Some Contingent Planning for Monetary Policy[1]

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Thank you very much for that generous introduction. It is a pleasure to be with you today. I think that you will find that my speech is a fitting one to be addressed to the Forecasters' Club. In the first part of my talk, I will present my own forecast and will even provide a recounting of my scant track record as a forecaster. In the second part of my talk, I will discuss contingent planning for monetary policy. A key part of such planning is one's forecast, as well as the recognition that one's forecast will evolve as data come in. Over the past 25 years, monetary policymakers all over the world—including here in the United States—have become more transparent about their deliberations and their thinking. This is a very positive development. Speeches like this one play a huge role in that process. So I thank you for your invitation to join you here today and for the opportunity to share my views.

As was mentioned in the introduction, I am the president of the Federal Reserve Bank of Minneapolis. The Federal Reserve Bank of Minneapolis is one of 12 regional Reserve banks that, along with the Board of Governors in Washington, D.C., make up the Federal Reserve System. Our bank represents the ninth of the 12 Federal Reserve districts, and our district includes Montana, the Dakotas, Minnesota, northwestern Wisconsin, and the Upper Peninsula of Michigan.

The Federal Open Market Committee—the FOMC—meets every six to seven weeks (eight times per year) to set the path of monetary policy. All 12 presidents of the various regional Federal Reserve banks and the seven governors of the Federal Reserve Board participate in these meetings. (Right now, there are only five governors—two positions are unfilled.) However, the actual policy decisions are made by the Committee itself. It consists only of the governors, the president of the Federal Reserve Bank of New York, and a group of four other presidents, which changes annually. Currently, I'm a member of the Committee (along with the presidents of the Federal Reserve Banks of Chicago, Dallas, and Philadelphia).

At each FOMC meeting, there are two go-rounds, in which each president and every member of the Board speaks in turn. The first go-round concerns current economic conditions and the economic outlook. The presidents typically say something about economic conditions in their own district, as well as talk about national economic conditions. The governors speak about national economic conditions, although they often focus their remarks on particular slices of the overall economic picture.

In the second go-round, we each speak in turn about our views on the current monetary policy choices. However, those discussions often range well beyond the confines of the next seven weeks. There is no sensible way to talk about current policy choices without linking them in some fashion to future policy choices. Hence, meeting participants may sometimes describe (as briefly as they can!) how they expect (or would like) policy to evolve over the coming months or even years.

My remarks today will be structured along the lines of an FOMC meeting. I will first discuss my outlook for the U.S. economy. I will then move on to talk about the key issues that I see affecting the FOMC's policy choices over the coming months and years.

Before going further, I should say that my views are my own and not necessarily those of others in the Federal Reserve System or of others in the FOMC. This disclaimer is a standard one—but let me provide a little more detail about what it will mean about the remainder of my speech. I'm a member of the FOMC this year, and so I vote to determine the course of monetary policy at each meeting. Given my position, I believe that it is valuable for the public to know what economists would term my *monetary policy reaction function*—that is, my views about how monetary policy should react to various economic scenarios. Of course, the FOMC is made up of 10 different individuals, with 10 highly related, but nonetheless distinct, policy reaction functions. The ultimate reaction function of the FOMC is a collective one, and may well differ from that of any given Committee member. My remarks are only about the nature of *my* reaction function, and not the collective one of the FOMC.

With that context in place, let me move to my outlook. I'll focus on the three variables of most interest to us at the FOMC: real gross domestic product (GDP), unemployment, and inflation. My bottom line is that, from the point of view of the macroeconomy, 2011 will be a better year than 2010.

Recently, the Bureau of Economic Analysis released its advance estimate for real GDP in the first quarter of 2011. This estimate implies that real GDP grew at a 1.8 percent annual rate during the quarter. This growth rate is a bit slower than what we've seen since the end of the Great Recession: In the seven quarters since June 2009, real GDP growth has averaged just below 3 percent. This rate of growth is slow compared with the recovery in real GDP that took place after the recession of 1981-82. However, it is similar to the recoveries that took place after the recessions of 1991 and 2001.

Despite this somewhat slow start, I do expect that real GDP growth will be slightly faster in 2011 than in 2010—something between 3 percent and 3.5 percent. Given the depth of the recession that we experienced, this rate of growth is disappointing. I do still see two headwinds in the U.S. economy. The first is that many households will continue to strive to rebuild their net worth positions in response to past—and possibly future—falls in residential land prices. As I have discussed elsewhere,[2] I believe that the decline in household net worth, precipitated by falls

[2] See Kocherlakota (2011).

in land values, was a key factor in generating the severity of the Great Recession. It will remain important in the recovery.

The second headwind is related. Many smaller banks in the United States face ongoing issues with asset quality. For example, the FDIC problem bank list contains over 800 banks. Problem banks are less likely to take the risk of lending to small and/or young firms and other entrepreneurial activities. Instead, they are more likely to preserve capital ratios by limiting their asset growth and allocating their lending staff to working out loans to existing borrowers. Indeed, as the economy improves, I suspect that this headwind will become even more important. In 2010, our information at the Minneapolis Fed indicates that small businesses were reluctant to expand because of ongoing uncertainties about product demand. As a result, their demand for bank financing remained low. In 2011, as the economy improves, I expect loan demand to rise accordingly—but banks with poor asset quality will continue to focus on capital preservation rather than loan expansion.

Let me turn now to the labor market, where I see conditions improving slowly. The unemployment rate has fallen from 9.8 percent in November to 9.0 percent in April. However, unemployment can fall in two ways: People can find jobs or people can stop looking for work. Along these lines, it is worth keeping in mind that the employment-to-population ratio—the fraction of those over 16 with a job—has improved only slightly since November. This key variable remains near the quarter-century lows established in the Great Recession.

I see the future course of unemployment as being shaped by two conflicting forces. On the one hand, the growing economy should generate more jobs and therefore lower unemployment. On the other hand, the growing economy will also lead more people without jobs to look for them. On net, I do expect the unemployment rate to normalize at close to 5 percent within the next five years. However, the immediate progress will be slow: I expect that the unemployment rate will be between 8 percent and 8.5 percent by the end of the year.

Finally, I turn to inflation. The FOMC is mandated by the Federal Reserve Act to keep prices stable. This mandate is typically translated quantitatively into a 2 percent rate of inflation, or a bit under. Here, by inflation, I'm referring to headline inflation—that is, the rate of price increase of a bundle of *all* consumer goods and services, including those related to food and energy. The problem is that monetary policy operates with relatively long lags. Hence, out of necessity, I view the Committee's price stability mandate as requiring it to follow policies that will guide the economy toward 2 percent headline inflation over the next three to four years.

I believe that the Fed can best achieve this medium-term objective for *headline* inflation by responding on an ongoing basis to movements in what's called *core* inflation. Core inflation is a measure of inflation that strips out food and energy products. I like core inflation as a measure of medium-term inflationary pressures because demand and supply conditions in food and energy markets are volatile, and so their prices tend to have relatively large transitory fluctuations. Responding aggressively to these fluctuations would lead to bad monetary policy. For example, increases in energy prices pushed headline personal consumption expenditure (PCE) inflation, when measured over the preceding year, up to 4.5 percent in July 2008. With hindsight, we can see that it is good that the FOMC did not raise rates in response to what proved to be a temporary increase in headline inflation.

From the fourth quarter of 2009 to the fourth quarter of 2010, core PCE inflation was 0.8 percent—the lowest annual inflation rate in the 50-plus-year history of that series. Inflation was low—but disinflationary pressures were still strong as core PCE inflation trended downward over the course of 2010. Over the last six months of 2010, the annualized core PCE inflation rate fell to 0.4 percent. That is the second-lowest 6-month core PCE inflation rate ever recorded.

I don't expect this kind of disinflationary pattern to continue in 2011. Core PCE inflation from the fourth quarter of 2010 to the first quarter of 2011 was 1.5 percent at an annualized rate. Similarly, I expect that core inflation will be 1.5 percent over the remainder of 2011.

To summarize: I expect real output to grow slightly more rapidly in 2011 than in 2010. Household deleveraging and bank asset quality issues will remain a drag on the recovery. Unemployment will fall—but more slowly than we would like. Finally, inflationary pressures are currently low. I expect core PCE inflation to grow slowly over the course of 2011, while remaining under 2 percent.

What sort of faith should you put in these forecasts? Well, my history of making forecasts is short so far, because I only took over as president in October 2009. However, in February 2010, I gave my first speech as bank president and offered forecasts about 2010 real GDP, unemployment, and inflation. My forecasts for unemployment and GDP ended up being pretty accurate. However, my forecasts for 2010 headline and core inflation were both about a percentage point too high.

I encourage you to keep this forecasting error in mind as I move on to what would be the second go-round in the FOMC: the discussion of policy considerations. I'll first discuss where we are now and then talk about possible monetary policy changes over the coming year. Just as is true in many actual FOMC policy go-rounds, you will see that my discussion will necessarily spill into choices and decisions to be made over the next five years.

The Federal Reserve currently has two forms of accommodative monetary policy in place. The first is that the FOMC is targeting a low fed funds rate of between 0 and 25 basis points. This kind of accommodation—keeping short-term interest rates low—is an entirely conventional response to unduly low levels of core inflation and unduly high levels of unemployment. By keeping market interest rates low, the policy encourages companies to invest their resources into hiring and business expansions, and it also encourages households to engage in more spending.

The second kind of accommodation is less conventional. The Fed has bought about 2.1 trillion dollars of longer-term government securities, and the FOMC has committed itself to buying an additional 0.2 trillion dollars of these securities by the end of June. The thinking behind this form of accommodation is that the FOMC's holdings of 2.3 trillion dollars of longer-term securities raises their prices and lowers longer-term yields. In so doing, more long-term investments—like building factories or hiring workers—become more attractive to businesses.

Together, the low fed funds interest rate and the holdings of long-term government securities provide a formidable amount of monetary policy accommodation. We can quantify their joint effect using results in a recent research paper by Federal Reserve staff.[3] That paper estimates that if the Fed buys 200 billion dollars worth of long-term government securities, the Fed provides stimulus to the economy equivalent to that achieved by lowering the fed funds rate by 25 basis points. This translation implies that, at the end of 2010, the FOMC's total amount of monetary accommodation was roughly equivalent to what it could achieve by maintaining a fed funds rate of negative 2.5 percentage points.

This level of accommodation was adopted in November 2010, when the FOMC committed itself to buying 600 billion dollars of longer-term Treasuries by June 2011. The decision was nearly unanimous. I was not a member of the Committee at that time, but I did support the decision. We had seen a rather sharp fall in core inflation over the course of 2010,

[3] See Chung et al. (2011).

compared with what we had seen in 2009 and compared with what I had expected earlier in 2010. I believed that it was appropriate to ease policy in response to this fall in inflation. For myself, I would have preferred to have been able to lower the fed funds rate—but that option was not available.

Notice that the FOMC could have chosen a greater degree of accommodation by buying more long-term Treasuries. It could have chosen a smaller degree of accommodation by buying fewer long-term Treasuries. My conclusion is that, in late 2010, this level of accommodation was neither too tight nor too loose, given prevailing economic conditions.[4]

But economic conditions change, and monetary policy must adjust to those changes. Here's a metaphor that may be helpful. We can think about the level of monetary accommodation as being akin to a gas pedal on a car and the Fed's dual mandate as being a target speed. Right now, the car is going too slowly, and so the Fed has its foot on the accelerator.

There is one tricky part with the metaphor: with a car, a driver can just keep his foot on the gas until he hits his target speed. Monetary policy operates with long and variable lags—it's like driving a car in which the car's rate of acceleration responds 10 to 20 seconds after the driver adjusts the gas pedal. A driver of such a car will have to ease up on the gas as he gets closer to his target speed—or he will end up going too fast. In the same way, the Fed needs to lower its level of accommodation as it gets closer to fulfilling its price and employment mandates. Of course, like driving, monetary policy is an exercise in scenario analysis. If the car starts going uphill and its speed falls, then the driver needs to put more pressure on the gas.

[4] This judgment is roughly consistent with the prescriptions of standard monetary policy rules. For example, the Taylor (1993) rule would prescribe a fed funds rate of -2.5 percent, given an inflation target of 2 percent, current inflation of 0.8 percent, and an output gap of -9.4 percent. The Taylor (1999) rule would prescribe a fed funds rate of -2.5 percent, given an inflation target of 2 percent, an inflation rate of 0.8 percent, and an output gap of -4.7 percent.

Similarly, if the economy were to move further from the Fed's dual mandates over the course of 2011, then the FOMC would need to put more pressure on the monetary gas pedal and increase the level of its accommodation.

When I engage in monetary policy scenario analysis, I find it useful to start—but not finish—with my baseline economic forecast that I described earlier. When the FOMC adopted its current level of accommodation in late 2010, year-over-year core PCE inflation was 0.8 percent. My baseline forecast is that, by the end of 2011, core PCE inflation will be 1.5 percent—that is, 70 basis points higher than in the prior year. The Fed would then be closer to its price stability mandate—and so should ease the pressure on the monetary gas pedal. My recommendation in this scenario would be to raise the target fed funds rate by 50 basis points.

How do I arrive at this figure, as opposed to a smaller or larger one? There are three elements to my calculation. First, the standard response to a 70 basis points increase would be to raise the target interest rate by a larger amount—that is, by at least 70 basis points. For example, the widely known rules associated with John Taylor of Stanford University would recommend that the response should be to raise the target interest rate by 1.5 times the increase in core inflation—that is, by 105 basis points.

Monetary policy should also adjust in response to changes in labor market slack. These changes are typically hard to measure. However, like many other economists' forecasts, my baseline forecast is that the unemployment rate will be at least one percentage point lower at the end of 2011, relative to November 2010. This kind of fall in the unemployment rate would generally be viewed as signaling a decline in slack, as would the increase that I expect to see in core inflation. This fall in labor market slack would argue in favor of raising the fed funds rate by even more than the 105 basis points that I mentioned earlier.

These two elements—the increase in core PCE inflation and decline in labor market slack—imply that the target fed funds rate should be raised by at least a percentage point. However, there is a third effect that partially offsets the first two effects. The level of accommodation provided by the Fed's holdings of long-term securities depends on how long people expect those holdings to last. To take an extreme, if the Fed were expected to sell all of its securities in the next day, those holdings would no longer provide any noticeable downward pressure on long-term interest rates. Now, the Fed is certainly not going to sell its securities tomorrow! But, at the end of 2011, we are presumably one year closer to the eventual normalization of the Fed's balance sheet than we were at the end of 2010. The staff research paper that I mentioned earlier estimates the consequent reduction in accommodation to be roughly equivalent to a 50-basis-point increase in the fed funds rate.

By putting these three elements together, I arrive at my conclusion: if PCE core inflation rises to 1.5 percent over the course of 2011, the FOMC should raise the fed funds rate by around 50 basis points. Of course, a core inflation rate of 1.5 percent is still markedly below the Fed's price stability objective of 2 percent. Accordingly, an increase of 50 basis points in the fed funds rate would still leave the Fed in a highly accommodative stance. First, the fed funds rate would be extremely low—between 50 and 75 basis points. As well, the Fed's holdings of long-term assets would continue to provide significant accommodation. Using estimates from the staff research that I mentioned earlier, we can conclude that the total monetary policy package of the two forms of accommodation would be roughly equivalent to maintaining a fed funds target rate of negative 1.5 percentage points. Such a stance can only be described as being easy monetary policy—just not as easy as late 2010.

Thus, under my baseline forecast, it would be desirable for the FOMC to raise the fed funds target interest rate by a modest amount toward the end of 2011. Of course, the FOMC could also reduce accommodation by shrinking the Fed's holdings of long-term government securities. Such a reduction could take place in one of two ways. First, the FOMC is currently investing any principal payments from its securities holdings into long-term Treasuries. The Committee could decide to stop all or part of these reinvestments. Alternatively, the Committee could reduce accommodation by choosing to sell some long-term assets.

These two approaches of reducing accommodation operate on the Fed's balance sheet. I'm open to these approaches to reducing accommodation. However, based on what I know now, I would prefer to reduce accommodation by raising the fed funds target interest rate. I have more confidence in that instrument of policy, based on our many years of experience with it. I suspect that this confidence is shared by the public at large.

I do think that the Fed needs to shrink its large balance sheet. But I see that as a longer-term mission that can take place over the next five or six years or so. I believe that this mission should be guided by two key principles. First, the Fed should commit itself to a path of shrinkage of its asset holdings. Second, that path should be sufficiently gradual that it will interact little with the effectiveness of monetary policy. Along these same lines, the FOMC should offer as much certainty as possible about the rate of shrinkage.

I have been describing how monetary policy should react to one particular scenario, my baseline forecast. As I noted, my baseline forecast about inflation was wrong last year, and could well be again this year. As a policymaker, I need to be prepared for that possibility. In terms of inflation, there are two kinds of errors to contemplate. On the one hand, my forecast for core PCE inflation might well be too high. If core PCE inflation were to fall over the course of 2011 relative to 2010, then it would be desirable for the FOMC to ease further in response to that decline. I imagine that easing would take place through the purchase of more long-term government securities.

On the other hand, my forecast for core PCE inflation might be too low. For example, core PCE inflation might rise to 1.8 percent over the course of 2011. The FOMC should respond to evidence of such a large increase by raising the target fed funds rate even more aggressively than I have suggested. I would recommend raising the target fed funds interest rate shortly thereafter.

Let me wrap up. My goal today has been to lay out my outlook for the economy and give you a sketch of how I believe monetary policy should react to changes in economic conditions. Under my baseline forecast, I believe that it would be appropriate for the FOMC to raise the fed funds target interest rate by a modest amount at the end of 2011. However, that forecast—like all forecasts—is subject to error. I've also discussed how my policy choices should and would react to those errors—that is, I've discussed my policy reaction function.

I began this speech by broadly describing the makeup of the Federal Reserve System and its policymaking body, the Federal Open Market Committee, as well as my role on that Committee. I raise this point again at the end to underscore the independent—yet collaborative—nature of the FOMC. As I described, each member of the FOMC has his or her own policy reaction function, grounded in our distinct but related views. I believe it is our responsibility to describe those views to the public. In that respect, I hope you found this speech enlightening, and I am happy to take your questions to provide fuller explanation on these and other matters. Thank you once again.

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