
The Fed's Dual Mandate Responsibilities and Challenges Facing U.S. Monetary Policy

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The views expressed today are my own and not necessarily
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In the summer of 2009, the U.S. economy began to emerge from its deepest recession since the 1930s. But today, two years later, conditions still aren't much different from an economy actually in recession. GDP growth was barely positive in the first half of the year. The unemployment rate is 9.1%, much higher than anything we have experienced for decades before the recession. And job gains over the last several months have been barely enough to keep pace with the natural growth in the labor force, so we've made virtually no progress in closing the "jobs gap."

The Federal Reserve has responded aggressively to the deep recession and weak recovery, cutting short-term interest rates to essentially zero and purchasing assets that expanded its balance sheet by a factor of three. But since undertaking the so-called QE2 round of asset purchases last fall, the Fed's aggressive policy actions have been on hold.

Some believe that this pause is entirely appropriate. They claim that the economy faces some kind of impediment that limits how much more monetary policy can do to stimulate growth. And, on the price front, they note that the disinflationary pressures of 2009 and 2010 have given way to inflation rates closer to what I and the majority of Fed policymakers see as the Fed's objective of 2%. These considerations lead many to say that when adding up the costs and benefits of further accommodation, the risk of overshooting our inflation objective through further policy accommodation exceeds the potential benefits of speeding the improvement in labor markets.

I would argue that this view is extremely, and inappropriately, asymmetric in its weighting of the Fed's dual objectives to support maximum employment and price stability.

Suppose we faced a very different economic environment: Imagine that inflation was running at 5% against our inflation objective of 2%. Is there a doubt that any central banker worth their salt would be reacting strongly to fight this high inflation rate? No, there isn't any doubt. They would be acting as if their hair was on fire. We should be similarly energized about improving conditions in the labor market.

In the United States, the Federal Reserve Act charges us with maintaining monetary and financial conditions that support maximum employment and price stability. This is referred to as the Fed's dual mandate and it has the force of law behind it.

The most reasonable interpretation of our maximum employment objective is an unemployment rate near its natural rate, and a fairly conservative estimate of that natural rate is 6%. So, when unemployment stands at 9%, we're missing on our employment mandate by 3 full percentage points. That's just as bad as 5% inflation versus a 2% target. So, if 5% inflation would have our hair on fire, so should 9% unemployment.

Today, I would like to explore further the implications of the Fed's dual mandate framework for monetary policy-making in today's environment. And don't worry, the views I am about to express are my own and not necessarily those of my Federal Reserve System colleagues.

Brief Update on the U.S. Economy

It's useful to start with a brief update on the U.S. economy. The economic outlook clearly has deteriorated this year. Early in 2011, most forecasters thought that the recovery was gaining traction and that economic activity would increase at a solid—though not spectacular—rate this year and next.

The financial repair process seemed to be progressing well, and, at least among large firms with access to the bond market, borrowing costs were quite low. We also had finally begun to see a long-awaited improvement in labor market conditions, with private job gains running about one-quarter million per month during the winter of 2011 and the unemployment rate falling about 1 percentage point over a four-month period. Higher prices for energy and other commodities were taking a bite out of purchasing power and the disasters in Japan were a drag, but these influences were expected to be temporary and growth was expected to strengthen.

The news over the past several months has proved this forecast wrong. Gains in employment have slowed markedly, and the unemployment rate has edged back up over 9%. The earlier improvements in labor markets now appear to have reflected the lagged influence of previous output growth and not—as we had hoped--the start of a virtuous circle of hiring and spending. Furthermore, revised data now indicate that real GDP began to decelerate in late 2010 and then barely edged up in the first half of this year. Consumer spending was particularly sluggish. Importantly, the weakness in growth began before the bulk of the effects of higher energy prices hit the economy and before the disaster in Japan. This timing, and the continued softness of most economic indicators into the early summer, indicates that the headwinds facing consumers and businesses are even stronger than we thought.

What are these headwinds? First, even though credit conditions overall have been improving, many households and small businesses still seem to be having trouble getting credit. In addition, the repair process in residential real estate markets is painstakingly slow, and households are still in the process of paring debt and adapting

to the huge losses in real estate and financial wealth that they experienced during the recession.

Of course, these forces are not new—indeed, they are important reasons why in this cycle forecasters never predicted rapid gains in output such as those that followed the deep recessions in the 1970s and 1980s. But they now appear to be even deeper and more persistent than we thought earlier in the year.

Many households and business may still feel they have inadequate buffers of assets to cushion against unexpected shocks. This leads to cautious behavior that holds back spending. For example, I regularly hear from business contacts that they do not want to risk hiring new workers until they actually see an uptick in demand for their products. They do not appear to be paring back at the moment, but they would rather sit on cash than risk undertaking a potentially unprofitable expansion. In addition to these long-running problems, continued uncertainty about the European debt crisis and the difficulties dealing with the U.S. fiscal situation have held back growth.

Against this backdrop, the outlook has weakened substantially. Last June, most private sector forecasters were expecting real GDP to increase 2-3/4% in 2011 and 3.1% in 2012. By early August, these forecasts had dropped to 1.6% and 2.7%, respectively. This 2012 growth rate is barely above most analysts' views of potential growth—so it certainly won't make much of a dent in the unemployment rate and other measures of resource slack.

On the price front, with energy prices increasing markedly, headline inflation – as measured by the 12 month change in the total personal consumption expenditures price index - rose from about 1-1/4% last fall to 2-3/4% in July. Excluding food and energy, PCE inflation has moved up from about 1% to 1-1/2% over the same period. Energy prices have dropped sharply over the past month and the prices for many other commodities also have softened. And with the unemployment rate still high and capacity utilization low, resource slack is likely putting downward pressure on prices. In addition, market measures of longer-run inflation expectations are at the low end of the range they have been running since last November.

Putting these factors together, my outlook is for overall inflation over the medium term to fall back towards core and remain below the 2% level I see as consistent with the price stability leg of the Fed's dual mandate.

Monetary Policy and the Dual Mandate

In my view, central banks should focus on medium-term inflation. Over shorter periods, measured inflation rates are affected by all sorts of short-term influences, such as fluctuations in food and energy prices that are beyond the control of monetary policy. Furthermore, there are significant lags before policy actions influence inflation. So reacting too strongly to short-run influences simply adds noise to the policy-making process.

So, by this appropriate standard I think inflation likely will be below our goal of 2%. And of course, unemployment is much above its natural rate. Thus, at the moment, there is little conflict between our two goals. Both suggest at least some additional monetary policy accommodation would be helpful. However, given how truly badly we are doing in meeting our employment mandate, I argue that the Fed should seriously consider actions that would add very significant amounts of policy accommodation. Such further policy accommodation does increase the risk that inflation could rise temporarily above our long-term goal of 2%.

But I do not think that a temporary period of inflation above 2% is something to regard with horror. I do not see our 2% goal as a cap on inflation. Rather, it is a goal for the *average* rate of inflation over some period of time. To average 2%, inflation could be above 2% in some periods and below 2% in others. If a 2% goal was meant to be a cap on inflation, then policy would result in inflation averaging below 2% over time. I do not think this would be a good implementation of a 2% goal.¹

With this in mind, I want to discuss the nature of policy-making under a dual mandate when we are far from our goals.

What's a Central Banker to Do? (Warning: Math Ahead)

Normally, the deviations of the real economy and inflation from our objectives are small enough that any conflicts are minor. And the well-known Taylor Rule captures normal policy adjustments well, appropriately weighting output gaps and inflation deviations in the setting of our policy rate. However, the Taylor Rule is a rule-of-thumb, whose claims of empirical validity are based on its ability to track policy during periods of relatively modest volatility.² The current recession is outside of the empirical experience of Taylor Rules calibrated to describe Federal Reserve actions.

We need to look beyond heuristic descriptions like the Taylor Rule to a more complete analysis of optimal monetary policymaking within a dual mandate framework. This topic has been studied extensively in the macroeconomic literature. Interestingly, one of the

¹ The Committee's interpretation of its mandate often is expressed as inflation of "2 percent, or a bit less." This does not mean keeping inflation in a narrow band capped by 2%. The "2 percent, or a bit less" interpretation of our price stability mandate comes from the responses to the Survey of Economic Projections which FOMC participants submit four times per year, and in which the majority of participants have said 2% is their long-run forecast under conditions that include appropriate monetary policy. Because inflation is determined in the long run by monetary policy, it follows that these long-run forecasts can be interpreted as participants' views on the level of inflation most consistent with the Committee's mandate. The "or a bit less" is added because a minority of participants submit long-run forecasts that are below 2%.

² The exercise is described in Taylor, John B. 1993. "Discretion Versus Policy Rules in Practice," *Carnegie-Rochester Series on Public Policy* 39, pp. 195-214; and Taylor, John B. 1999. "An Historical Analysis of Monetary Policy Rules," in John B. Taylor (ed.) *Monetary Policy Rules*, University of Chicago Press.

first modern treatments is due to John Taylor in an article published in *Econometrica* in 1979.³ This framework continues to be a mainstay of optimal policy analysis, as evidenced by a large literature that includes work by Michael Woodford in recent years.⁴ Taylor expresses the central bank's dual-mandate objective as monetary policymakers attempting to minimize the weighted sum of squared deviations of inflation and the level of output from their goal values. That is, a central bank attempts to minimize a simple quadratic loss function like the following:

$$L = (\pi - \pi^*)^2 + \lambda * (y - y^*)^2$$

Here π and y are inflation and the (natural) logarithm of output, and π^* and y^* are the policy goals for these variables. In most formulations, y^* is the log of the level of potential output—the level of output at which resource slack has a neutral influence on the level of inflation. Thus, (given the properties of logarithms) $y - y^*$ is the usual output gap, the percentage difference between actual and potential output. And $\pi - \pi^*$ is the gap between the actual and desired rates of inflation. Ideally, we'd like both of these gaps to be zero, but this usually won't be the case. We measure the costs associated with the overall deviation of actual outcomes from the ideal with the quadratic loss function L . Note that for each policy goal, this loss function equally weights same-sized misses above and below target.

The coefficient λ determines the relative weight policymakers give to their misses on real output versus those on inflation. If λ is equal to 1, then a 1 percentage point deviation of inflation from its target gets the same weight in computing the overall costs of being away from the optimum as a 1 percentage point deviation of output from its potential.

However, Ken Rogoff (1985) and others have argued that, in order to avoid inflationary biases that might creep into policy, a good, conservative central banker ought to conduct policy as if λ were less than one.⁵ It's reasonably conservative to set λ equal to $\frac{1}{4}$. That means the costs of a 1 percentage point output gap are judged to be only one-quarter as high as the costs of a 1 percentage point deviation of inflation from its goal. So a λ of $\frac{1}{4}$ puts a good deal of weight on keeping inflation near its goal.

Given that the Fed's mandate is expressed in terms of employment, it is helpful to recall Okun's Law, which says that a 1 percentage point gap between actual and potential output corresponds to a one half percentage point gap between unemployment and its natural rate. Making this translation in the loss function, we see that the conservative

³ Taylor, John B. 1979. "Estimation and Control of a Macroeconomic Model with Rational Expectations," *Econometrica* 47 (5) September, pp. 1267-1286.

⁴ For example, Woodford, Michael, 2005. "Central-Bank Communication and Policy Effectiveness." Paper presented at Federal Reserve Bank of Kansas City Symposium on "The Greenspan Era: Lessons for the Future," Jackson Hole, Wyoming, August 25-27, 2005. Available at: <http://www.columbia.edu/~mw2230/JHole05.pdf>

⁵ Rogoff, Kenneth S. 1985. "The Optimal Degree of Commitment to an Intermediate Monetary Target." *Quarterly Journal of Economics* 100 November, pp. 1169-1189.

central banker attempts to minimize the equally weighted sum of squared inflation and unemployment deviations:

$$L = (\pi - \pi^*)^2 + \lambda * (u - u^*)^2$$

where u and u^* are the actual and natural rates of unemployment.⁶

The bottom line is that a conservative and tough-minded central banker can still value deviations in unemployment from the natural rate equally with deviations in inflation from its target. Accordingly, an inflation rate of 5% against an inflation goal of 2% presents this policymaker with an equal-sized loss as a 9% unemployment rate against a conservative estimate of 6% for the natural rate of unemployment. (I call this conservative, because while we think a number of factors such as increased job mismatch and extended unemployment insurance benefits have temporarily boosted the natural unemployment rate in the U.S., these factors are not expected to persist in the long-run).

There also is an immediate corollary: If you aren't as riled up over 9% unemployment as you would be over 5% inflation, then you either put even less weight on unemployment deviations in your loss function or you think that the natural unemployment rate is substantially higher than 6%.

I'll address the latter possibility later. However, I now want to turn to reasons why the challenges to policymaking in the current situation are orders of magnitude larger than those we face during more normal times. To preview, these are because: (a) we find ourselves in the aftermath of a Reinhart-Rogoff type financial crisis, which has resulted in severe headwinds weighing on the recovery process; (b) the economic costs of the vast amounts of unused resources in the economy are very large; and (c) the zero lower bound is a constraint on standard monetary policy actions, requiring a broader monetary policy framework if we are to provide more policy accommodation.

Additional Challenge #1: Reinhart and Rogoff's Great Contraction and Debt Overhang

The Financial Crisis of 2008 left an enormous obstacle in the path of the U.S. recovery. From peak to trough, \$13 trillion of wealth was erased from household balance sheets. Although the value of households' assets declined dramatically, their debt levels remained roughly the same. Many borrowers took on additional debt during the period of high and rising asset valuations, and high employment and income growth were key fundamentals for servicing these debt payments into the future. These debt burdens are key contributors to the headwinds I discussed earlier when I talked about the economic

⁶ That is, Okuns' Law says $(y - y^*) = 2*(u - u^*)$, where u and u^* are the actual and natural rates of unemployment. Making this translation in the loss function (so squaring and multiplying by $\lambda = 1/4$ yields $L = (\pi - \pi^*)^2 + \lambda * (u - u^*)^2$.

outlook. As I noted then, they appear to be substantially more onerous than we had expected.

In their book *This Time is Different*, Carmen Reinhart and Ken Rogoff documented the substantially more detrimental effects that financial crises typically impose on economic recoveries.⁷ Recoveries following severe financial crises take many years longer than usual, and the risk of a second recession before the ultimate economic recovery returns to the previous business cycle peak is substantially higher. In a related study of the current U.S. experience, Reinhart and Rogoff show that the current anemic recovery is following the typical post-financial crisis path quite closely, given the size of the financial contraction.⁸ It would be nice to point to some features of the recovery that suggest greater progress relative to the Reinhart-Rogoff benchmark. But those are hard to come by.

It bears keeping in mind that the Reinhart-Rogoff predictions of a slow recovery are based on historical averages of macroeconomic performances across many different countries at many different times. They highlight a challenge we face today, but from the standpoint of the underlying economic analysis, there is nothing pre-ordained about these outcomes. They are not theoretical predictions—rather, they are reduced form correlations. The economy can perform better than it did in these past episodes if policy responds better than it did in those situations. In my opinion, maintaining the Fed’s focus on both of our dual-mandate responsibilities is a necessary and critical element of an appropriate response to the financial crisis that can produce better economic outcomes.

Additional Challenge #2: Trying New and Nontraditional Policy Responses when the Economic Stakes are Enormous

The second critical challenge is to take actions that respect both the feasibility of what monetary policy can accomplish and the enormous risks to the future prospects of the U.S. economy.

For me, these risks are clear. It is painfully obvious that the large quantities of unused resources in the U.S. are an enormous waste. And it’s not just the current loss--over substantial periods of time, the skills of long-term unemployed workers decline, their re-employment prospects for similar jobs fade, and these reductions in skills have a lasting effect on the future growth potential of the economy.

As I noted in the introduction, some argue that there currently are severe limits to what further accommodative monetary policies can do to address these risks. It is essential to

⁷ Reinhart, Carmen M. and Kenneth Rogoff, 2009. *This Time is Different: Eight Centuries of Financial Folly*. Princeton University Press. New Jersey: Princeton.

⁸ Reinhart, Carmen M. and Kenneth Rogoff, 2011. Remarks at the 2011 NBER Summer Institute. For similar analyses, see Reinhart, Carmen M. and Kenneth Rogoff, 2008. “Is the 2007 US Sub-Prime Financial Crisis So Different? An International Historic Comparison” *American Economic Review: Papers and Proceedings* 98(2), pp. 339-344; and Reinhart, Carmen M. and Kenneth Rogoff, 2008. “The Aftermath of Financial Crises” *American Economic Review: Papers and Proceedings* 99(2), pp. 466–472.

delineate clear alternative scenarios in which this additional accommodation would be futile. Such scenarios clearly exist, but they are very dark and pessimistic interpretations of our current situation. I am personally much more optimistic and I don't subscribe to this pessimistic view; but let me describe it as I understand it.

Essentially, the hypothesis that limits aggressive policy actions assumes that the productive capabilities of the U.S. have declined markedly in recent years and that many workers who were productively employed just a few years ago are now essentially obsolete. In this scenario, either much of the past decade of prosperity was an illusion or, alternatively within the space of only a few years, the productive potential of the U.S. collapsed for some unexplained reason.

I suppose it is natural to believe that some elements of the story are true. But for me, the evidence for this is minimal, and the implications for productive capacity are exceedingly pessimistic. And even if it is true, the market mechanism should cause wages and prices to adjust in order to reemploy unused resources. For example, there should be some lower real wage that would make it profitable for firms to fund the necessary on-the-job training for workers who need some modest acquisition of skills. According to this pessimistic hypothesis, something is preventing the market's pricing mechanism from achieving such results within a satisfactory time frame.

My own view is more optimistic and, I believe, more consistent with the idea that our best days are ahead. Without a compelling explanation for the hypothesis that the productive capability of the U.S. has been diminished, I think the evidence favors the belief that aggregate demand is simply much too low today. After all, today there are roughly 14 million unemployed Americans. Only a few years ago, there were only about half that many. It is hard to believe that an additional 7 million Americans have suddenly lost the necessary skills to work in today's economy, and I have not seen any evidence supporting such a dramatic and rapid loss of skills.

In the more optimistic case to which I subscribe, the productive capacity and potential wealth of the U.S. have not been permanently damaged and currently unused resources are still productive. Accordingly, in my opinion, monetary policy should be used more aggressively to increase aggregate demand. In time, a reduction in excessive risk aversion, supported by natural market forces would reestablish the fundamentals that previously supported stronger growth and full employment. In this way, large social losses would be mitigated. By stimulating aggregate demand, we can have "Morning in America, again" and our best days can still be ahead of us.

But the clock is ticking—the longer we wait, the more likely it is that unutilized skills diminish to the point that more permanent damage takes hold.

Challenge #3: Monetary Policy Held Back by Zero Lower Bound

By now, the third obstacle is quite well-known: the federal funds rate in the U.S. is currently constrained by the zero lower bound on interest rates. Given the economic

scenario and inflation outlook I have discussed, were it possible, I would favor cutting the federal funds rate by several percentage points. But since the federal funds rate is already near zero now, that's not an option.

To date, the Fed's policy-making committee, the FOMC, has used a number of nontraditional policy tools to impart greater financial accommodation. I have fully supported these policies. Today, however, I simply think we need to do more.

In a recent *Financial Times* comment, Michael Woodford of Columbia University discussed how greater clarity in policy communications would help.⁹ As I see it, current financial conditions are more restrictive than I favor, because households, businesses, and markets place too much weight on the possibility that Fed policy will turn restrictive in the near to medium term.

The FOMC's announcement in August that it anticipates short-term rates remaining low through mid-2013 was certainly a step in the right direction, because it significantly raised the hurdle for early policy tightening. However, I think our dual mandate responsibilities and the strong impediments of the financial crisis argue for a more aggressive approach.

One way to provide more accommodation would be to make a simple conditional statement of policy accommodation relative to our dual mandate responsibilities. The goal would be to enhance economic growth and employment while maintaining disciplined inflation performance. This conditionality could be conveyed by stating that we would hold the federal funds rate at extraordinarily low levels until the unemployment rate falls substantially, say from its current level of 9.1% to 7.5% or even 7%, as long as medium-term inflation stayed below 3%.

With regard to the inflation marker, we have already experienced unduly low inflation of 1%; so against an objective of 2 percent, 3 percent inflation would be an equivalent policy loss to what we have already experienced. On the unemployment marker, a decline to 7.5% would be quite helpful. However, weighed against an overly conservative estimate for the natural rate of unemployment of 6%, it still represents a substantial policy loss—indeed, one that is higher than the policy loss from high inflation of 3%.

Accordingly, these triggers remain quite conservatively tilted in favor of disciplined inflation performance over enhanced growth and employment, and it would not be unreasonable to consider an even lower unemployment threshold that would be enough progress to justify the start of policy tightening.

⁹ Woodford, Michael. 2011. "Bernanke Should Clarify Policy and Sink QE3" *Financial Times* August 25, 2011.

There are other policies that could give clearer communications of our policy conditionality with respect to observable data. For example, I have previously discussed how state-contingent, price-level targeting would work in this regard.¹⁰ Another possibility might be to target the level of nominal GDP, with the goal of bringing it back to the growth trend that existed before the recession. I think these kinds of policies are worth contemplating—they may provide useful monetary policy guidance during extraordinary circumstances such as we find ourselves in today.

The trigger policy I noted above and level-targeting policies may result in inflation running at rates that would make us uncomfortable during normal times. But we should not be afraid of such temporarily higher inflation results today. As I noted earlier, Ken Rogoff (1985) has written that in normal times, we may want conservative central bankers as institutional offsets to what would otherwise be inflationary biases in the monetary policy process. But these are not usual times—we are in the aftermath of a financial crisis with stubborn debt overhangs that are weighing on activity. And as Rogoff himself wrote in a recent piece in the *Financial Times*, higher inflation could aid the deleveraging process.¹¹ To quote him: “Any inflation above 2 per cent may seem anathema to those who still remember the anti-inflation wars of the 1970s and 1980s, but a once-in-75-year crisis calls for outside-the-box measures.”

Conclusion

Last year about this time economic conditions deteriorated to the point that we undertook discussions on how to provide further monetary accommodation—and we ended up with our second round of large scale asset purchases. Now, one year later, we again find ourselves with a weakened economic outlook and again trying to decide what further accommodation to provide. I’m sure everyone will agree that we seriously don’t want to be in this position again at this time next year. I believe that means we need to take strong action now.

Thanks.

¹⁰ See Evans, Charles. 2010. “Monetary Policy in a Low-Inflation Environment: Developing a State-Contingent Price-Level Target.” Remarks delivered at the Federal Reserve Bank of Boston’s 55th Economic Conference on October 16, 2010, in Boston, Mass.; and *2010 Federal Reserve Bank of Chicago Annual Report: Monetary Policy Rules for Non-Traditional Times*, available at: http://www.chicagofed.org/digital_assets/publications/annual_report/2010_annual_report.pdf

¹¹ Rogoff, Kenneth S. 2011. “The Bullets Yet to Be Fired to Stop the Crisis” *Financial Times* August 8, 2011.