banking system, we ease conditions in the overnight market for funds – the federal funds market – so the primary impact of these purchases is a reduction in the federal funds rate. But more importantly for the economy, we expect the reduction in the funds rate to over time translate into declines in mortgage rates, corporate bond rates, exchange rates, and a rise in stock prices – all of which of course help stimulate economic activity.

Now that the federal funds rate is near zero and the reserves in the system are quite large, the usual course is not an option. Instead of relying on the indirect effects of targeting a lower funds rate, we are opting to more directly affect the interest rates that have the greatest connection to real spending; by buying Treasury bonds and creating additional bank reserves. Since there are already substantial reserves in the system, the primary expected effect is lowering the long rate by purchasing a significant amount of longer-term Treasury bonds. Like conventional policy, one would expect that mortgage and corporate rates will fall, and exchange rates will be impacted, providing additional stimulus to the economy. That is in fact what has already happened, which leads to Question 4.

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Question 4 is, *What has been the impact of the LSAP to date?*

Before we explore the data, I'll again share the punch line, which is that these policy actions, like more standard reductions in the federal funds rate, have basically had the expected

effects and – despite some short-run volatility as we get under way – should be broadly effective and helpful to the economy going forward.

Starting with Chairman Bernanke’s Jackson Hole speech, the markets have gradually come to expect that more monetary accommodation was likely. As a result, the impact on financial markets of any easing was likely incorporated into prices prior to the actual announcement. The next set of charts highlights that the effects one might expect from a conventional monetary accommodation do indeed seem to have occurred in anticipation of this less-conventional action.³

I should note that while longer rates have been trending down as desired, there has been some recent movement up, too. Lots of things affect rates in the marketplace, but I am certain that our purchases over time will contribute to lower rates than we would otherwise be seeing.

Figure 10 explores inflation expectations, and highlights the fact that the implied inflation rate over the next 10 years as measured by the difference between the 10-year Treasury yield and the 10-year *inflation-indexed* Treasury yield had fallen to well below 2 percent. As the markets began to anticipate the LSAP program, the implied inflation rate has risen to a little over 2 percent. Thus, the action seems to have convinced market participants that further disinflationary pressures in the U.S. were likely to be resisted by monetary policy.

Figure 11 shows that corporate bond rates and mortgage rates have fallen over this period, although there has been an uptick over the last couple of days. Lower rates on these instruments will make it easier for firms to finance investments and for home buyers to purchase homes, all other things equal.

Figure 12 shows that there has been a decline in the U.S. dollar exchange rate. While not a goal of our policies, this should stimulate exports and reduce imports. It is important to re-emphasize that in the U.S., as in any country with a flexible exchange rate system, a modest currency depreciation is the normal consequence of easing monetary policy. By lowering short- and long-term interest rates, investors will, on the margin, seek assets that provide somewhat greater returns than U.S. assets, and in the process, will lower the demand for dollars and depreciate our currency.

While this is an issue that has been passionately discussed in many parts of the globe, I think it is important to note – as shown on **Figure 13** – that the current trade weighted exchange rate is really not much different than what it was before the recession. Exchange rates have at times fluctuated for a variety of reasons during this period, including periods of so-called flight to quality that pushed U.S. rates down, and periods of flight from European currencies as a result of some sovereign debt issues – both of which tended to push the dollar up. At the same time, the data show that the Federal Reserve’s current monetary accommodation to date has merely helped restore the dollar exchange rate to *the level it was three years ago*.

Figure 14 shows that the stock market has generally risen over the last several months, despite some downward movement over the last couple of days. While this is not a targeted goal of our policy, it is an indicator that the combination of lower rates and better economic prospects are being manifested in a rise in stock prices. This increases household wealth for those who own stocks and should provide for somewhat stronger consumption, going forward.

Figure 15 provides some rough estimates of what the impact of the LSAP easing could be, over time, using the Boston Fed’s internal simulation models. While such estimates are by

nature quite uncertain, we estimate that the impact could be a reduction in the unemployment rate by the end of 2012 of a little less than half a percent. This would translate into more than 700,000 additional jobs that we would not have had in the absence of this monetary policy action.

In short this action, like more standard reductions in the federal funds rate, has broadly speaking had the expected short-run effect and should be helpful going forward. This leads to the final question.

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Question 5 is, *What are the risks of the current policy?*

The short answer is that there are – of course – some risks. We should not gloss over them, but neither should we overstate them. I am very confident that they can be managed and are worth taking.

Normally the Federal Reserve buys primarily short-term securities. By purchasing long-term securities the Federal Reserve is in fact taking on the risk that their value will fall as interest rates rise. The reason is that as interest rates rise above the rates paid on the securities we hold, the lower-rate securities we hold will (not surprisingly) fall in value, as investors favor the higher-rate newer-issue securities. Of course, an environment in which most interest rates were rising would imply an economy where disinflation was no longer a problem, which is one of the macroeconomic outcomes the policy is indeed seeking. But in fact the Fed has a number of options and plenty of flexibility to manage the holdings in the best interests of the economy and

taxpayers. We could hold instruments to maturity, or could sell securities of certain maturities. And, of course, interest income will accrue. I believe the most likely net outcome will actually be a benefit to the taxpayer, although that is not the objective of our balance sheet moves (rather, our dual mandate is).

A second risk arises from the fact that the Treasury market is quite large – much larger than the federal funds market in which we normally operate. While relatively small purchases of securities during normal times can be sufficient to move the federal funds rate, it takes large asset purchases to have a significant impact on a market as large and deep as the Treasury bond market. As a result, this policy requires the Federal Reserve to expand its balance sheet much more than would a traditional monetary easing. Large expansions of the balance sheet can complicate exit strategy, when that becomes appropriate. While the Federal Reserve has a variety of tools designed to tighten policy, either by raising interest on excess reserves, removing reserves, or selling securities, some of these tools have not been used in the past. Naturally this makes the exact impact of various tools somewhat more uncertain than normal. Still, I am very confident of the Fed's ability and will to exit, when necessary.

A third risk is that these measures have not been conducted in the United States, at least at the current scale. While there are many similarities with typical monetary policy and several other countries (for example Japan and the U.K.) have also been pursuing large scale asset purchases, the lack of recent U.S. historical precedent makes the possibility of unintended consequences higher than with more typical monetary policy actions.

Another risk is that we might be *too* successful in raising inflation. Thus any policy action needs to take care to make clear that the desire is to maintain well-anchored inflation

expectations. But this can best be achieved by insuring that inflation does not get too high *nor too low*.

Finally, some have argued that the Fed is embarking on a policy of monetizing the federal debt. I would counter that this is a *temporary* monetary policy action taken to return inflation and unemployment somewhat more quickly than otherwise to levels consistent with our mandate. It is a policy designed to help reduce longer term rates over a fixed period of time, not at all a policy to finance government debt indefinitely. I have noted in previous talks that it is important to provide short-term stimulus, given the current economic situation, but that long-run budget projections are not sustainable and will need to be addressed. It is important to note that large scale asset purchases do not necessarily need to use *Treasury*-security purchases to stimulate the economy; indeed in our first round we did so with mortgage-backed securities.

So all in all there are of course risks to evaluate in light of the current state of the economy and our mandate. We are aware of these risks. I fully expect that we will be able to manage them.

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Concluding Observations

As I conclude I would like to reiterate that the actions taken earlier this month are consistent with the important mandates that Congress has set for the Federal Reserve in terms of employment (reflecting growth) and prices. With unemployment so high and inflation unusually low, most models indicate that further monetary accommodation is warranted. In addition, I

believe the cost of having high unemployment rates for an extended period of time, or likewise further disinflation, could be quite high and potentially very damaging.

The recently announced LSAP program has many similarities with more typical monetary policy actions, but of course there are risks with any policy that we have not had significant experience with. Nonetheless, the initial reactions seem similar to what we would have expected from more typical monetary policy. And the Fed has the tools to minimize its own particular risks.

In short, these actions are likely to reduce the unemployment rate and reduce the risk of further disinflation relative to not taking action. This is exactly what I hoped would be the result of the program.

Let me leave you with an analogy – and a seasonally appropriate one at that. This past weekend, many New Englanders woke up to a lawn full of leaves. Many took out their lawn mower intending to get to work picking up those leaves. When pulling on the starter cord, some no doubt heard the engine sputter and cough. The immediate reaction is to fiddle with the choke switch and give a little more gas to the engine. Once you get the engine started and running smoothly, you still have the task of mowing up all those leaves. But you won't make any progress unless you first get the engine operating. And so it is with monetary policy. Our economy has been faltering and sputtering, so it was necessary to take some steps to get it actually "running." Of course this Fed policy will not solve the economy's problems, just as getting the motor started does not in and of itself take care of the leaves in your yard. Solving the economy's problems will take time and actions by the public and private sectors – but getting the economic engine running is the essential first step to the broader work ahead.

Thank you again for having me join you today. I hope that in the future we will gather under very different and much improved economic circumstances, and I can assure you that we at the Federal Reserve will work diligently towards that end.

¹ See my talk “Considering the Routes to a Policy Destination” available at <http://www.bos.frb.org/news/speeches/rosengren/2010/050510/050510b/index.htm>

² The Federal Reserve Act does not permit purchase of new Treasury issues for cash. See chapter 7 or Ann-Marie Meulendyke’s *U.S. Monetary Policy & Financial Markets*, published by the Federal Reserve Bank of New York.

³ Researchers have begun to evaluate the policy channels that are impacted by an LSAP program. For analysis of the Fed’s initial round of purchases of mortgage-backed securities, see for example “Large-Scale Asset Purchases by the Federal Reserve: Did They Work?” by Joseph Gagnon, Matthew Raskin, Julie Remache, and Brian Sack; Federal Reserve Bank of New York Staff Reports, no. 441, March 2010.

1. Why was Policy Changed at the November FOMC?

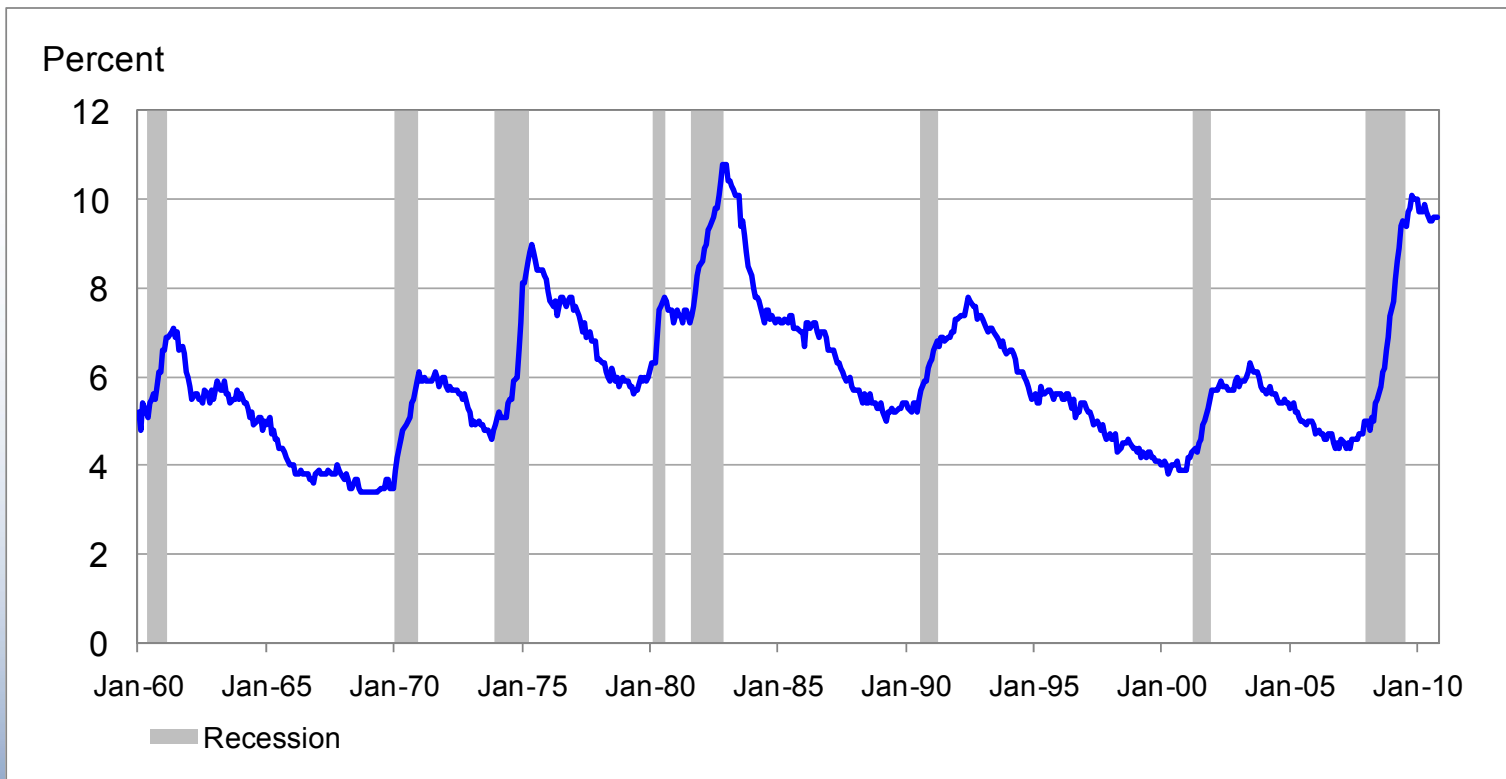
- This is mandate-consistent monetary policy
 - Reflects distance from inflation and unemployment goals:
 - Unemployment is 9.6% – Far above estimates of full employment
 - Core CPI is at 0.8% – Far below the 2% that many believe is consistent with price stability



Figure 1

Civilian Unemployment Rate

January 1960 - October 2010

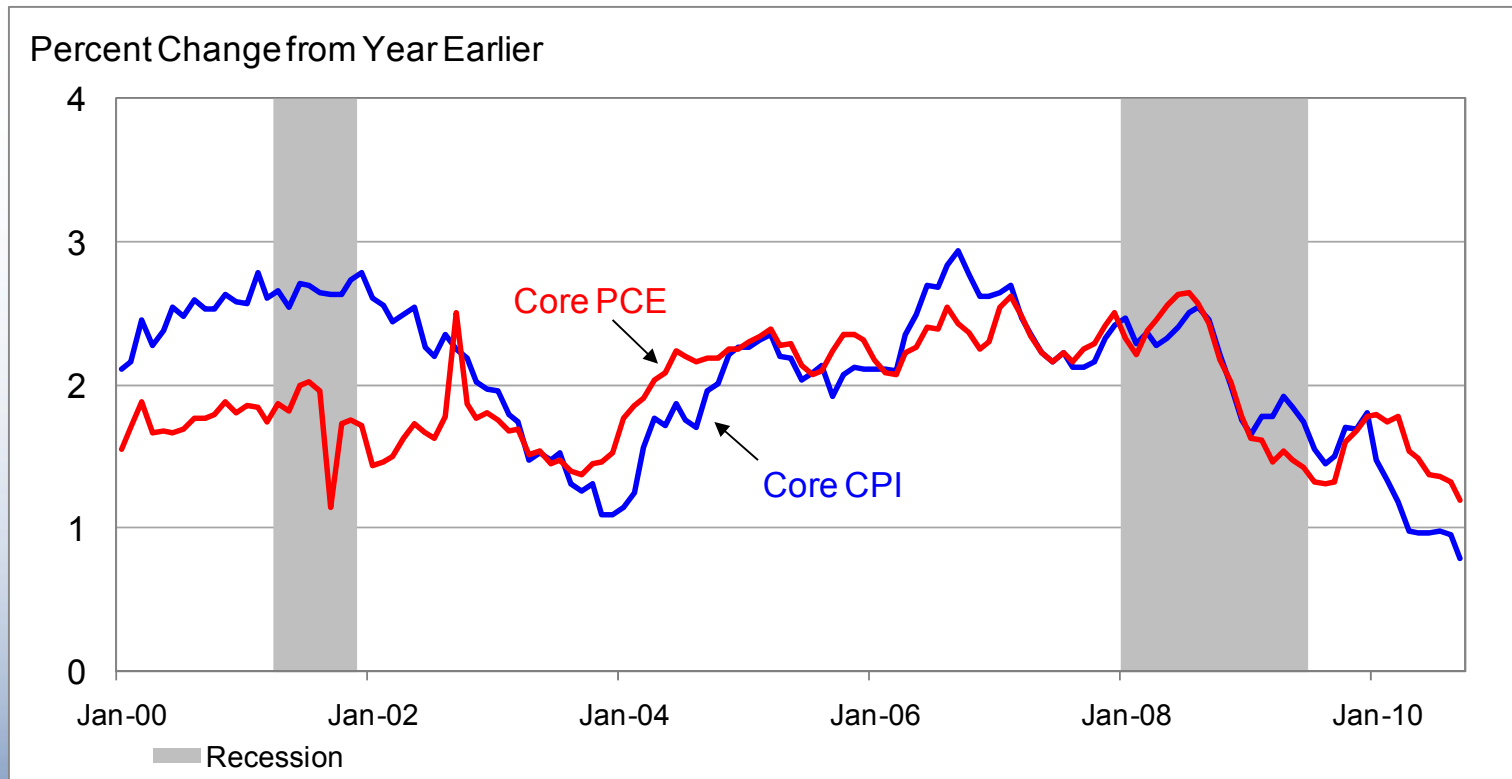


Source: BLS, NBER / Haver Analytics

Figure 2

Inflation Rate: Changes in Core CPI and PCE Index

January 2000 - September 2010

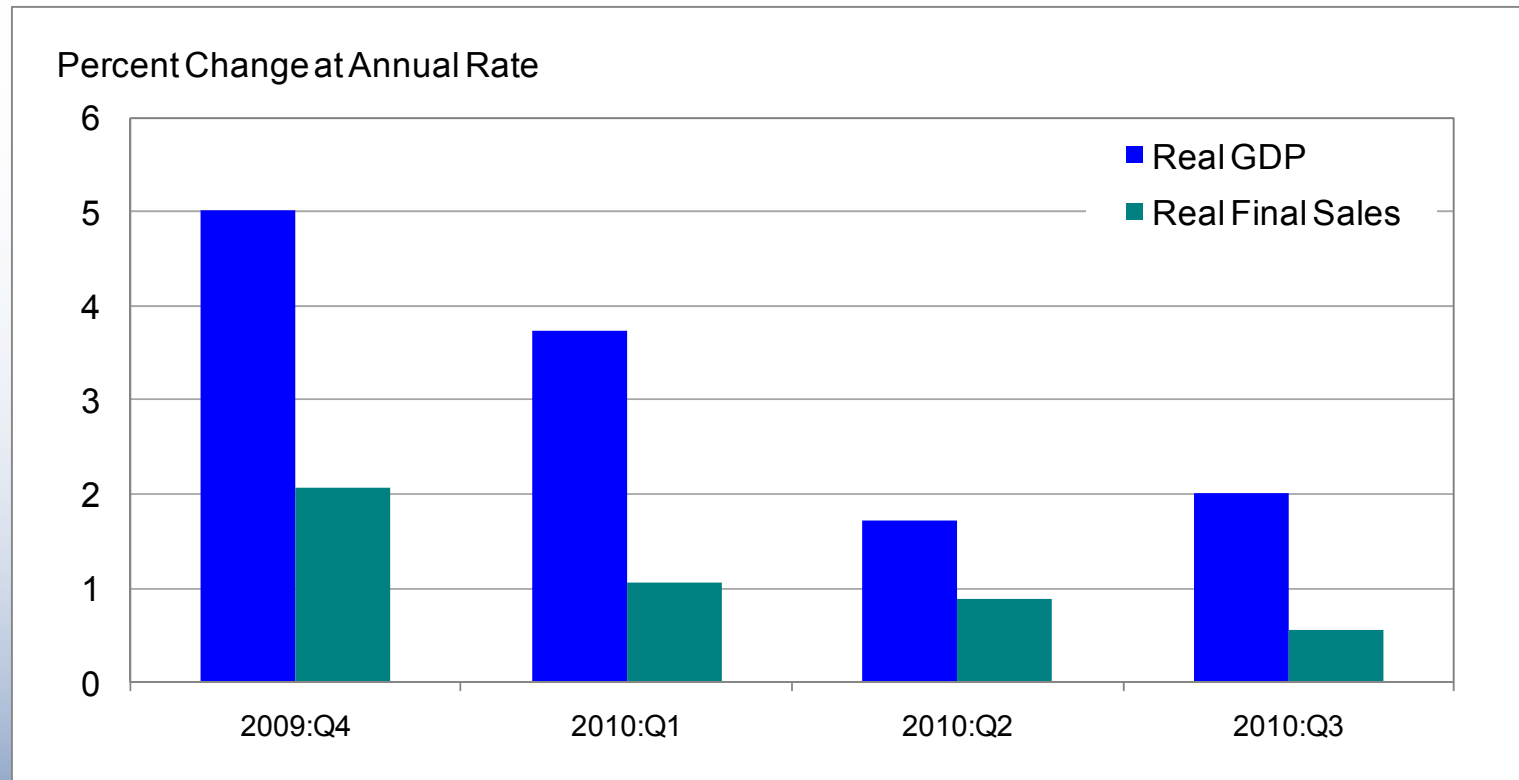


Source: BEA, BLS, NBER / Haver Analytics

Figure 3

Growth in Real GDP and Real Final Sales

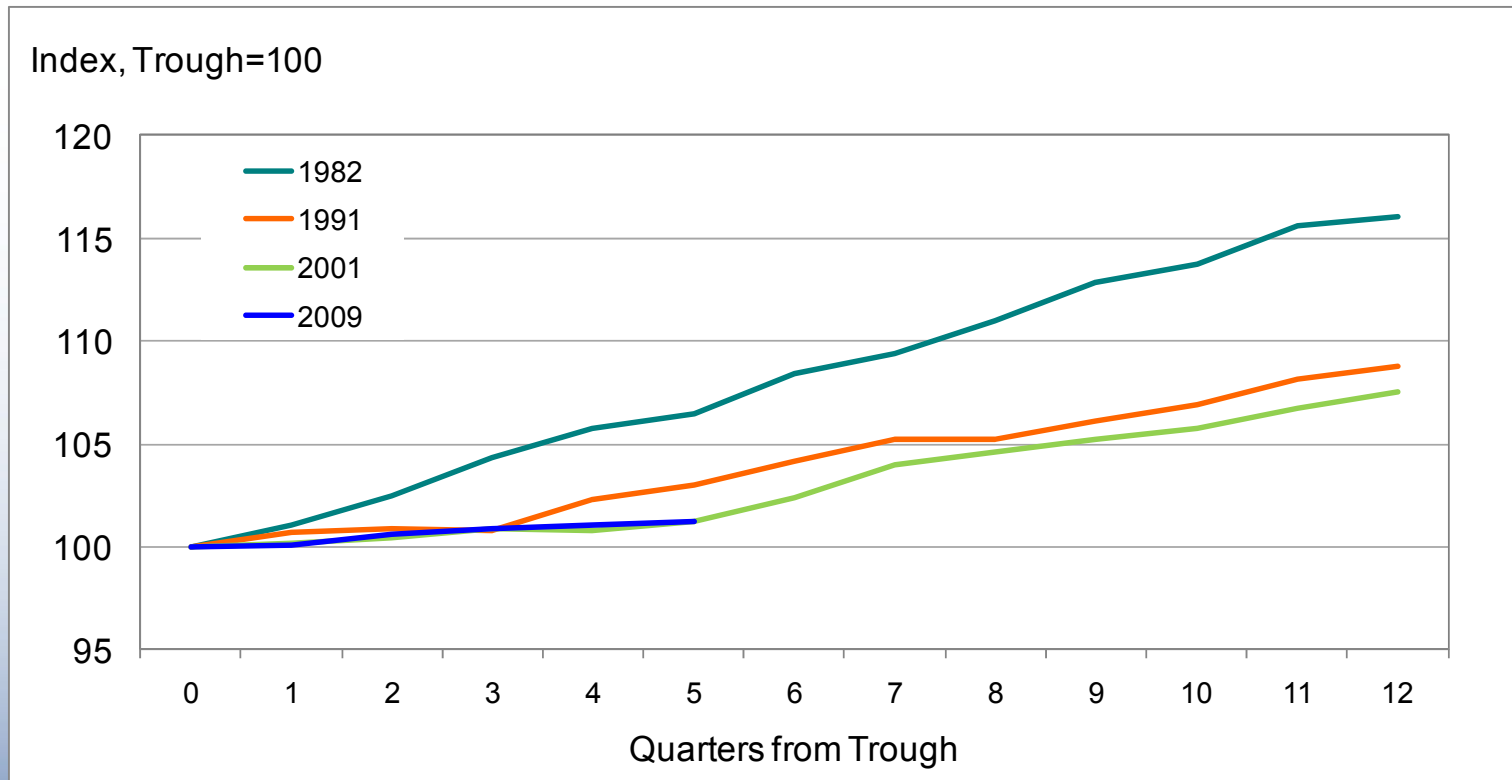
2009:Q4 - 2010:Q3



Source: BEA / Haver Analytics

Figure 4

Growth in Real Final Sales from Trough of Last Four Recessions



Source: BEA, NBER / Haver Analytics

2. What is the Cost of *Not* Changing Policy?

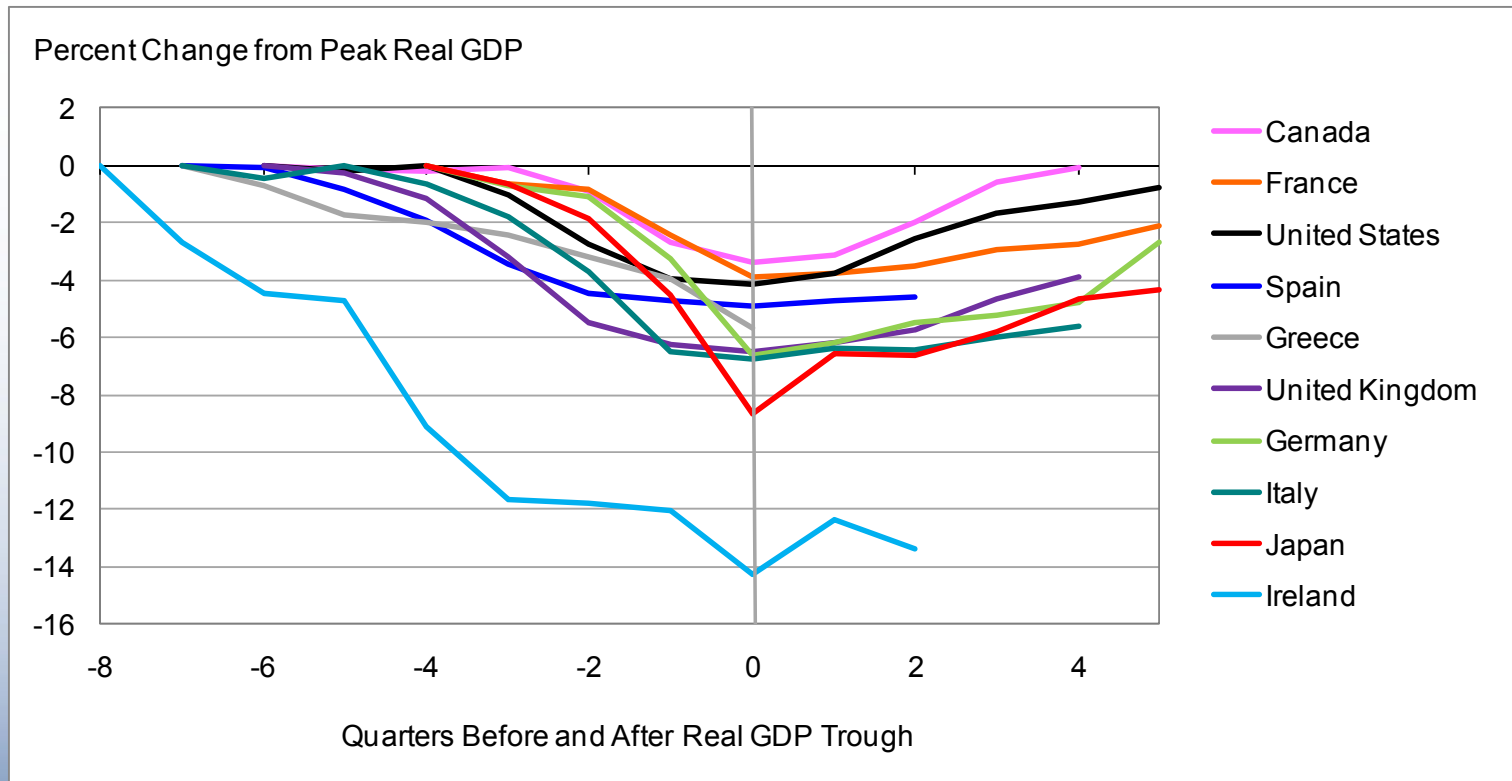
- Risk of further disinflation
 - The real cost of funds has been rising as inflation falls – this is an unintentional and undesirable tightening of monetary policy
 - With so much slack in the economy, there are risks of further disinflation
- Risks to labor markets



Figure 5

Real GDP Change from Peak

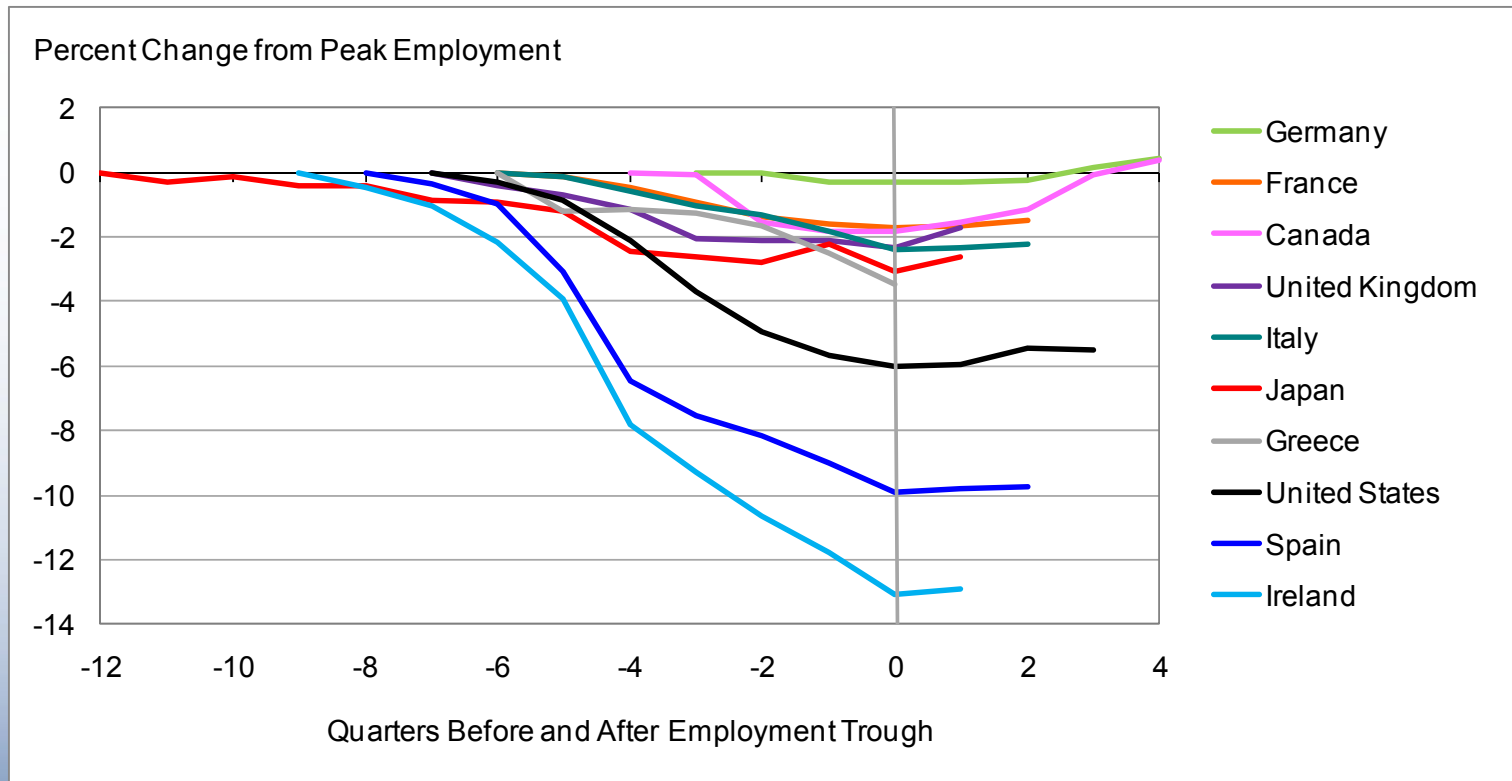
in Most Recent Recession by Country



Source: Haver Analytics

Figure 6

Employment Change from Peak in Most Recent Recession by Country

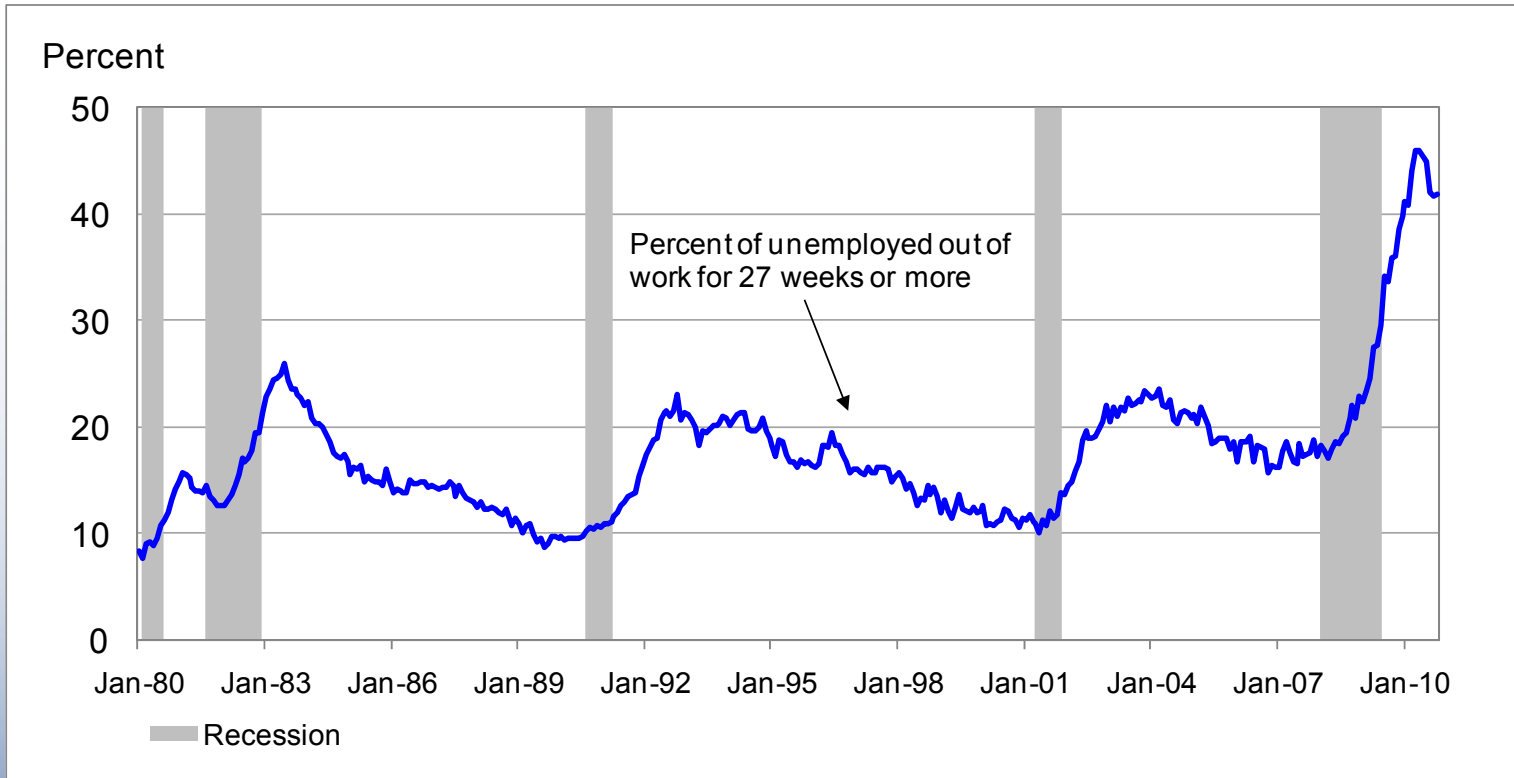


Source: Haver Analytics

Figure 7

Long-Term Unemployment: Percent Unemployed for 27 Weeks or More

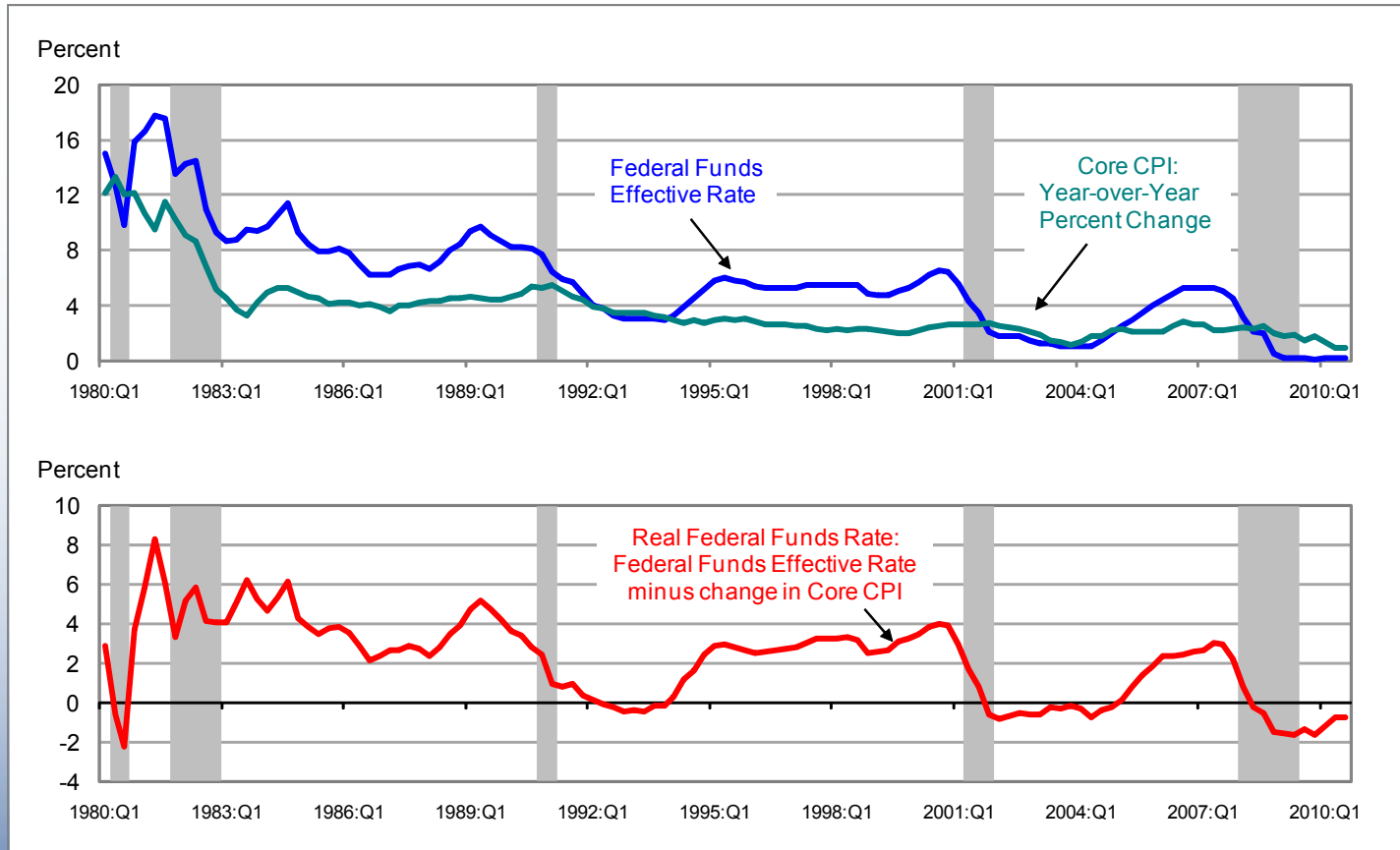
January 1980 - October 2010



Source: BLS, NBER / Haver Analytics

Figure 8 Real Interest Rates

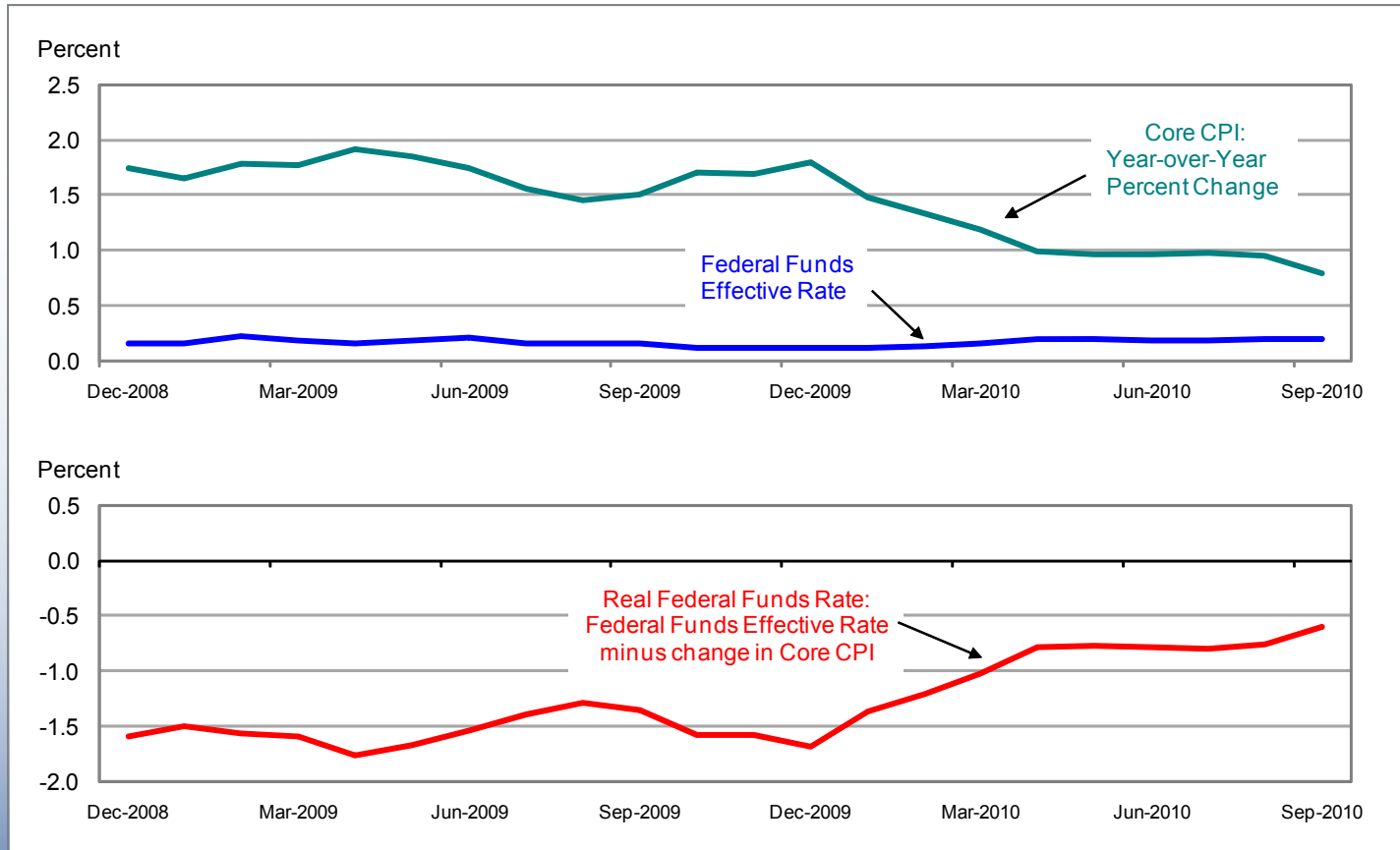
1980:Q1 - 2010:Q3



Source: BLS, NBER, Federal Reserve Board / Haver Analytics

Figure 9 Real Interest Rates

December 2008 - September 2010



Source: BLS, NBER, Federal Reserve Board / Haver Analytics

3. How Different are LSAP* from Typical Monetary Policy?

- **Typical monetary easing:**
Buy Treasury bills with reserves, and the federal funds rate falls
 - Expect long-term rates (corporate, mortgage) to fall, stock prices to rise, currency depreciation
- **Current LSAP:**
Buy Treasury bonds with reserves, and Treasury bond rates fall
 - Expect long-term rates (corporate, mortgage) to fall, stock prices to rise, currency depreciation

* *Large-Scale Asset Purchases*



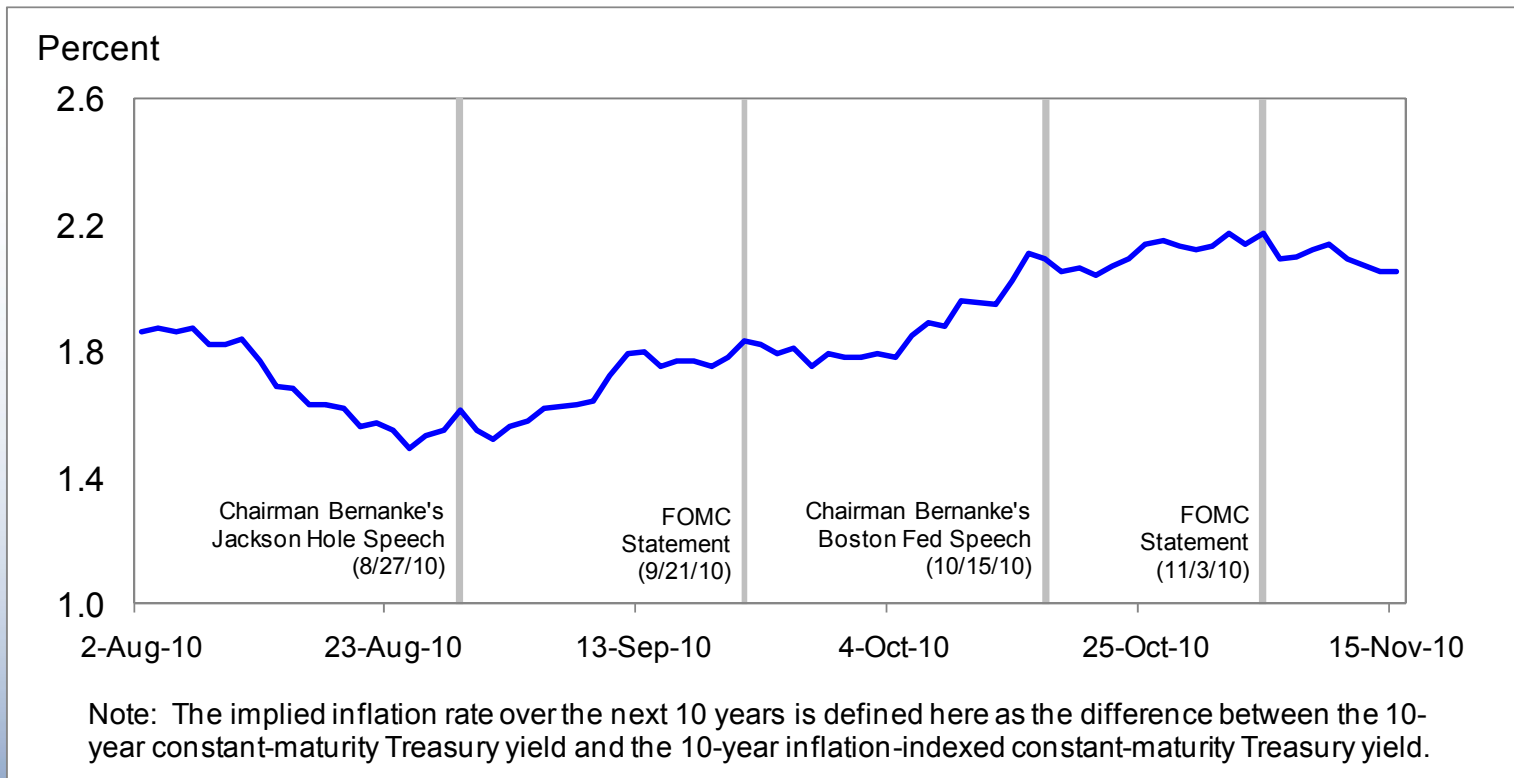
4. What has been the Impact of LSAP?

- Generally, impact consistent with what we would expect from typical monetary policy
 - Long rates have fallen
 - Stock prices have risen
 - Dollar has depreciated
- Federal Reserve Bank of Boston estimates that unemployment will be a little less than 0.5% lower than if action had not been taken (approx. 700,000 additional jobs)

Figure 10

Implied Inflation Rate Over Next Ten Years

August 2, 2010 - November 15, 2010

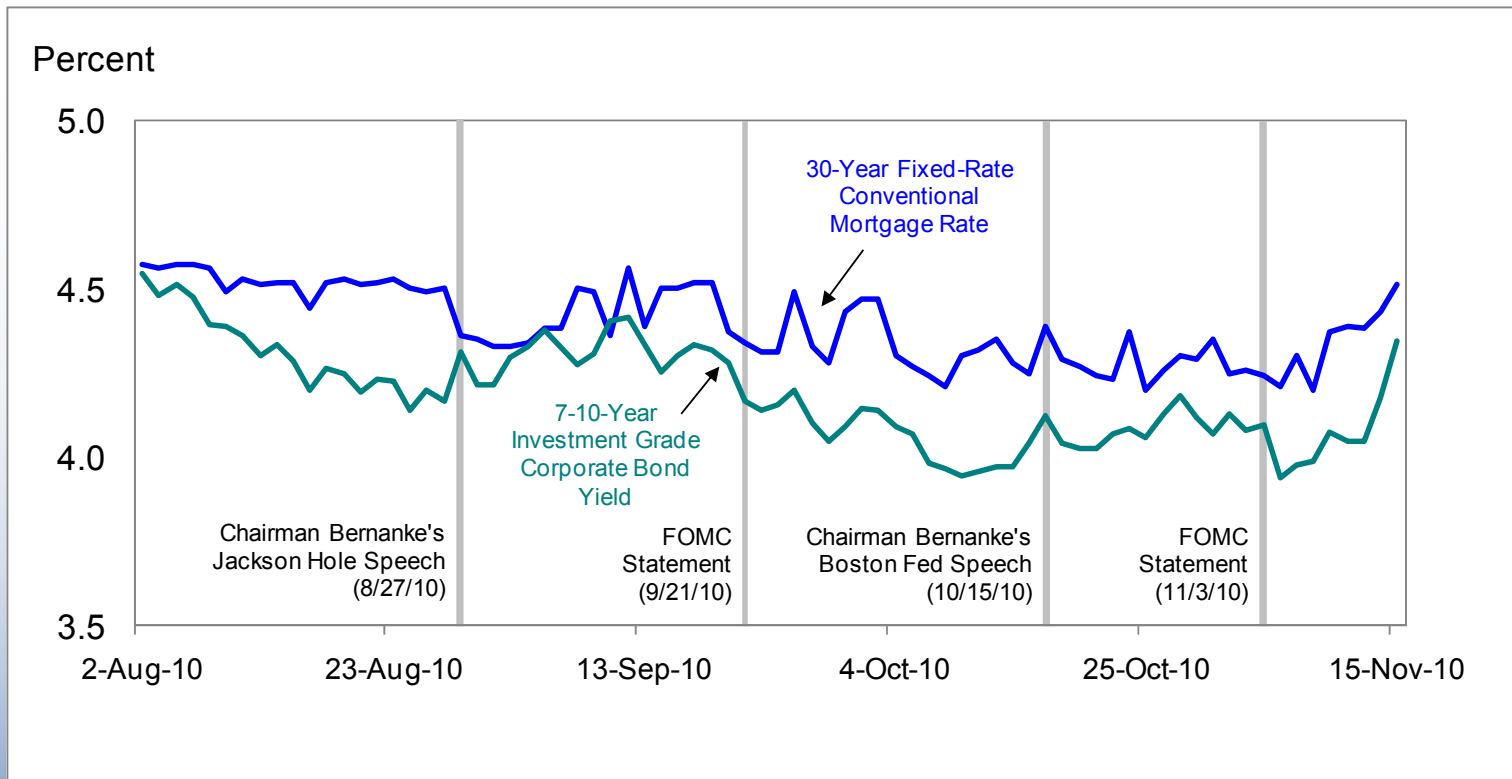


Source: Federal Reserve Board / Haver Analytics

Figure 11

Mortgage Rates and Corporate Bond Yields

August 2, 2010 - November 15, 2010

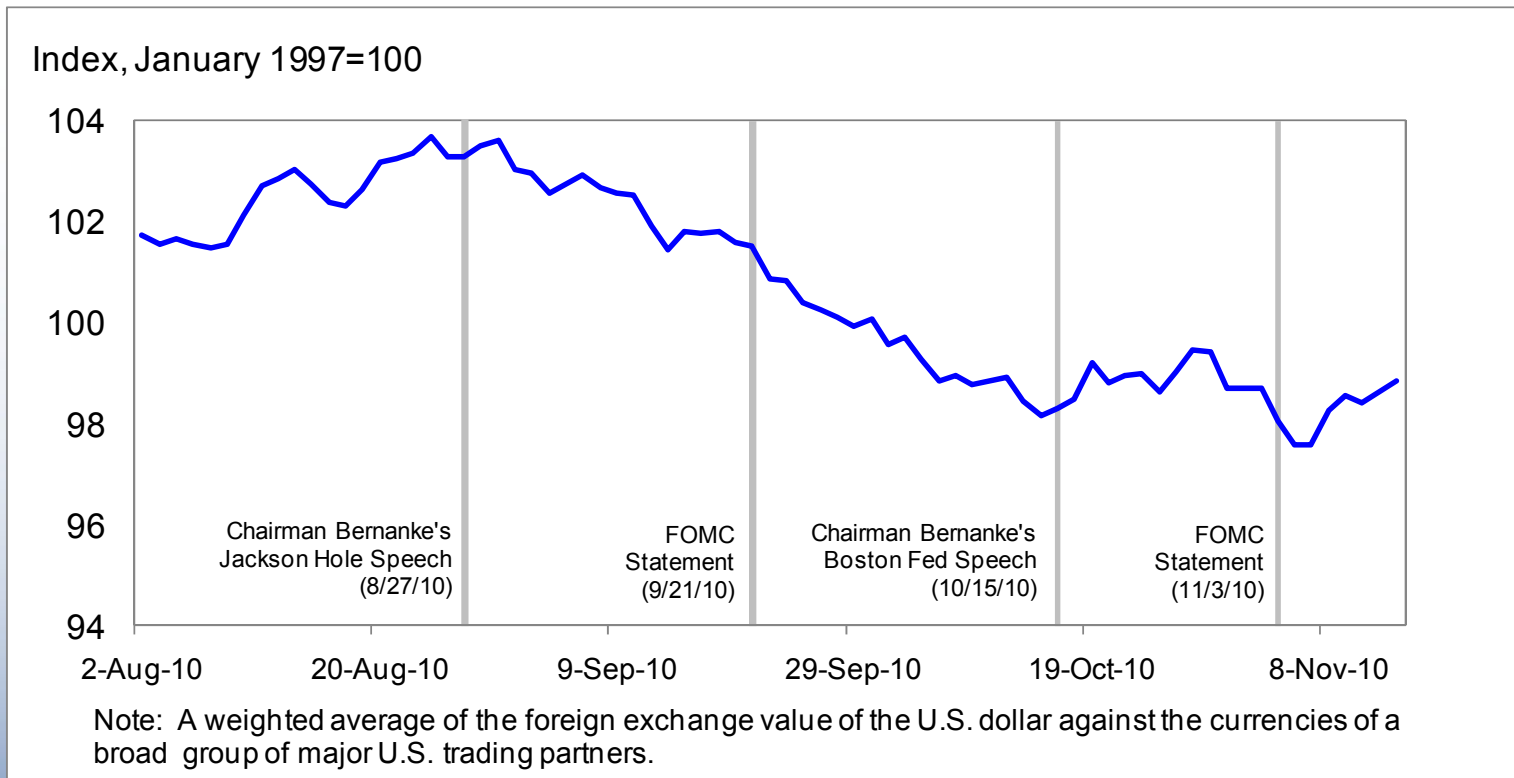


Source: New York Times, Bank of America-Merrill Lynch / Haver Analytics

Figure 12

Broad Trade-Weighted Nominal Exchange Rate Index

August 2, 2010 - November 12, 2010



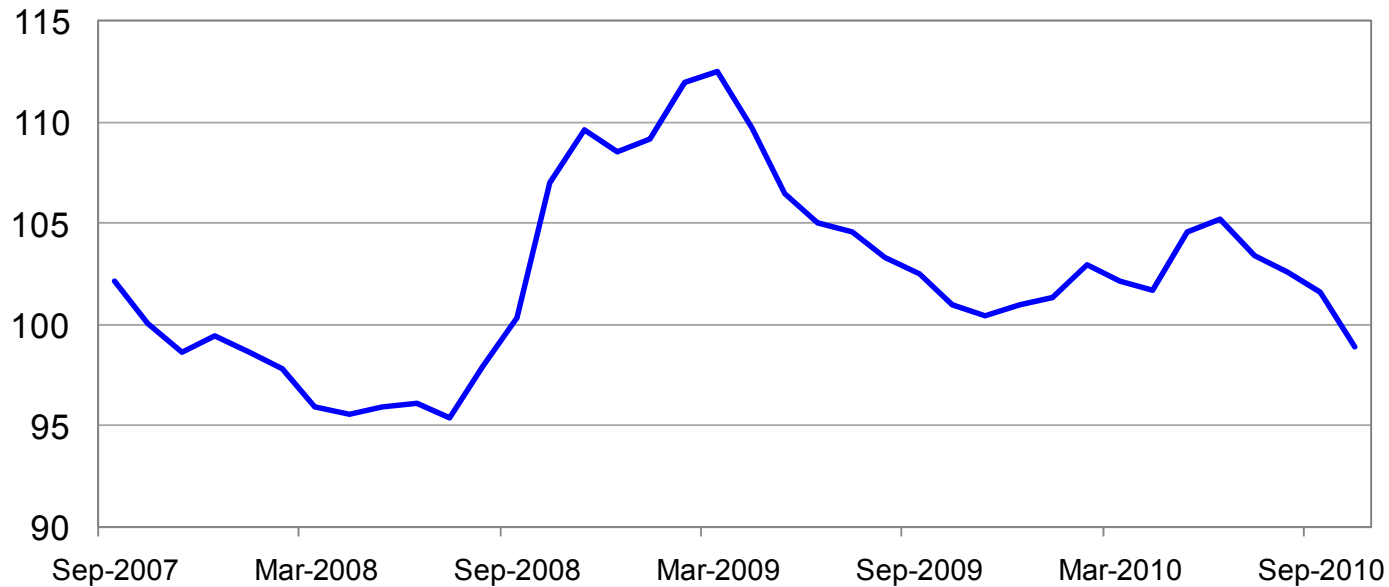
Source: Federal Reserve Board / Haver Analytics

Figure 13

Broad Trade-Weighted Nominal Exchange Rate Index

September 2007 - October 2010

Index, January 1997=100



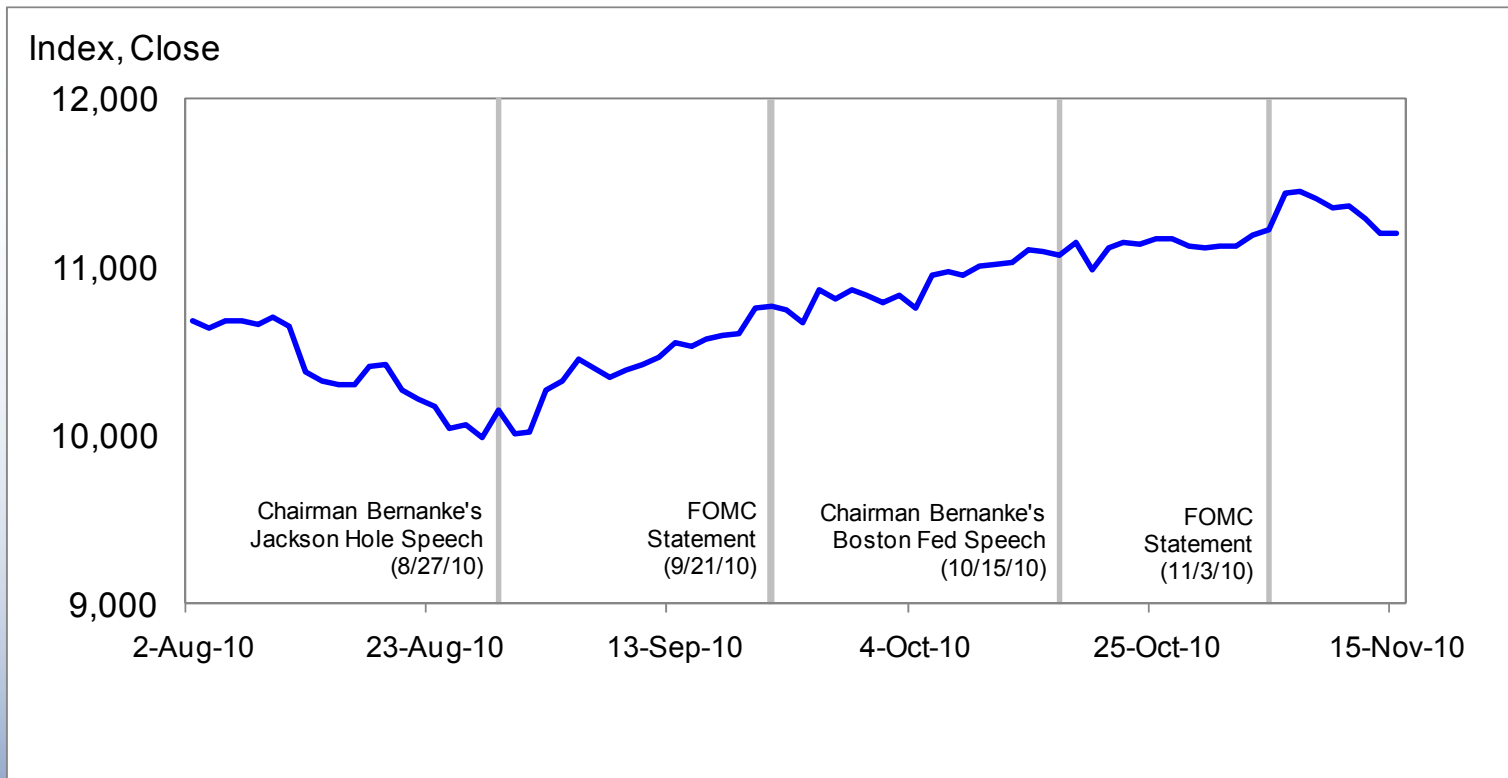
Note: A weighted average of the foreign exchange value of the U.S. dollar against the currencies of a broad group of major U.S. trading partners.

Source: Federal Reserve Board / Haver Analytics

Figure 14

Dow Jones 30 Industrials Stock Price Index

August 2, 2010 - November 15, 2010

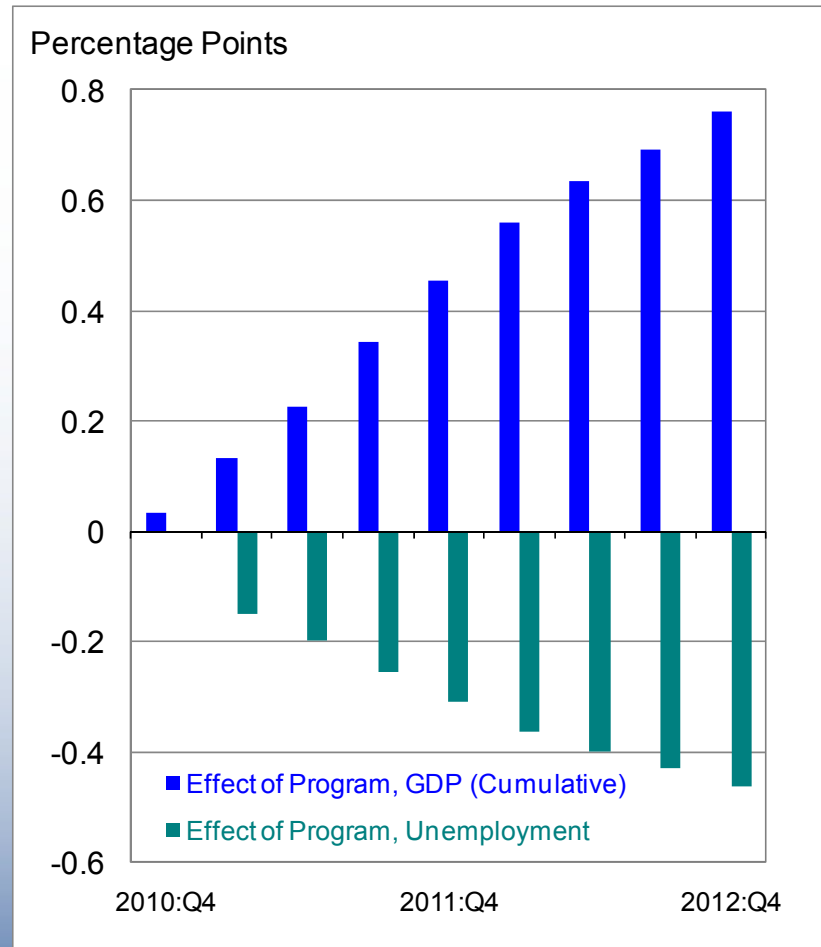


Source: Dow Jones / Haver Analytics

Figure 15

Impact of Large-Scale Asset Purchase Program

2010:Q4 - 2012:Q4



Source: Federal Reserve Bank of Boston Research Department calculations

5. What are the Risks of Current Policy?

- Longer-term assets held by the Federal Reserve can fluctuate in value depending on interest rates
- Balance sheet is larger, potentially complicating exit strategy
- Unintended consequences



Concluding Observations

- November decision is mandate-consistent
- Potentially costly to not take action
- LSAP has many similarities with more conventional policies
- Full impact of policies and risks still uncertain
- Early assessment of decision is what we might expect with more typical policies

