

**Meeting of the Federal Open Market Committee on
November 1–2, 2011**

A joint meeting of the Federal Open Market Committee and the Board of Governors of the Federal Reserve System was held in the offices of the Board of Governors in Washington, D.C., on Tuesday, November 1, 2011, at 10:30 a.m. and continued on Wednesday, November 2, 2011, at 8:30 a.m. Those present were the following:

Ben Bernanke, Chairman
William C. Dudley, Vice Chairman
Elizabeth Duke
Charles L. Evans
Richard W. Fisher
Narayana Kocherlakota
Charles I. Plosser
Sarah Bloom Raskin
Daniel K. Tarullo
Janet L. Yellen

Christine Cumming, Jeffrey M. Lacker, Dennis P. Lockhart, Sandra Pianalto, and John C. Williams, Alternate Members of the Federal Open Market Committee

James Bullard, Esther L. George, and Eric Rosengren, Presidents of the Federal Reserve Banks of St. Louis, Kansas City, and Boston, respectively

William B. English, Secretary and Economist
Deborah J. Danker, Deputy Secretary
Matthew M. Luecke, Assistant Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
David W. Wilcox, Economist

James A. Clouse, Thomas A. Connors, Steven B. Kamin, Loretta J. Mester, Simon Potter, David Reifschneider, Harvey Rosenblum, Lawrence Slifman, Daniel G. Sullivan, and Kei-Mu Yi, Associate Economists

Brian Sack, Manager, System Open Market Account

Jennifer J. Johnson, Secretary of the Board, Office of the Secretary, Board of Governors

Patrick M. Parkinson, Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang, Director, Office of Financial Stability Policy and Research, Board of Governors

Robert deV. Frierson, Deputy Secretary, Office of the Secretary, Board of Governors

William Nelson, Deputy Director, Division of Monetary Affairs, Board of Governors

Andrew T. Levin, Special Adviser to the Board, Office of Board Members, Board of Governors

Linda Robertson, Assistant to the Board, Office of Board Members, Board of Governors

Charles S. Struckmeyer, Deputy Staff Director, Office of the Staff Director, Board of Governors

Michael P. Leahy, Senior Associate Director, Division of International Finance, Board of Governors; William Wascher, Senior Associate Director, Division of Research and Statistics, Board of Governors

Ellen E. Meade, Senior Adviser, Division of Monetary Affairs, Board of Governors

Daniel M. Covitz and Michael T. Kiley,¹ Associate Directors, Division of Research and Statistics, Board of Governors

Christopher J. Erceg,¹ Deputy Associate Director, Division of International Finance, Board of Governors; Fabio M. Natalucci, Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Brian J. Gross,¹ Special Assistant to the Board, Office of Board Members, Board of Governors

David Lopez-Salido,¹ Assistant Director, Division of Monetary Affairs, Board of Governors

David H. Small, Project Manager, Division of Monetary Affairs, Board of Governors

Mark A. Carlson, Senior Economist, Division of Monetary Affairs, Board of Governors

Penelope A. Beattie, Assistant to the Secretary, Office of the Secretary, Board of Governors

Sarah G. Green, First Vice President, Federal Reserve Bank of Richmond

Glenn D. Rudebusch, Executive Vice President, Federal Reserve Bank of San Francisco

David Altig, Geoffrey Tootell, and Christopher J. Waller, Senior Vice Presidents, Federal Reserve Banks of Atlanta, Boston, and St. Louis, respectively

¹ Attended the portion of the meeting relating to monetary policy strategies and communication.

Todd E. Clark, Edward S. Knotek II, and Nathaniel Wuerffel, Vice Presidents, Federal Reserve Banks of Cleveland, Kansas City, and New York, respectively

Deborah L. Leonard, Assistant Vice President, Federal Reserve Bank of New York

Robert L. Hetzel, Senior Economist, Federal Reserve Bank of Richmond

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November 1–2, 2011**

November 1 Session

CHAIRMAN BERNANKE. Good morning, everybody. This is a joint FOMC–Board meeting. I need a motion to close the meeting.

MS. YELLEN. So moved.

CHAIRMAN BERNANKE. Thank you. We welcome you, Esther George, in your new capacity as President of the Federal Reserve Bank of Kansas City. Welcome again.

MS. GEORGE. Thank you.

CHAIRMAN BERNANKE. Before launching into our official business, President Fisher needs to describe an intra–Reserve Bank transaction. President Fisher.

MR. FISHER. Yes, thank you, Mr. Chairman. Unlike some operators on Wall Street, we at the Federal Open Market Committee do pay our debts in full. [Laughter] I have a debt that I need to pay back to the gentleman on my left. [Laughter] I am tempted to claw his eyes out and scratch his legs during the meeting, but instead, being honorable, this is the bet. [Laughter]

MR. BULLARD. Let the record show—

MR. FISHER. This is beer. This is the elixir of working men and women, and I never resist giving some facts. Beer is the third-most consumed liquid product in the world after water and beer. It goes back to at least the Neolithic Period, 9,500 B.C. There was a goddess of beer that the Sumerians have called Ninkasi. And there is a famous prayer that is called “The Hymn to Ninkasi.” I evoked it so many times during the sixth game, but I found out that Ninkasi, whoever she was, gave way to the god of Bud. There it is, Shiner Bock, the best of Texas beers. I would have brought you a Lone Star, but real men and women don’t drink light beer.

[Laughter]

Mr. Chairman, thank you for giving us this opportunity. I won't tell you how I snuck it into this room. I never want to go through that security procedure again. [Laughter] But you won, congratulations.

MR. BULLARD. Thank you, sir. And a great World Series it was.

MR. FISHER. It was a terrible World Series. [Laughter]

MR. TARULLO. What were you going to pay up if he won?

MR. BULLARD. A six-pack of the local brew.

MR. WILCOX. Bud Light. [Laughter]

MR. BULLARD. Bud Light, Busch.

CHAIRMAN BERNANKE. Okay. Meeting is adjourned. [Laughter]

Let's turn to item 1 on the agenda. The retirement of Dave Stockton opens up a vacancy. We propose to select David Wilcox as economist for the FOMC, and Larry Slifman as associate economist, effective until the organizational meeting in January 2012. No objections? [No response] All right. Thank you very much.

Let's turn now to item 2 on monetary policy frameworks. Let me begin the discussion by turning to Michael Kiley, who will lead the staff presentation.

MR. KILEY.¹ Thank you. Early last month, Committee participants received a memo on "Alternative Monetary Policy Frameworks" that I coauthored with Chris Erceg and David Lopez-Salido. The memo discussed several policy strategies that the Committee might wish to adopt that could potentially provide additional stimulus or protection against especially undesirable outcomes.

As highlighted in the box at the top of your first exhibit, these commitment strategies are broadly consistent with flexible inflation targeting—that is, with a policy framework that combines commitment to a medium-run inflation objective with the flexibility to respond to economic shocks as needed to moderate deviations of employment from its "full employment" level. In our analysis, we assumed that the Committee aims to achieve an inflation rate of 2 percent, consistent with the majority of longer-run projections from the Summary of Economic Projections (SEP)

¹ The materials used by Mr. Kiley are appended to this transcript (appendix 1).

and other communications by the Committee. In addition, the full employment goal is interpreted as an unemployment rate in the range of 5 to 6 percent, also consistent with the majority of longer-run projections from the SEP.

Given these objectives, we focused on how strategies that involve making conditional commitments about how the policy rate will be adjusted going forward can contribute to improved macroeconomic outcomes relative to the current strategy of the Committee, which might be described as one of constrained discretion. To illustrate the role of commitment, we considered two examples of optimal control simulations of the type presented in the Tealbook using the FRB/US model: One example, the “discretion” case, assumes that policymakers follow an optimal policy on a period-by-period basis and are unwilling to promise future accommodation; the second example, the “commitment” case, assumes that policymakers are willing to commit (conditional on economic outcomes) to future policies that are potentially more expansionary than would otherwise be chosen in order to stimulate activity today.

As shown in the figures in the next three panels (which also include the projections in the September Tealbook, which are little different from those in the most recent projection), these different approaches result in notable differences in outcomes for inflation and unemployment. In the discretion case, policy, as measured by the federal funds rate (reported in the middle-left panel) is only slightly more accommodative than in the Tealbook baseline, whereas the commitment approach involves a plan to maintain the federal funds rate near zero until the end of 2015. In the simulation, the additional accommodation under the commitment approach brings about a persistent fall in the unemployment rate (shown in the middle-right panel) and a sustained rise in inflation (reported at the bottom left) to a little over 2 percent. Given the tight labor market and slightly above-target rate of inflation in future years under the commitment strategy, future policymakers would presumably be tempted to renege on the accommodative policy stance promised, but given their commitment, they are assumed not to do so.

As highlighted in the memo and noted in the bottom-right box, several features of the optimal policy evident in the FRB/US simulations appear robust across a range of models. First, the optimal policy given the baseline outlook involves a commitment to hold the nominal funds rate near zero roughly until the unemployment rate approaches its natural rate. Second, unemployment falls below its natural rate and inflation may rise above its target for a time later in the decade under an optimal commitment strategy. Third, while the degree of inflation overshooting is larger in dynamic stochastic general equilibrium models such as EDO and SIGMA than in FRB/US, optimal policies do not result in inflation substantially above 2½ percent for a protracted period under the modal outlook in the models we examined.

While there appears to be substantial benefits in principle from following an optimal commitment strategy, “optimal” policies may be of limited use in FOMC communications, because they are both complex and model-dependent, and because they do not provide clear guidance about how the Committee would respond to

changes in the baseline economic outlook. The next exhibit examines possible practical strategies that may overcome some of the communications challenges and so help achieve some of the benefits of commitment I just outlined. As highlighted in the box at the top left, notable improvements in resource utilization were achieved by two of the strategies we examined—enhanced forward guidance consistent with an aggressive response to resource utilization as in an inertial version of the Taylor 1999 rule, and nominal income targeting. However, price-level targeting, strictly construed, delivered poorer performance in terms of resource utilization in two of the models we considered, including the FRB/US model. This occurred because a strict version of price-level targeting would not place any weight on resource utilization and because plausible assumptions for the current price-level gap would imply little need for near-term policy accommodation. In contrast, nominal income targeting, by responding to both the price level and real activity, would imply a sizable gap at the current juncture under plausible assumptions. This can be seen in the panel at the top right, which shows the path of nominal GDP in the September staff projection and a hypothetical target path for nominal income. The latter assumes that the target equals actual nominal GDP in the fourth quarter of 2007 and then grows at the target rate of inflation, 2 percent, plus the past and projected growth rate of potential output estimated by the staff. Based on current estimates of the output gap of around 6 percent, the nominal income gap would be around 7 percent in the third quarter of 2011.

The middle panels report the September Tealbook projection along with the outcomes (using the FRB/US model) under the approach in which the federal funds rate is set according to an inertial Taylor rule and nominal income targeting. Key results are also summarized in the bottom panel. As highlighted in the next bullet point, the inertial Taylor 1999 interest rate rule brings about a notable improvement in the unemployment rate, at the cost of somewhat higher inflation. This result—that an aggressive response to resource utilization as in the inertial Taylor 1999 rule implies less anchoring of inflation—was apparent in other simulations reported in the memo. Nominal income targeting also improves outcomes for unemployment while bringing inflation closer to 2 percent; indeed, the inflation and unemployment outcomes are fairly similar to those under the optimal commitment strategy shown in the first exhibit.

Finally, as emphasized in the last set of bullets, each strategy involves a clear and credible commitment to respond to economic conditions for the next 5 to 10 years in a particular way, thereby importantly influencing financial market and inflation expectations. As a result, policy communications that lay out the expected course of the federal funds rate or communicate the conditions that may trigger the onset of tightening could facilitate achieving better outcomes. For example, under the nominal income–targeting approach, the federal funds rate remains at its effective lower bound until the unemployment rate falls below 7 percent, while under the inertial Taylor 1999 rule approach, the departure of the funds rate from its effective lower bound occurs around when inflation is expected to persistently exceed 2½ percent; an incremental step in the direction of communicating these approaches

could involve specifying triggers such as these (a topic analyzed in greater detail in the forward-guidance memo sent to the Committee in September).

The third exhibit discusses the robustness of these results across different scenarios or economic models. In our memo, we examined a recession scenario and an inflationary scenario; the top and middle of the exhibit focus on the recession scenario. As highlighted in the top-left box, we considered a recession scenario in which aggregate demand weakens enough to bring the unemployment rate to over 11½ percent for much of 2012 and 2013 under the baseline strategy (which uses the outcome-based rule reported in the Tealbook and could be interpreted, roughly, as a continuation of the Committee’s historical approach).

The federal funds rate (the top-right panel) remains at its effective lower bound until the end of 2015 under the outcome-based rule (the black line) while core PCE inflation falls to about 0 percent by 2014. The inertial Taylor 1999 rule (the blue line) leads to lower unemployment in 2014 and 2015 and also cushions the decline in inflation, which falls below 1 percent over 2012 to 2014. Nominal income targeting (the red line) limits the rise in unemployment and better mitigates the decline in inflation. These effects arise because the nominal income–targeting approach allows the unemployment rate to eventually fall significantly below the long-run sustainable rate in order to push nominal income back up to the assumed target. Specifically, the shortfall in activity implies lower nominal income both directly via a decline in real income and indirectly via the repercussions for prices of lower economic activity; nominal income targeting acts to unwind the lower price level induced by the recession by boosting inflation above target later through policy actions that remain accommodative for significantly longer than under the estimated historical policy rule, thereby providing additional stimulus.

Of course, the effectiveness of nominal income targeting in this scenario depends on the assumption that this strategy credibly influences the public’s beliefs about the policy approach likely to prevail five or more years ahead. The public may doubt such long-horizon commitments. Indeed, the credibility of the policy strategy is central to all the approaches we examined, and the Committee may need to take several steps related to its internal deliberations and public communications to achieve even some of the gains in economic performance associated with the approaches we considered.

As highlighted in the box at the bottom, we also considered an inflationary scenario in which adverse price shocks and rising inflation expectations bring about a persistent increase in inflation. Our analysis showed that nominal income targeting performed well in such a scenario, stabilizing both unemployment and inflation; in contrast, the approach consistent with the inertial Taylor 1999 rule, by responding substantially to resource utilization without an anchor for the price level, stabilized unemployment but amplified the impact on inflation.

Finally, the results emphasized in these exhibits were fairly robust when we considered the performance of these strategies in models other than FRB/US.

Nominal income targeting also achieved improvements in inflation and unemployment in simulations of dynamic stochastic general equilibrium models (such as SIGMA and EDO, two staff models) and in a small model based on research by economists throughout the Federal Reserve System. In contrast, price-level targeting performed poorly in the FRB/US model and the small model. Finally, price-level targeting performed well in the EDO model. This model is perhaps most similar to that used in some recent research that suggests price-level targeting can be a good strategy. As a result, our analysis confirms the support for price-level targeting provided by some research while highlighting that this result is sensitive to assumptions regarding the structure of the economy.

Moving to your final exhibit, Committee participants received a set of questions related to these issues on October 25; for your convenience, these questions are reproduced here.

CHAIRMAN BERNANKE. Thank you very much. The floor is open for questions. Let me start with a quick one. In the nominal GDP targeting on exhibit 2 we show a gradual approach to the target. How quickly do you assume that actual nominal GDP approaches the trend level, and how do you communicate that to the public?

MR. KILEY. In all of the cases, whether it is nominal GDP targeting or the inertial Taylor rule approach, policy is actually governed by a rule, not by a pure targeting approach. So, there is no specific objective for how quickly nominal income approaches its target.

We assumed that the policy strategy would be highly inertial so that policy adjustments would be very slow. We did that because the policy literature suggests that in many models, highly inertial policies are a really good idea. Those strategies imply that nominal income hits the target, depending on which model, late this decade or under some of the models even later. In the FRB/US model, nominal income would hit the target around, say, 2018 and overshoot. In the EDO model, it hits around the same time, and there is no nominal GDP overshooting. It essentially hits that level. In the small model we considered, because inflation is so inertial, it could take even longer, and nominal GDP wouldn't hit the target over the next 5 to 10 years.

The answer to the question depends upon the model and the specific degree to which the nominal income targeting is inertial.

CHAIRMAN BERNANKE. How do you communicate how aggressively you are going to respond to the gap?

MR. KILEY. One way to communicate that would be by laying out a simple policy rule, and that obviously was what we did in all of the models and is one thing that is robust across models. It doesn't depend on when nominal income achieves target. Showing how you would change policy in response to nominal income doesn't depend on a specific model's rate at which the nominal income gap closes, but, rather, depends on your model. Then, one could explain that in terms of your baseline outlook for nominal income or—

CHAIRMAN BERNANKE. All right. Thank you. Other questions? President Lacker.

MR. LACKER. Yes, thank you, Mr. Chairman. I wanted to ask about the optimal policy under discretion. You say that you assume the Committee aims for a target of 2 percent. I am wondering, does the policymaker choose what inflation rate we desire in the long run? Or do you hold that constant?

MR. KILEY. It is a period-by-period choice for the policy rate, given a long-run objective. The policymaker is trying to choose where inflation and unemployment will go on a period-by-period basis. They don't reconsider the 2 percent inflation objective. That is hardwired into a policymaker's DNA.

MR. LACKER. In a sense, there is some commitment.

MR. KILEY. That is right.

MR. LACKER. Thus the quotes around "discretion." So the Taylor rule is not time-consistent, and it describes what we do pretty well, right? Is that true?

MR. KILEY. Any simple instrument rule will not be the optimal discretionary policy. There would be an incentive to deviate from it.

MR. LACKER. Right. The extent to which the Taylor rule captures how we behave now, is it your judgment that we behave with some greater level of commitment than is embodied in your optimal policy with discretion?

MR. KILEY. As I noted, we would view the historical approach of the Committee as one consistent with constrained discretion. Clearly the Committee doesn't adjust policy willy-nilly and doesn't reconsider on a meeting-by-meeting basis every aspect of its strategy. Definitely, there are commitments.

Indeed, under the discretion case, as you noted, we take a number of commitments off the table and assume that, for example, an inflation objective of 2 percent is hardwired in the policymaker's DNA. In addition, policy communications have given guidance regarding the outlook for the federal funds rate, for example, and I am sure the Committee and the public view those as conditional commitments. It would be false to suggest that the policy approach involves zero commitments. The optimal discretionary case here involves a number of commitments as well, and the extent to which there could be gains from further commitment is consistent with the story that we have told in illustrating commitment versus discretion.

MR. LACKER. I have one other question, Mr. Chairman, if I could. You have an objective function that you carry across these scenarios and across models that has the policymaker minimizing this weighted sum. On the unemployment side, it is the deviation of unemployment from a u^* that is fixed, that is a constant. Am I right about that, or is it the Tealbook's NAIRU?

MR. KILEY. There are the modest movements in the Tealbook's natural rate.

MR. LACKER. Is it the natural rate that is adjusted for the extended unemployment benefits?

MR. KILEY. It is. That is not particularly important, because that is only an adjustment in the next year.

MR. LACKER. In the model EDO, you start from preferences, endowments, and technologies, and, principally, you could derive the right loss function, right? And it wouldn't have the same property that the u^* is some fixed, smooth thing. Am I right about that?

MR. KILEY. Yes, that's correct.

MR. LACKER. There is this dichotomy here, right? The change in the unemployment insurance, the richness of those—it is a kind of a shock, right? You guys take that on board for NAIRU, but you don't take on board any of the other shocks that have hit the economy in the past few years. Have you guys thought about that dichotomy, that contrast?

MR. REIFSCHEIDER. Before this recession we thought the NAIRU was $4\frac{3}{4}$ percent. Now we think, leaving aside the effects of extended unemployment benefits, things like that, it is 6 percent. When you ratchet that up, that is a very persistent hit to labor market functioning, relative to what we thought.

We have also gone back and taken a look at what it was prior to the recession. I don't think it was quite as low as $4\frac{3}{4}$ percent. But we have assumed that—through very persistent reduced attachment to the labor force, through duration of employment, through long duration of employment hurting people's skills, things like that—there are persistent fallout effects, supply-side effects. As Mike said, those effects are taken into account in these analyses.

MR. LACKER. That results in a figure that is really smooth, and the vision you'd get out of EDO is that every quarter's TFP shock should affect the natural rate. There is still a bit of a bucket of left-out shocks there. Thank you.

MR. KILEY. That is technically true. In much of the literature actually incorporating unemployment in models like EDO—in practice, that is not the result that comes out. The natural rate of unemployment is often very smooth. In addition, it is important to be consistent across all the implications of a model if one wants to push the story that far. For example, in EDO, given the definition of the natural rate of unemployment that you are suggesting, that would be higher. It is also the case that there is a natural rate of interest that should be accounted for in a model like that, and that is actually much, much lower because of the effect on financial frictions estimated by that model. If you take both of those factors into account, you would want policy to be even easier than in a model like FRB/US. One shouldn't cherry-pick a particular implication of a model. One needs to walk through the analysis very consistently, and it is not always what one thinks.

MR. LACKER. Perfectly fair.

CHAIRMAN BERNANKE. Governor Raskin.

MS. RASKIN. Yes. Thank you, Mr. Chairman. One question, Michael, from an operational perspective on the nominal income targeting, and that has to do with whether the activity component of nominal income is known in a timely way and as a reliable data point sufficient to permit adjustment.

MR. KILEY. One could have different opinions on that. At the current juncture, I think the answer is clearly yes, the data are timely enough. Over the period that we are considering these strategies, nominal income would provide a reliable enough signal, because we are not

talking about whether the federal funds rate should be up or down 25 basis points this quarter, and then adjusted next quarter. We are looking at a situation in which, in our estimation, a plausible nominal income gap is about 7 percent. The measurement error or the degree of revision in nominal income is just not that high, but there are revisions.

It is certainly possible that when the economy is back closer to steady-state conditions that that type of a consideration would be important from meeting to meeting. I think that's something that one wants to consider when one is thinking about whether or not an intermediate target like nominal income is appropriate for the next 5 to 10 years or is appropriate forevermore.

And the answer to that question is that it doesn't have to be the same. Right now we are in extraordinary times. One of the problems with nominal income targeting—that we are not exactly sure about the level of nominal income this quarter—is actually not that important right now, even though 10 years from now I hope that that is a really important consideration.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you. I have a question. It seems like the way you have presented it implies that the nominal GDP targeting implied a lower trigger or a lower threshold for exit. Do you need the actual framework of nominal GDP targeting to generate these outcomes? Or could you just actually have the lower trigger threshold? And would that be sufficient? I mean, how does the staff view the articulation of the framework vis-à-vis how that maps into the trigger? I am not sure I am being clear.

MR. KILEY. I am not sure that there is a uniform step. The way that I would think about it is that certainly within a given model, or a given view of the world, specifying a trigger and an outlook for the funds rate is the same as saying that you want a target for nominal GDP. But as I noted earlier when we were talking about the rate at which nominal GDP might

approach its target, those implications are not robust necessarily across different views of the world; whereas reference to a set of goals—and those could be unemployment goals and inflation goals, those could be nominal income, those could be something else—may be more consistent across frameworks.

The way that I would view it is that there is some distinction between simply saying the funds rate is going to be a certain value for the next X quarters and a framework, because the framework provides information to individuals who have a different view. And over time they will learn whether their view is confirmed or disputed by the data and presumably update their expectations.

VICE CHAIRMAN DUDLEY. I am trying to get at a point—how much of the benefit do you get by having the trigger values out there versus the framework out there? I am trying to understand how you parse those two things.

MR. KILEY. Certainly, under the baseline outlook you get some of the benefit from the trigger and some of the benefit from the overall framework. And then, in the shocks, when things turn out different than you expect, the triggers don't necessarily tell you what is going to happen in all cases, because they may involve differences in policy in periods after the trigger has happened. The framework provides some of the benefit.

In the simulations, or in the forward-guidance memo, triggers that signal additional policy accommodation are helpful at the current time, if one wants to improve outcomes for resource utilization. But there appear to be some gains from moving beyond that.

VICE CHAIRMAN DUDLEY. Thank you.

MR. WILCOX. It would be difficult to analyze that question, in principle, in your models, because the agents in your models understand exactly what the framework is. I think

what Michael is saying is that communication clarity is key to the difference between a trigger strategy and a nominal income-targeting strategy, and communication isn't an issue that is salient in the model.

MR. KILEY. Yes, that is the hard part.

CHAIRMAN BERNANKE. On the other hand, nominal income targeting is only an approximation of the optimal path, so a lot depends on the quality of the approximation as well.

MR. KILEY. Right. And certainly, across different models is a less-good approximation. We had one example of nominal income targeting a specific rule, changing those parameters slightly. It is not going to be quite as good an approximation of the optimal policy rule.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. Thanks for the great memo, and thanks for the great presentation, Michael. I had two quick questions. One is, in exhibit 3, when I look at PCE prices under nominal income targeting, the graph ends in 2018, and we are still above 3 percent. How long do we stay above 2 percent in that simulation?

MR. KILEY. This is a huge shock, so the economy takes a long time to get back to steady state.

MR. KOCHERLAKOTA. Yes, I agree with that.

MR. KILEY. It doesn't actually take that long to get back to 2 percent. This is sort of the peak, and it starts coming down and will be going back closely to 2 percent in the several years after that. But the economy won't settle down. It will undershoot, and then it will come back up, because the economy under this particular policy strategy, which is just focusing on nominal income, will be oscillating in toward that steady state for a while under the FRB/US

model. That is not necessarily true in all the models. But as I noted, part of the success of that strategy in this scenario is this willingness to have inflation go to 3 percent.

MR. KOCHERLAKOTA. I agree, yes.

MR. KILEY. We certainly did simulations in which, when you see that, you just back off and want to give up on nominal income targeting. That trims the gains and puts it closer to the Taylor-type strategy.

MR. KOCHERLAKOTA. Thanks. That was useful. This is not my second question. It is more of a follow-up. I think that this gets back to something that President Lacker was asking about discretion. One thing that might be interesting to know is the size of the losses that are being forgone by a discretionary FOMC as we go along these scenarios. If you are in 2017, and the inflation rate is at 3 percent and unemployment is down under 4, what is that FOMC thinking about how much they are forgoing in terms of the losses? I think that would help us understand how credible these kinds of plans are. I don't know if I was making sense or not.

MR. KILEY. Yes.

MR. KOCHERLAKOTA. My second question is, what is the size of our shortfall, in terms of nominal GDP, right now? The staff has an estimate of potential, and I think the shortfall right now is being calculated relative to that notion of potential GDP, and that comes to be about 7 percent in the current quarter relative to where we were starting in December '07 or something like that, fourth quarter '07. Many outside observers would say that the gap is actually 4 percentage points bigger than that because they are using some kind of trend line from December '07 to be their guidepost.

The challenge right now is, how do we start to communicate about our nuanced measures of potential GDP to the public relative to just drawing the straight trend line, which I think is

more what people are used to? I will speak for myself. When I try to communicate to the public about how deep this episode has been, I use the trend line. For one thing, I think potential GDP is Class II FOMC information, so I am not able to talk about it. [Laughter] But more seriously, it is a challenge for us to say that we are going to do nominal income targeting, but, by the way, we don't view ourselves as responsible for 4 percentage points of what you think of as a shortfall. It is a communication issue that might be hard.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. And thank you, Michael, for the presentation and the analysis. I love this kind of stuff; I am a big fan.

I have a couple of comments. One is, when we talk about price-level targeting, I thought it got a little jumbled, because I guess you are talking about what I would call strict price-level targeting. When I think back to the original Svensson paper on this, he took this objective that had the output gap and inflation in it, and he replaced inflation with price-level targeting. The output gap was still there, so to me, when we went to the price-level-targeting argument, it was all there, and so there wasn't anything that indicated that price-level targeting means that you are going to ignore the real side of the economy. There wasn't anything like that. To have price-level targeting get a bad name from this memo, which is what is happening, I think is a little unfair to the approach. The price level was supposed to substitute for the commitment that wasn't there when you had the inflation rates there. That was a pretty good insight and has been verified in subsequent models.

You can go to nominal income targeting instead, but you could also go to flexible price-level targeting. What is the difference between those two is really the question. What is the

difference between flexible price-level targeting, as I would see it originally envisioned by Svensson, and nominal income targeting?

MR. KILEY. Nominal income targeting is just one example of flexible price-level targeting. Because there are an infinite number of examples of flexible price-level targeting, we picked the polar cases that are easy, round numbers; we picked 0 on the output gap, strict price-level targeting, and 1 on the output gap, nominal income targeting. But you are absolutely right that flexible price-level targeting is the best thing to do in some models, and we just chose to focus on the one case. People have some empirical papers that have considered flexible price-level targeting. For example, the one by Gorodnichenko and Shapiro, let's say they have a coefficient of 1 plus some inertia on the price level, and then an even bigger coefficient on the output gap than 1. They would be even more aggressive than nominal income targeting. So one, of course, could have a smaller coefficient on the output gap, and performance would be sensitive to those assumptions. But one would move from "price-level targeting performed poorly" in a couple of the models we considered to "nominal income targeting performed reasonably well" in those models. One would move in that direction as one became more flexible in price-level targeting and put some weight on the output gap.

MR. BULLARD. Okay. Thank you. One thing about this memo that I thought was not addressed—from the perspective of this Committee—is, what are we really worried about? We are worried that you are playing with fire, and you might replay a really bad scenario in which inflation goes up a lot, and you really get into a lot of trouble.

What would it take in this kind of framework to get into that kind of hot water? The answer might be there is no scenario under which that can happen, but the '70s did happen. I think you have to have something in the model that goes too far and really generates a lot of

problems. Otherwise, the question would be, why don't you just commit to zero rates out to 2030, if it is all beneficial?

MR. KILEY. I agree. That is a really hard question, and certainly things can go wrong. It is hard to know what those are. I think if one committed to interest rates of some fixed path until 2030, things would be very likely to go wrong. That is why we talk about strategies that would be conditional on economic outcomes.

In terms of what could trigger a repeat of the 1970s, obviously, I don't know. It is notable that nominal income targeting was proposed in the late 1970s by people like Jim Tobin and James Meade, precisely because inflation was a problem. Then, a subsequent analysis by people in the 1980s—Marty Feldstein, Greg Mankiw, many people—showed it is a good strategy in response to those kind of shocks. The idea, actually, was to prevent that kind of outcome.

MR. BULLARD. I just have one more comment, which President Lacker has already brought up, which is, how fair is it to characterize what the Committee does now as a discretionary policy? In some sense, if you have a Taylor rule, maybe it is a simple Taylor rule, maybe it is not the optimal one, but you can pick the coefficients to be as good as they can be for that particular Taylor rule. That will probably get you pretty close to the optimal outcome. You are committing to the rule, you always behave like the rule, so in a sense there is a lot of commitment already there. How much can you really improve on that, as opposed to the literature, which says that you are always choosing the discretionary solution at every point in time?

MR. KILEY. There is one important aspect of commitment that isn't captured by the Taylor rule. In all of our baselines, the Committee is committed to following some reasonable strategy. The baseline is always a simple rule—the outcome-based rule or something like that.

The types of commitment strategies that Dave and Chris and I were talking about move beyond that simple rule, because they involve some commitment to undo undesirable movements in the price level. So one is willing to have inflation run at 2½ percent for a while, for example, if unemployment is very high, to a degree that is greater than embedded in something like a Taylor rule. That is an insight in the policy literature that can be a good idea, and that is behavior inconsistent with simple policy rules that involve inflation. That price-level-type aspect of nominal income targeting or the optimal commitment strategy or price-level targeting does move beyond the types of commitments that the Committee has, for the most part, been willing to make in the past.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I have two less deep, more mundane questions about the charts that I'd like to see if I understand. Under nominal GDP targeting, nominal GDP is the sum of real GDP plus the GDP deflator, and yet you're talking about what's going on with the PCE price index. If you're really targeting nominal GDP, you're targeting the GDP deflator implicitly, right? How in your calculation do you make that translation, and how do you think about that, again, as another communication device about what we're doing? That's the first question.

MR. KILEY. First, I'll give you technically what we did. This is a question very similar to the question Governor Raskin asked in terms of its implications at the current juncture. What we did mechanically is not be particularly concerned about any trend differences in GDP prices

and core PCE prices, and we set the target for 2 percent for GDP prices, and that's slightly different than a target for 2 percent for core PCE prices or for overall PCE prices.

During normal times—when we are there, 5 to 10 years from now—that would be really important if one's very concerned about 2 versus 2.2 percent. If the gap in nominal income is 7 percent, 2 or 2.2 percent just doesn't matter. It's not important for the types of simulations we're doing right now, but it is important for behavior potentially at other times.

MR. PLOSSER. The second question is sort of related to this. A lot of the level targeting, whether it be price-level targeting or nominal GDP-level targeting, can be quite sensitive to where the path begins, whether you start at December '07 or whether you start at December 2000 or 2003 or what have you. When we think about targeting the level for anything, the sensitivity perhaps to that initial condition, how do we think about choosing what the right initial condition was? Certainly, December 2007 was the peak of the housing bubble and perhaps some other things that you might want to think about. And yet if you go back earlier, as President Lacker has talked about, the inflation rates of 2005 and 2006 were high. I'm thinking about the sensitivity and how we would think about implementing a policy and choosing the right initial condition to measure what you think, in fact, the gap is.

MR. KILEY. It's a hard question. The approach we took was simply: I'm on the staff with the Board, and I think our estimate of the output gap is pretty reasonable. [Laughter] Taking a view in which it happened to be the case that the output gap was pretty close to zero before the recession started in our estimation now, and we said, let's take that as the initial condition because it might be something that one would want to communicate—that we've seen a bad few years and want to make up for those bad few years—and we came up with a reasonable number.

Other people would go back to that same date and just write through a trend line, and they would have an even bigger gap—not the 7 percent we had, but a 10 or 11 percent gap—because they wouldn't be accounting for the unfortunate decline in potential that we've seen in that period. Or you could start from today and say, "the gap is zero, but we're going to follow this strategy in the future," and that would have very different implications.

CHAIRMAN BERNANKE. Any other questions? [No response] Well, we're about ready for a go-round and discussion. I'd like to make a couple of framing comments.

First of all, let me thank the staff, for I think we can all agree that their work has been extraordinarily helpful, really first rate, and it helped me think about this quite a bit. Thanks very much for that work done under pressure of time.

One might think that a discussion of policy frameworks is a little bit arcane, academic, and off point, but actually, it's right at the center of what we're doing now. We're in a situation where the effects of our policy depend at least as much on what people think we're going to do in the future as they do on what we do today, and consequently, the framework that we are using and that we communicate—and the communication is incredibly important—has very real effects on the efficacy of our policy. This is very much part of the contingency planning effort that I promised a couple of meetings ago both in the sense of trying to think about our current framework and thinking about where we might go if things turn much to the worse.

There's probably a narrow way and a broad way to think about this discussion. The narrow way is to note that I think it's not too controversial to describe our behavior as conforming to a version of flexible inflation targeting, which attempts to achieve a broad definition of price stability over the forecast horizon, but in the short term allows some flexibility for stabilization of the real economy.

Where we deviate to some extent from international practice on inflation targeting is that we haven't done everything that some central banks have done in terms of communication, including specifying a numerical objective, providing a comprehensive, collective forecast, providing guidance or even forecasts of future rates, et cetera. One way to think about this discussion is, what additional steps do we want to take, if any, recognizing that we do have a rather different institutional situation here than in many other countries—a large Committee, a dual mandate, et cetera? But another way of thinking about this discussion is an issue that we've talked about many times before, that we want to take further steps to solidify and clarify our flexible inflation-targeting approach, and if so, how could we communicate that?

It's useful—and one of the things I thought that the memo did very well—to show us that there really is a broader issue here, which roughly speaking is the difference between discretionary and commitment-based policy, particularly in a situation where we're at the zero bound and conventional signaling by moving interest rates is not available. To the extent that we can show a committed policy—that we can clarify our future policies will correspond to the optimal path under commitment, similar and analogous to the path that is presented every meeting in the Tealbook—the better results we'll get.

In some sense the broader question is not just about flexible inflation targeting. The broader question is, can we provide a communications framework that will allow us both to convey and to commit to a policy path that will deliver potentially better outcomes on both inflation and growth than the policy framework we have now? I think that's an open question. There are a lot of practical issues that come into play, a lot of special issues related to what model you believe in, and so on, but I would urge us all to think about this in that context, and as much as possible, to divorce it from the current conjuncture and ask the question that if we're

going to adopt some changes in communication, what would serve this Committee well for a period of time.

Before opening the floor, let me restate the questions that were circulated so they'll be in everybody's mind. Narrowly, to the extent that we're looking at a flexible inflation targeting framework, would it make sense to adopt a numerical objective? That would be one way to clarify our goals. In doing so, of course, we would have to make very clear how that relates to our dual mandate and why it's consistent with our dual mandate. The counter argument is that doing that convincingly is a communications challenge in itself, and that's one issue to address.

More broadly, again, beyond the flexible inflation-targeting framework is the question of how we can make better, clearer commitments to future policy, and a number of different approaches have been suggested. We talked at the last meeting about conditional commitments, and we showed a few possible examples in the alternative A1 in the statements. Would it be helpful to specify some conditions under which we change policy, specifying those well in advance? That is one way to try to approximate an optimal policy in terms of commitment.

An alternative way, as the discussion just illustrated, is by specifying intermediate targets. Intermediate targets are an old concept in monetary policy. It's been always used in the sense of a guidepost or a second pillar, a way of providing additional information about policy. But in the current context, as the memo shows, it could be that pursuing a particular intermediate target might be a reasonable approximation to the first-best policy under commitment, and that's an empirical question, in part.

I'm sure many of you have seen some of the commentary on, for example, nominal GDP targets. Christina Romer made the point over the weekend that one potential advantage of something like a nominal GDP target is that it could be viewed as a regime change, and to the

extent that it reflects a real change in how the Fed is doing business, it might have a more dramatic effect on expectations than something more incremental. That being said, of course, big changes are also dangerous, and that's something we need to keep in mind.

Now, a fourth question. So—first, inflation targeting; second, conditional commitment; third, intermediate targets. A fourth question—there was a lot of discussion last time about the economic projections; can we use those better? I think we've made a lot of progress on that front. In particular, we have a proposal to look at projections of our policy rate. In what way could that be complementary to an improved communication strategy?

Finally, let's not forget, it's important as we talk about these things to keep in mind process. Is there a way that we can put this all together in a way that will satisfy the appropriate consultation and discussion within the Committee but also allow us to bring this to the public in a way that will be better understood and better accepted? In particular, a specific suggestion that's been made is that we use the approach we did with our principles of exit strategy, which we published in June in the minutes. Would it be possible, if we do adopt some changes in our communication strategy, to agree on a set of principles that would be sufficiently broad to encompass Committee support, that we could then put out through the minutes or some other mechanism? I think there's a whole bunch of interesting questions here, and this is very central to our current policy decisions. We don't have to resolve all of these questions today, but I do think that this is a valuable investment in time, and I look forward to your comments.

Beginning the go-round, I see President Evans is first on the list.

MR. EVANS. Thank you, Mr. Chairman. I'm not sure I was prepared for every one of those questions, but I certainly appreciate them. Before I simply answer the routine questions, I'd like to put some of this material in context. My first reaction to the outstanding staff memos

is extremely positive. As President Bullard said, I'm a big fan. I thought that was a great presentation, great answers to the questions.

I'm happy to see that there are policy approaches available to us that should produce economic outcomes that are vastly preferred to our current outlook, and as you just mentioned, Mr. Chairman, it's easy to see why there's a growing clamor among an impressive variety of outside experts calling for more aggressive action, like Christy Romer, Mike Woodford, Ken Rogoff, the staff at Goldman Sachs, et cetera.

Outsiders have an easier time advocating these prescriptions. For us insiders, details matter for the implementation. But before we can even consider technical details, I think the first major issue to grapple with is this: Has our current policy framework limited our effectiveness because it's not properly understood by the Committee in its fullness or by the public, or because we disagree on the particulars of our framework? I personally think this is a concern. I mentioned this back in August when I said I thought that there were cracks emerging in our policy framework. I won't belabor this issue. I've given two speeches on the dual mandate and my interpretation of its implications for our policymaking.

I don't believe we all agree on what flexible inflation targeting means and we simply disagree over many details of our policy objectives. Last week President Kocherlakota offered an informative and welcome memo on the dual mandate. I disagree with his preferences, but I welcome the information revelation on these fundamental issues.

Here's my first takeaway message. Our standard policy framework—one that glosses over the details of what we mean by flexible inflation targeting within our dual mandate responsibilities—usually works when the real economy and inflation pressures are within 1 or

maybe 2 percentage points of our goals. But when our policy differences burst into the open, as they have given today's extreme economic circumstances, this ambiguity is not constructive.

My second message is that today we need to adopt a more explicit framework. Even a complete articulation of our standard approach is unlikely to address the full range of relevant risk that the economy and monetary policy currently face. This is of enormous importance.

To highlight the potential value of these alternative policy frameworks, I want to focus a bit on risk-management considerations related to our current economic problems. Since the spring and summer of 2010, it has become more and more apparent that our macroeconomic problems are much larger than we had been planning for. There are essentially two story lines that are used to account for the aberrantly slow growth and high unemployment following the Great Recession, and I'd like to pick up on one of the themes that President Bullard was mentioning in terms of how we could get into trouble with some of these approaches.

The first story line I refer to as the "structural impediments" scenario. In this scenario, the Great Recession was accompanied by an acute period of structural change, labor mismatch, job-killing uncertainties, and excessive regulatory burdens. As best I can tell, this scenario consists of lots of conjectures about economic outcomes and potential equilibriums. I would like to be able to point to macro simulation evidence from empirically relevant general equilibrium models studied by research economists that support this scenario, but I'm not aware of these studies. I don't know where to look, and I'd be happy for anybody to add in a literature list. The links to the relevant economic literature are unclear to me, at least. Nevertheless, in this story line, the role for additional monetary accommodation is modest, at best. We are up against a supply constraint that monetary policy can't fix. In this scenario, we should be guarding against a repeat of the 1970s. We should thus revert to what I refer to as "business as usual" monetary

policies. Accordingly, it's probably time to begin considering removing excess accommodation before inflation rises above target and inflation expectations become unhinged.

The second story line I referred to as the “liquidity trap” scenario. In this scenario, short-term risk-free rates are zero. Actual real rates are modestly negative, but the real natural rate of interest is strikingly negative. This is due to an abundance of risk aversion, extreme patience, and deleveraging, and these attitudes are unlikely to disappear any time soon. In this scenario, we're in the aftermath of an enormous Reinhart–Rogoff financial crisis, and the resulting drags on demand are exceedingly large and persistent. The clear and present danger here is that we repeat the experiences of the U.S. in the 1930s or Japan over the past 20 years. Liquidity traps have been studied in general equilibrium models by Paul Krugman, Gauti Eggertson, and Mike Woodford, and also recently by Iván Werning in a continuous-time framework. The conclusions from this literature indicate that there are monetary policy prescriptions that can vastly improve outcomes in such an event.

I think the evidence strongly favors the liquidity trap scenario. That's my opinion. But rather than putting all of our eggs in one theoretical basket, let's consider the case where we don't know which scenario is really the one we face today. This leads me to think more about a robust risk-management approach to the dilemma that these two scenarios present. If both are possible, but we don't know which one we face, how can we avoid risking a repeat of either the 1970s or the 1930s? Because I put high weight on liquidity trap theories, put me down as being sympathetic to nominal GDP targeting. I was actually not supposed to say that [laughter], but anyway I edited that out. The problem is that policies that are optimal for the liquidity trap scenario would generate high inflation if the structural impediment scenario actually was true. I think that's what President Bullard was alluding to. Conversely, policies that are optimal for the

structural impediment scenario would leave the economy mired in depression and deflation if applied during a liquidity trap scenario.

Fortunately, even amidst these two extreme scenarios, there is a middle-ground policy approach. A relatively robust policy approach would be to sharpen forward guidance in two directions. First, ensure state-contingent accommodative policies as long as unemployment is somewhat above its natural rate. But second, include an additional safeguard that policy will pull back if inflation rises above a threshold that would signal the economy is running into supply constraints, such as those in the structural impediment scenario.

In my opinion, the inflation safeguard threshold needs to be substantially above our inflation objective, and I've said in public perhaps 3 percent. Ken Rogoff has suggested 4 percent, 4 to 6 percent, he even said, and, frankly, Governor Bernanke suggested to Japan also a very large number when he was offering advice.

This guidance is consistent with the most recent liquidity trap research by MIT Professor Iván Werning, which shows that improved economic performance during a liquidity trap requires allowing inflation to run higher than the inflation target. In addition, establishing credible expectations of these events likely requires overshooting the efficient output level and creating an output boom, reversing the resource gap once the natural rate of interest returns to positive territory, and there were many simulations that had those characteristics that Michael was talking about. Under this trigger threshold policy, if the liquidity trap scenario is indeed true, then the massive degree of resource slack in the economy means such an output boom could perhaps be achieved without putting excessive pressure on productive resources. On the negative side, if the structural impediment scenario was instead true, inflation will rise more quickly and without any real-side improvements. In such an adverse situation, the inflation safeguard triggers an exit

from non-evident excessive policy accommodation before inflation expectations become unhinged.

Accordingly, under either scenario, liquidity trap or structural impediments, this policy keeps long-term inflation expectations firm. In my opinion, applying this trigger threshold risk-management approach to our current economic situation is really just an embodiment of what I see as our broader flexible inflation-targeting framework. The benefits of this policy draw me to the structure in alternative A1 with the paragraph 4" option in the Tealbook. However, as I mentioned before, I prefer a 3 percent medium-term inflation trigger instead of the 2½ percent one mentioned there.

According to the logic of the liquidity trap theory, we risk being mired for an unacceptably long period in recession-like circumstances unless we are willing to voluntarily embrace and commit to a higher inflation rate than our medium-term objective, at least for a time. It is against central bankers' DNA to discuss and acknowledge this, but we should not risk an outcome like the U.S. in the 1930s or Japan today. Three percent just isn't such a big number that we should resist it the way the 1930s Fed adhered to the gold standard.

Now, to quickly wrap up with regard to the specific questions posed to the Committee, I agree that the flexible inflation-targeting framework described in the memo is consistent with the Federal Reserve's dual mandate. I also think we should enunciate such a framework, and that it would be helpful for the Committee to be explicit in articulating these principles.

To reach a consensus statement, of course, we need to agree on an explicit numerical target for our inflation objective, and also what that target means operationally. After all, we should be confident that our choice of inflation target and operating procedure are jointly consistent with an exceedingly low probability of hitting the zero lower bound over the next

20 years. We've hit it twice in the past 10 years, in my opinion. I answered the second question extensively. Yes, I think the Committee's best choice is to announce and commit to the optimal policy path under commitment.

Finally, I believe that nominal income targeting is a close cousin to the economic thresholds policies. It is simply bigger and less prescriptive regarding the composition of growth and inflation. I expect that additional forward guidance combined with further asset purchases would either increase growth or generate inflation, or both, but just in case, a bigger communications bazooka is needed. I would prepare the groundwork for introducing nominal income targeting if it's needed. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you, President Evans. Since you took my name in vain, I do feel constrained to mention—

MR. EVANS. No, I thought it was good. [Laughter]

CHAIRMAN BERNANKE. But I do think I need to clarify that those comments were directed at the country that actually was suffering significant deflation, and so it was failing on both the price stability and the economic growth.

MR. EVANS. Yes, I think you're right. I understand that, and in fact, I spent a little more time reading Friedman and Schwartz and *The Great Contraction*, and at the end of that lovely chapter, they had this section on why monetary policy was so inept. And I remember back to the lovely Milton Friedman celebration of his 90th birthday party where you gave a speech where—with Milton Friedman in the front row, attentive as always after a very long night before and that morning and afternoon—you assured him that the Federal Reserve had, indeed, caused mischief in the '30s, and that we wouldn't do it again.

I looked at that chapter, and I totally agree with you that you have been faithful to that. During the contraction, there were policies that should have been taken that were not, that could have prevented deflation and the Depression. I agree with that. I think we could do more, though. That's all I'm saying. Thank you.

CHAIRMAN BERNANKE. A two-handed intervention, President Kocherlakota.

MR. KOCHERLAKOTA. Yes. Thank you, Mr. Chairman. The dialogue that you and President Evans just had is relevant when we think about the Eggertson and Woodford model and the Werning model. I have to admit I understand the Werning model a little better, but in those models, basically, price-level targeting works extremely well, except for the presence of the zero lower bound. It means in some settings that you're not able to keep prices growing at 2 percent or constant. If you're ever in a situation where you're meeting your price-stability mandate in the Werning model, if you're doing well on that and hitting 2 percent, 2 percent, 2 percent, you do not have a problem in that model. That's also true in Eggertson and Woodford.

I think it's important to make this distinction that you just made between that and Japan and the U.S. in the '30s, that those were situations where you could easily point to problems on the price-stability mandate and see that the central bank is not behaving optimally. I think it's more challenging in our current environment where, as you expect in Minneapolis, we've done extremely well on our price-stability mandate—over the past four or five years, we've done very well on it. There are some differences of opinion about how well we're going to be doing going forward, but even there the differences of opinion are relatively minor compared to what we saw in Japan.

I think when we look at these New Keynesian models—they're very hard to bring support for the kind of commitment policies that President Evans has in mind because we're just not that far away from our price-stability mandate.

CHAIRMAN BERNANKE. Well, obviously this will be taken up in some length.

[Laughter] President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. President Evans was quite eloquent and expansive. [Laughter] I have a great deal of sympathy with his views. I'll take a different strategy and use a little more brevity in my remarks.

In terms of question 1, flexible inflation targeting can be consistent with the dual mandate, but being clear about exactly what is meant is critical. Some use the term to place a heavy weight on inflation and a small but nonzero weight on employment. Others use it to imply a lexicographic preference between inflation and unemployment, that is, as long as we are below the inflation target, we have the flexibility to address large output gaps. I would be opposed to either of these interpretations of flexible inflation targeting. What I would support is a quadratic loss function with roughly equal weights on inflation and unemployment as in the optimal policy simulations in the Tealbook, Book B. Were we close to the inflation target but far from our estimate of full employment, we would be accommodative to reduce the quadratic loss function. Were we close to full employment but well above our inflation target, we would have more restrictive policy to return to our inflation target and reduce our loss function.

In terms of question 2, our current approach of using calendar dates to signal the first increase in the funds rate is potentially problematic if we are not willing to adjust it to changing circumstances. For example, significantly greater downside risks or worse-than-expected economic outcomes after the date is set, so that economic conditions are no longer consistent

with the original calendar date. I would prefer to announce our intent to remain at the zero bound until we hit specific economic triggers, such as an unemployment rate at or below 7 percent and an inflation rate of 3 percent or higher. Of course, we would not view such triggers as absolute and independent of all other economic conditions. For example, a forecast of exceptionally strong or weak growth as we approached a trigger might force us to take action earlier or later. I would strongly support moving to conditional commitments, such as the example in option A.

In terms of question 3, I would support considering moving to nominal GDP targeting if it is necessary to forcefully convey a change in regime. It would be most appropriate if we want to signal a regime change that requires more aggressive policies moving forward. I view nominal GDP targeting as preferable to price-level targeting because it is easier to communicate, performs better in simulations, and does not emphasize just one element of the dual mandate. An announcement that nominal GDP targeting was necessary to get much stronger growth in output is understandable to the public and could be effective if it was conveyed in conjunction with more aggressive actions.

In terms of question 4, we need to be clear what we're trying to communicate. If we're trying to communicate why we were taking policy actions, then enforcing a common interest rate path across all participants, such as an assumption of no change in interest rates or the interest rate path embedded in the futures market, may be appropriate. If our policy differs from the assumptions, we would show that our forecast with those assumptions is not consistent with our goals and use that communication to justify a different policy than what was used in the forecast. A potential problem is that it may be difficult to make clear at times why our forecast deviates substantially from what we expect. A second potential problem is that an interest rate path alone

may not be sufficient for describing policy over the next several years, given the prominence that balance sheet policies have played. If instead we are trying to communicate our best forecast for important economic variables, I would prefer to use optimal policy as we do now, even though we might disagree on how we get there. Of the two, my guess is the general public is primarily interested in our best forecast. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I also want to thank the staff for their excellent set of memos. They are fascinating and interesting, and I appreciate the discussion and insights they provided. I will structure my comments around the questions that were posed.

I view flexible inflation targeting, which combines an explicit commitment to a medium-run inflation objective with the flexibility to respond to shocks to support economic stability, as fully consistent with the dual mandate. The dual mandate objectives, price stability and maximum employment, I believe are generally complementary to one another. Price stability is both a goal and a means through which monetary policy can contribute to the employment objective. Thus, I see no fundamental inconsistency with us having an explicit numerical inflation objective and a dual mandate. Indeed, by having accurate inflation expectations, the explicit inflation objective gives us more flexibility to act to help mitigate the effects of shocks on real activity.

I am an enthusiastic supporter of monetary policy transparency in viewing communications with the public about our framework as a further useful step in clarifying our policy decisionmaking process. The exit statement that we developed earlier in the year was quite consistent with the earlier steps we have taken toward increased transparency. It would be very helpful if we tried to formulate a consensus statement on the Committee's monetary policy

framework. I suggest that the subcommittee on communications chaired by Governor Yellen be charged with the task of creating a first draft of such a principles document, which could then be circulated for review and comments. You will recall that the ad hoc committee on which I served earlier in the year drafted a document on an explicit numerical inflation objective within the context of the dual mandate, which we thought was broadly consistent with the description that the Chairman just gave on flexible inflation targeting. So some progress has already been made on this initiative, and I think we can build on that foundation and hopefully find a consensus.

As long as we are on communication, I would like to make another suggestion. It is no secret that I favor a more rules-based approach to policy as both a disciplining device on our own actions as well as an effective communication tool to the public and the markets. While we are a long way from agreeing on what an appropriate rule might be, I think we can make progress down this path by being clear regarding what the variables are that would appear in such a rule. We started down this path when we added to our statement in November 2009 that we considered inflation, inflation expectations, and resource utilization as key factors that would influence our policy decisions. That was a good start, but we didn't do much with it. Indeed, some might even perceive that the changes in forward guidance we made in August/September as being at odds with the information in those conditioning variables. What would be helpful is if we could structure a discussion in this Committee on how we might better articulate the arguments of such a policy function, and then attempt to describe our decisions on an ongoing basis in the context of how those variables evolve over time, and thus describing how our decisions evolve over time in a mutually consistent manner. We wouldn't have to pin down the precise reaction function, but we would want to couch our decisions in terms of how those key

policy variables evolve. This could prove to be a useful communication device going forward, and in fact, aid our own internal deliberations.

Let me turn now to questions 2 and 4. I am much less enthusiastic about the alternative frameworks—advanced forward guidance, price-level targeting, or nominal GDP targeting—as discussed in the staff memo. While these frameworks do have logic to them in the context of some types of models, the benefits of these strategies are highly speculative and very risky from my perspective.

Let me elaborate briefly. As I discussed in our last meeting, I do not support the idea of providing policy thresholds or triggers as in alternative A1. I am very supportive of taking a systematic approach to policymaking, and there is a long literature on the benefits of robust rules for policymaking. However, the triggers tell us little about the Committee’s reaction function. The proposed language doesn’t provide any information to help the public infer the path of interest rates after such triggers are met, or what policies will do if inflation moves somewhat above the threshold when the employment rate remains above its threshold. More justification for the specific thresholds, in fact, requires assumptions about loss functions of the Committee and an underlying policy rule, neither of which the Committee has discussed in depth.

In my view, the best way to do forward guidance at this point is to publish our policy paths in the SEP, and I very much hope that we will begin that process in January. Increased transparency about how FOMC participants expect policy to change in light of changes in economic conditions and the outlook can help the public form expectations about inflation and future policy. Providing information on FOMC participants’ appropriate policy paths, with their economic projections, emphasizes that policy is contingent on the evolution of economic conditions. I believe the results of the trial run of the projections, which we will discuss

tomorrow, will support this. It isn't a panacea. It isn't a solution. We still will have potential inconsistency problems, because we aren't revealing how to match up individual forecasts with particular policy variables. Still, I think in the name of transparency and information and coherence, it is the right direction to move.

The staff memo notes that, in principle, the best choice is to announce and commit to an optimal policy path under commitment. I understand why this looks desirable, but is such a policy choice actually feasible for the Committee? What is the commitment device? There will be great temptations to engage in time-inconsistent policies later on, as President Bullard emphasized in his memo. This underlies the extreme uncertainty associated with the projected benefits of such approaches that are outlined in the staff memo, since they very much depend on the credibility of this Committee's commitment to future actions. Even here I am putting aside the fact that optimal results are based on a particular loss function, as President Kocherlakota pointed out in his memo, and on a particular Taylor rule implementation. And as I just said, neither of those has been discussed at great length in this group.

Announcing the policy that we will follow in the future via forward guidance, without commitment to a time-consistent framework, is a weak commitment device at best. Indeed, some of the alternatives on the table at this meeting already suggest changing our forward guidance after just two meetings. In August, we indicated that we thought the outlook would warrant keeping the funds rate at zero until mid-2013. We reiterated that in September. Now, alternative A1 suggests that we extend that period to 2014, even though the outlook has actually improved somewhat since August and September—but not much. We don't seem to be acting with much commitment, even in our own language. It is even harder to believe that we have enough commitment or credibility to follow on a policy path when we discover that it may not be

optimal at some point in the future. And thus, if we deviate, we risk our credibility. Making commitments that we or the markets don't believe we can or will deliver on will not provide the intended benefits demonstrated in the memo that the staff suggests. And Michael Kiley made that point in his observations. Without the commitment and the credibility, we don't get the benefits.

Similarly, for both nominal GDP targeting and price-level targeting, the question is, do we have enough credibility and commitment to deliver on it? I, frankly, am very dubious that we would behave in a time-consistent manner with price-level targeting. Do we really believe that we would drive inflation down to 1 percent again to make up for overshooting in order to hit our price-level path? I don't believe we would. I don't think the public will believe it either. Some might, therefore, argue, although I wouldn't, that what we need to do then is commit to a higher level of inflation—4 percent or some higher number—so that we don't have to go too low to offset our overshooting. Well, that is certainly an interesting argument. I don't subscribe to it, but that would be an important conversation to have in weighing the costs and benefits of a commitment to a permanently higher inflation rate. But that discussion needs to weigh the long-term costs and benefits and not just exploit short-term expediencies driven by the problems at the zero lower bound. That would be a much more long-run discussion of trading off. The question I think we must ask ourselves, then, is, what framework gives us the best chance of meeting the level of commitment that is assumed in that chosen framework? I think that flexible inflation targeting is likely to be the best that we can deliver on. But there are other potential problems with some of these frameworks. As I asked the staff, both frameworks depend on some initial condition, and the degree of undershooting and the target we have depend critically on where that starting point occurs.

Michael also discussed the issue of measurement error as a concern, particularly with nominal GDP targeting. The level formulation—that is, targeting a particular level of nominal GDP—is worse, in my view, than nominal GDP growth targeting. If we underestimate or overestimate the appropriate level of potential output and misestimate the so-called gap that needs to be closed, we could make serious policy errors, and those would accumulate over time. Even a growth-rate target relies on some estimate of potential growth, which is subject to significant measurement error and changes over time. Again, if we overestimate potential growth, a nominal GDP growth target would lead us astray into being too accommodative, and if we underestimate potential growth, we would be too tight. To avoid this, we still need to focus on what is happening to inflation. To me, there seems to be little gain over a flexible inflation targeting regime. It also means that when our estimate of potential growth changes, as the staff does, we would need to change our target. This poses serious communications problems at best and risks credibility and the benefit of any commitment derived from specifying that framework.

Finally, it seems to me that switching to a new framework at this time could easily be viewed by some as an opportunistic way to inflate the economy. In an inflation environment where fiscal deficits loom large and well-respected economists are advocating inflating our way out of the problems, changing our framework now risks appearing opportunistic, and that will undermine our credibility over the long term and undermine the credibility we would need to actually deliver on the commitments that those frameworks would call for. Undermining our commitment by appearing opportunistic, by changing our framework, could be undermining the very benefits that we seek to have. Thus, I would strongly prefer that we concentrate on better explaining and strengthening our flexible inflation targeting framework that the Committee has been working toward for the past two decades. This includes an explicit numerical objective,

explaining why it is consistent with the dual mandate, and publishing our policy paths with the SEP. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I am going to organize my remarks around the questions. The first one is about flexible inflation targeting. In the question, it says “the central bank pursues an explicit inflation objective, maintains the flexibility to stabilize economic activity, and seeks to communicate forecasts and policy plans as clearly as possible.” When you define it that way, flexible inflation targeting is a big tent. The main reason we are not in the tent right now is that we don’t have an explicit inflation objective. It is an implicit one, and that could be easily remedied. In fact, I would be in favor of doing that. You asked about that, Mr. Chairman. I have long been on record as favoring adopting a numerical objective and communicating forecasts and policy plans as clearly as possible. When that is constructive, we should do that. I am in favor of that as well. I am willing to support describing our policy framework in terms of flexible inflation targeting. Now, under that definition, it is an awfully big tent. I am sure that some of us worry that it would include the possibility of taking stabilizing economic activity too far. I’m sure some of us worry that it would not take stabilizing economic activity far enough. That is, by way of supporting President Evans’s observations, about the reality that we have different visions around here. But when you are evaluating these frameworks, I think it is legitimate to evaluate them from the point of view of what they do for our credibility, and in particular, the credibility of our commitment to price stability. The same thing is true with these frameworks. My general observation is that they could cause us trouble if they are viewed as opportunistic maneuvers to give us the license to raise inflation more. It is going to be critical to formulate things very carefully.

The second question asks about the staff's memo on alternative frameworks. With all due respect to the obviously huge amount of work and thought that went into the staff's memo, for me, it doesn't provide the kind of quantitative work that I would want to see if we are evaluating a change in framework. I think a framework is something we adopt once and for all, a relatively permanent change in how we approach policy. That means we are going to use it to guide policymaking over the course of many years and several business cycles, hopefully small ones, but several business cycles ahead.

What kind of analysis would you want there? You would want to know how the strategy is going to do in a range of circumstances in the future. What the staff did was give us a quantitative analysis of the first few years of the transition dynamics from where we are now to our new regime, starting from where we are today. There is some mention of how average inflation is higher in the alternative frameworks, but there isn't any quantitative information about the performance over a complete business cycle or how it does on average, the unconditional moments of performance under different frameworks. I think we ought to ask about the variability of the average level over the long haul of inflation, output, consumption, household welfare, things like that, if we are going to switch policies. That perspective could well lead to a different ranking of alternative frameworks than one based purely on the short-run transition dynamics—a fairly general point. I am not asking for anything unusual. This is the standard way we have in economics of evaluating alternative policy rules, assessing their average behavior over time.

I mentioned earlier this question about how you calculate optimal policy rules. The staff has invariably had one argument of a loss function: the deviation of output or unemployment from a smooth statistical trend that represents the natural rate, a concept like NAIRU. We have

talked about this many times. President Bullard had a very cogent memo on this several months ago. We know that is wrong if there are shocks to the economy. And it is wrong in the sense that in the standard models we have, you have got household welfare right there. You can derive what the right loss function is for the policymaker to use. When you do that, you don't get anything like NAIRU going into the loss function. You evaluate unemployment and output against something that varies with the shocks to the economy. The shocks affect what is feasible and what is desirable in the short run, and it is the natural and intuitive thing that you would expect to get. Monetary policy, if you do it right in those models, maximizes household welfare over time, and that translates into attempting to stabilize activity around the level that would be most desirable, taking into account all of the shocks we know have hit the economy. Sure, models differ, implementing this can give very different results, but I am struck by the absence of u^* , even in the DSGE memos. The first thing I want to know about every one of those models is: What is u^* in the current quarter? We don't get that out of the DSGE models, and that ought to be a standard part of the reporting from those frameworks.

The third comment on the second question is that, for me, the practical difficulties of implementing any of these alternative frameworks are prohibitive. Commitments are simple in models. They are very easy to achieve. Even complicated and very conditional commitment is something we all recognize. They are essentially completely credible by assumption, no matter how complicated. Real life—as we have learned doing policy over the years—is very complicated. The process of communicating what we intend and getting enough of the people understanding it and acting accordingly can be time-consuming and fraught with risks, given the inflation fight of the early '80s, an obvious example, and going from the '80s to the '90s, another example, where it took some time to get inflation down from about 5 percent to 2 percent. The

public's inflation expectations seem pretty well anchored where they are now around 2 percent. I'm not sure it would be easy to dial those up and down on a year-to-year basis. I think that is what is at stake here.

Changing inflation expectations, even if we could do that, just doing it once sets a precedent that is going to color interpretation of our commitments for decades, because we will have set the precedent that, yes, we say we want the inflation rate to be 2 percent. "They did that back in the '90s and the '00s, but then they changed it on us. They raised their target to 2½ for a year or two, and so they could do that again." Forever after, there is going to be a little extra variability in inflation expectations, a little less precision on the public's part in their understanding, and a little less commitment and credibility on our part, just by setting the precedent, even if we could. To be fair, the staff's memo acknowledges these difficulties, and these are all in the realm of the kind of learning that has to go on when you make a choice to adopt a new framework—you have to go down the path of convincing people you've got a new framework and getting them on board with acting accordingly.

The second question also asks about numerical triggers for inflation or unemployment. President Evans was passionate about that. I said at the last meeting I think they are a bad idea. I don't think it is going to be easy to avoid having them translated for us by the media to the public as the Fed's inflation and employment targets. It is hard for me to see how we are going to avoid the use of the word "target" in the media relative to these things. If the issue is convincing people that we are willing to tolerate inflation of around 3 percent, inflation averaged 3 percent for four years between '04 and '07. We have done a great job of demonstrating our willingness to tolerate 3 percent inflation. We had 4 percent inflation for half a year earlier this

year. I don't think it's that much of a problem for us, that people don't think we are going to let headline inflation go above 2 percent.

The third question is about price-level or nominal income targeting—a lot of the same things apply. Adopting either of these proposals would be relatively complicated to explain to the kind of people that attend our speeches. It may be easy for a Goldman Sachs economist to understand, but I think about the people I talk to—it just seems hard. I often run these things by my “brother-in-law” test. You know, my brother-in-law sitting in front of his PC with the retirement planning software, and it prompts him for the inflation rate he would like to assume for the next 10 or 15 years. I should warn you, I actually don't talk to him about this—that would be a violation of our communications policy. [Laughter] But I try to imagine—it is pretty easy with this guy—and nominal income targeting doesn't fare very well. To put in an assumption for the inflation rate, he needs to forecast real GDP, and he is going to call me. A framework where he has to call me flunks the test. [Laughter]

MR. FISHER. How smart is your brother-in-law?

MR. LACKER. He's a doctor. I won't say anything more. [Laughter]

Price path targeting does a bit better, except for the times when the price level is well below the target path, and then you'd have to do logarithms. Again, he would call me. [Laughter] I think it would be really hard for him to figure out what number to put in that software, and that is a test for simplicity and clarity that I am attracted to.

The fourth question: What should we do? I found the document we drafted earlier this year compelling. It explains the relationship between unemployment and inflation—as best we can forge a consensus on it within this group—and does a very good job of embodying that consensus about the relationship. Recasting that document as an explanation of the Federal

Reserve's flexible inflation-targeting framework seems like an ideal approach. Using that as a vehicle for slipping into the public domain our commitment to a numerical inflation objective seems to me like the best approach going forward. Let me leave it at that. Thank you.

CHAIRMAN BERNANKE. You could tell your brother-in-law what his revenue is going to be in his practice under nominal GDP targeting. [Laughter]

There actually was a good complementarity between your remarks and President Evans's, and you talked about the uncertainty of the NAIRU over time.

MR. LACKER. Yes.

CHAIRMAN BERNANKE. President Evans's approach, if I understood it, was to try to find something that was robust to uncertainty over that particular—

MR. LACKER. Yes, I think robustness has a lot to recommend it.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I, too, would like to compliment the staff on the fine work they did in advance of the meeting. I see this discussion of alternative frameworks—and I hope I am not getting ahead of the discussion—as boiling down to two questions. The first is: Should the Committee shore up its existing framework to be more effective? To that, I would answer yes. The second question is: In light of the extraordinary circumstances of the economy, should the Committee shake things up, go beyond the existing framework, and go in another direction? To that question, at the moment at least, I would answer no. I don't think the cost-benefit or the risk-reward tradeoffs justify such a move. I do see that clarification and reaffirmation of the Committee's basic framework and strategy, and an explicit inflation target, could serve to make the existing and future policy elements more effective. It will serve to reassure the public that there is coherence to the Committee's approach

and remove some uncertainty at a time when uncertainty is a major negative factor weighing on the economy.

Now let me turn to the questions posed by the staff, and I will paraphrase these questions. Is a flexible inflation-targeting framework consistent with the dual mandate? Yes, I think flexible inflation targeting, with flexibility around the price-stability mandate, allows for balancing the two objectives in the short term when required while still encompassing the belief that the two mandates are complementary over the longer term.

Should we enunciate it as our working framework, perhaps in a way similar to the exit strategy statement? I think it would be constructive to clarify our working framework in a general sense, and the method used in communication of the exit strategy seems like a reasonable approach. Also, the consensus-building process that preceded the addendum to the minutes I thought was quite effective. I also think it would be useful to provide more specifics about certain operational definitions relating to an inflation objective. We might put more definition around what is meant by short term, medium term, and long term. For example, we might state that over a long-term horizon of five years or longer, the Committee believes an average year-over-year growth rate of 2 percent, as measured by the overall PCE index, is consistent with the price-stability mandate.

We might then state that over a medium-term horizon of three to five years, the Committee seeks to maintain an average year-over-year growth and overall inflation in a range—and this is for example only—of 1 to 3 percent. This range reflects the intent to keep overall inflation reasonably close to the long-term target while maintaining the flexibility to respond to economic conditions and shocks as required by the other half of the dual mandate. In the short run—a period of up to three years, and a horizon captured by the Committee’s SEP—the

Committee, we might say, aims to closely monitor underlying inflation trends and inflation expectations. In such a scheme, there is a cascading from explicit long-term objective to performance within a range in the medium term to monitoring underlying inflation expectations in the short term.

Should the Committee announce conditional commitments? If so, how to communicate them? It is difficult to argue against the principle of credible commitment to an optimal policy path. That said, I view an explicit threshold for the unemployment rate as potentially problematic. Our understanding of participation trends, the equilibrium rate of unemployment, the lag in unemployment relative to GDP growth, and any number of other recent labor market developments suggest to me that an explicit threshold for unemployment is risky. I am also concerned about combining a real-time threshold for unemployment with an inflation threshold based on forecast, because the realization of an unemployment rate result is immediately verifiable, while an inflation forecast is inherently speculative. I am concerned that the public would interpret such conditionality as a de facto subordination of the inflation objective to an unemployment threshold. I am more comfortable with the communication method used in paragraph 4' in this meeting's proposals, which treats the interest rate, inflation, and unemployment rate conditionality symmetrically—an approach indicating the Committee's expectations of conditions that will prevail prior to commencing exit. If the Committee decides to be more activist, I think we need a nominal anchor to reassure the public that we have not lost sight of, and are not jettisoning, the inflation or price-stability objective. The public wants to know how much tolerance we will admit around the 2 percent inflation objective.

What about price-level targeting or nominal income targeting? Although both of these options have merit, both entail serious communications challenges, as the staff memos have

pointed out. My concern is that a shift to either option, but particularly nominal income targeting, would be viewed as a significant change of the Committee's approach. This might introduce more uncertainty about monetary policy and its intent at a time when we should be trying to reduce uncertainty.

Finally, a more general question: What steps should the Committee take to provide more information to the public about the expected course of policy? I continue to favor inclusion of implied policy paths in the quarterly SEPs. If the Committee decides to move in the direction of explicit employment and inflation thresholds in the statement, then a more complete rethinking of the SEPs seems necessary. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I apologize if I'm not completely coherent here. I've been enjoying some of the fruits of the Cardinal victory. [Laughter]

As you know, I laid out a number of comments on the Erceg, Kiley, and Lopez-Salido memo, which was excellent, in my communication to the FOMC on October 27. I will review and amplify some of those comments here.

In general, I think we're moving in the right direction in giving serious consideration to these approaches to policy and to the DSGE models from which they are derived. However, some of the difficulties seem to me to be very vexing and could lead to very different outcomes from those envisioned in the memo. As the authors emphasize, policy moves like the ones being described here put credibility front and center. These are pure expectations plays in which the Committee promises to behave differently not today but several years in the future. If the private sector believes this promise, a boom occurs today. However, the future Committee will have clear incentives to renege on the promise since at that point, according to the model, all will be

going well. Both output and inflation will be relatively high. Today's private sector seeing this will not believe the initial promise. As a consequence nothing happens at all. The policy move falls flat. This is actually my main concern. You go through a lot of gyrations here; you make the announcement and nothing happens at all. Could there be partial credibility for the promise? The memo argues that perhaps if you made the promise, the private sector will put a 50–50 chance on it coming true. I don't think this is the right way to think about this.

The Committee has repeatedly reassured financial markets over several decades that interest rates will be raised at an appropriate time in order to keep inflation low and stable. You'd be coming into a couple decades of that environment and saying that you are now departing from that policy, rather opportunistically as has been emphasized here, and you are not doing anything different today, but you will do something different five years in the future or several years in the future. This would surely not be believed, initially. Credibility would have to be earned through action. It would be very similar to Chairman Volcker coming in when inflation is running very high and deciding to change the policy framework. Initially, he is not believed. He has to earn credibility for that change in policy. The same thing would have to happen here. Credibility would have to be earned. The way the memo does it, which just assumes you could make a credible announcement and get something to happen today, is a little farfetched, but possibly you could earn credibility.

Now, how would you be able to earn credibility? I think we have pretty good ideas about how this would work. The private sector initially holds a belief that the Committee will never deviate from its implicit Taylor-type rule. Let's just suppose that's a good description of the behavior of the Committee and the belief of the private sector. The private sector will begin to adjust its perception of the Committee when the Committee takes actions that deviate from the

prescriptions of that rule. It's at that point that they'll start to believe that maybe something different is going on with the Committee. That change occurs when the Taylor-type rules suggest raising the policy rate, but the Committee doesn't raise the rate and instead leaves the rate near zero. I could imagine some scenario in the future where we're looking at the Tealbook and there's a whole bunch of Taylor rules in there. They're all saying we're supposed to be at a higher interest rate, but the Committee stays at zero. At that point you would get a boom and a change in private-sector behavior, because they would at that point learn that the Committee actually had changed behavior from what was previously believed to be dominating the thinking. But unfortunately, that sort of event in the scenario we're talking about here only occurs several years in the future when Taylor rules are saying we're supposed to be raising rates and we're not raising rates. The boom occurs, but only several years in the future—not today. In short, learning about the policy by the private sector would dramatically alter the timing of the effects. In some ways it defeats the purpose of the announcement.

In part because of these considerations, I've repeatedly favored balance sheet policies as a way to ease policy by creating expectations of higher inflation. With balance sheet policies, clear action is being taken today, which in my view, can influence and has influenced private-sector expectations of Committee behavior.

I agree with President Evans. The question is how to get the expected inflation that the Committee so desires higher. The question is how to make that happen. One way would be to make this promise out there in the future. I'm arguing that that would fall flat. I'm saying that the additional commitment strategy wouldn't be effective, and therefore, you're probably better off with balance sheet policy. That's as much as I have to say on time consistency.

As you all know, I remain concerned that we are not putting enough weight on the possibility that committing to near zero rates for a very long time will simply produce zero rates for decades. The memo contemplates very long times at a policy rate of zero. It really begins to sound like we would be creating the worst outcome of all and the importing of the Japanese situation to the U.S. We should be thinking about the tradeoff between possibly creating a replication of the Japanese situation in the U.S. versus the relatively minor and uncertain benefits of promising longer and longer times at a policy rate of zero in the hopes that that would raise inflation expectations today. In short, and there is a literature on this, it's going to be Schmitt-Grohé and Uribe, not Eggertson–Woodford that's the relevant framework here. Eggertson–Woodford does not deal effectively with this issue. According to Benhabib et al., commitment to low nominal interest rates actually creates the problem.

As I discuss in my memo, I did not find the results on price-level targeting very convincing. This should be close to the fully optimal policy in models of this type. Partly I agree, based on the earlier comment, that this is because this is a form of strict price-level targeting, which isn't what I think of as typically discussed in the literature. The whole idea behind price-level targeting is that it changes the policymaker objective function in a way that helps substitute for the missing ability to commit what Peter Howitt once called the “Zen archer” approach to policy. I'm not quite sure what that meant, but it sounded neat. [Laughter] The policymaker maximizes an objective that's a little bit different from the one that the household would maximize in order to get part of the commitment that the household doesn't have, and so you get a little bit better policy through that.

The notion that nominal income targeting respects the dual mandate while price-level targeting does not seems an odd way to describe the state of affairs to me. The literature is

talking about models with micro foundations. Households live in the model. They have utility functions defined over consumption and labor supply. A fully optimal policy maximizes the utility of these households. As President Lacker was saying, you've got the households there—ask them what they want. Ask them what the optimal policy is. Why come in with other objectives that we're imposing from the outside unless you don't believe your model, in which case I say go build your model the way you want to build it and get to a different objective. We cannot do any better than this, maximizing the utility of the households in the model, and household labor supply is very much part of the story. So it is very much about maximum employment if you want to talk in those terms.

For both nominal income targeting and price-level targeting, the starting point for drawing the baseline path is important, as several people have stressed. Many of us have described the past decade as a housing bubble that burst. I think it is inappropriate to project that bubble out into the indefinite future and then claim that it's up to monetary policy to reestablish the unsustainable path the economy was once on. Fundamental potential output growth was probably somewhat lower than it appears during the past decade. Embracing this view would give a more realistic description of the likely outcomes the FOMC would be able to achieve through an appropriate policy.

So as a bottom line, let me give several brief answers to the questions that were listed on the exam. Flexible inflation targeting, yes, I'm very much in favor of it. I think we should name an inflation target to get started. Lots of countries have done this. We're a laggard on this issue, and we should go ahead and do that. I would not give the extreme interpretations that President Rosengren alluded to earlier where you put just a minimal weight. You should put an appropriate weight on the real side of the economy when you do this.

The thresholds are intriguing, but I don't see them popping out as an optimal policy response in any of the models I'm aware of. I'd be willing to look at ones where they do, and I've argued in previous memos that unemployment as a threshold is problematic. It has behaved badly as a variable in the G-7 over the past couple of decades and especially in Europe. It wanders around, and we don't have good theories of why that happened. We know that other policies affect the level of unemployment—other labor market policies. I'm not against thinking about unemployment. I'm against tying monetary policy explicitly, numerically to the level of the unemployment rate because that would possibly throw monetary policy off for a very long time if that rate doesn't behave in the nice, cyclical fashion that we think that it should and instead wanders off into uncharted territory.

On price-level targeting or nominal income targeting, I'd be worried that if you went this way, not too much would happen. It would fall flat, and that's why I'm advocating a balance sheet policy instead. That being said, they're actually not too different from Taylor-type policy rules. In some ways it's hard to see why you get much of an announcement effect at all because it would be hard for the private sector to distinguish between existing policy and the new policy. But my main concern is that if you try to make these commitments out there in the future, it doesn't look credible to me, and it's going to fall flat. I would do balance sheet policy instead. You're taking clear actions today that markets understand very well.

On the issue of should we publish more information, I would again advocate that we're struggling too much with trying to condense a lot of information about our views about the U.S. economy into terse statements that just have a few words or a few numbers. I think the way to get around that is to go ahead and publish the Tealbook or some version of the Tealbook that you thought was appropriate, perhaps a quarterly report on the state of the U.S. economy. If you did

it that way, you could have a long document that could put in lots of information and contain many of the subtleties. You could comment on a lot of the issues that are facing the economy in a way that you can't in shorter statements. I'd be an advocate of thinking about going in that direction, and that will clear up many of our issues about communication. Other countries have done this, and I think it would be a sensible way to go. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you.

MR. EVANS. Could I ask a clarifying question?

CHAIRMAN BERNANKE. Sure.

MR. EVANS. President Bullard, you often had mentioned the Benhabib–Schmitt-Grohé paper—and I have to admit that the half-life of my understanding of those analyses is usually less than a full meeting length when I ask my staff about that—but I thought that that relied on a Taylor-rule monetary policy, doesn't it ?

MR. BULLARD. The problem in the model is that you're fully committed to the Taylor-type policy rules.

MR. EVANS. But we've been running balance sheet policies and we're also at the zero lower bound, so obviously we're still running that type of policy. Isn't that the kind of thing that would tend to break that equilibrium?

MR. BULLARD. Well, I guess in the memos there is a—

MR. EVANS. I mean, usually there's some threshold.

MR. BULLARD. —certain type of policy rule. If that policy rule is going to tell you that you'll never move off zero until certain conditions are met, then the public starts to think, okay, you're never going to meet those conditions, so you're going to stay at zero. One of the conditions is that inflation is near target, but because of the Fisher relation, inflation expectations

are low, and so you're just permanently below the target. That's what happened in Japan, where they've had mild deflation for 15 years.

CHAIRMAN BERNANKE. Let me inject here. I don't want to get into a deep discussion of this.

MR. EVANS. I didn't want to get into too much.

CHAIRMAN BERNANKE. I think, President Bullard, that some of us are confused about the dynamics and the inflation-expectation formation process that supports that equilibrium. In other words, it's obviously an equilibrium, but is it one that would naturally occur? Rather than ask you to answer that here, maybe you could help us with some comments.

MR. BULLARD. I can give you a stock answer in one sentence.

CHAIRMAN BERNANKE. Okay.

MR. BULLARD. It's fair to say—I wrote it down in my model—that the one equilibrium is the one that's the natural one to focus on, but you've got a country that's stuck at the other equilibrium. Your theory has to tell you why you're going to be at one equilibrium versus the other.

CHAIRMAN BERNANKE. Maybe because policy wasn't easy enough in the first place, and they got caught.

MS. YELLEN. Exactly.

MR. BULLARD. Well, they were at zero. We've been at zero for a long time.

CHAIRMAN BERNANKE. Okay. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I'll echo the many thanks that have gone to the staff for the memos, particularly the Erceg et al. memo that formed the basis of this conversation, but I see I'm going to be drawing on the other memos as well. Very

impressive work over a very short period of time. With that said, I think there is room for considerably more analysis before we decide on a framework that is designed to govern Federal Reserve actions for the next 8 to 10 years and possibly beyond. Any monetary policy rule has two linked components, which are the initial level of accommodation it is providing and then a description of how that accommodation changes over time and responds to changes in conditions.

Now, the initial level of accommodation that's being provided by a given rule is a little arbitrary. Several people have already mentioned this, but I'll chime in as well. If we target a price-level path that began in the fourth quarter of 2008, we'll get a different amount of initial accommodation than if we target a price-level path that begins in the fourth quarter of 2007. I don't think of the initial amount of accommodation as really being a definitive property of price-level targeting or any rule. What really is defining a rule is how that accommodation varies in response to how conditions change.

I'm going to separate two questions in what I'm going to say before I go on. I'll talk at some length about these two questions before I go on to the four questions that were posed by the staff. The first question I'm going to talk about is, what is the current level of accommodation that we want to provide? And then, second, what kind of rule should govern how that accommodation varies in response to changes in conditions? It's very important to do this separation because there are several Committee members who feel very strongly that the current level of accommodation is unduly low, and the state of economy is such that this probably needs to be corrected rapidly. It would be untoward to address this perceived need for an urgent increase in our current level of accommodation by changing our framework. Rather, we should be able to figure out how to augment the current level accommodation while retaining the ability

to be appropriately deliberate in our decisionmaking about a framework designed to govern the next decade of monetary policy. I'm going to try to sketch one way to answer these two separate questions—current level of accommodation and then evolution—and then I'll come back to the four questions, Mr. Chairman, at the end.

How might we choose an appropriate level of current accommodation? The first thing we need to do is decide on a loss function, and it's our job to provide guidance to staff on this important issue, that is, us as principals, as policymakers around the Committee. In a memo I circulated last week, I talked about how we might go about structuring this conversation. With that loss function in hand, we can compute optimal time paths for asset holdings and short-term interest rates under the staff's modal forecast. Now, note that in the policy problems solved on page 3 of the Tealbook, Book B—there are all these nice pictures about what the optimal policy looks like—the staff fixes what's going on with asset purchases. They don't optimize over asset purchases. Those are just treated as given, and they optimize over the path of the fed funds rate.

What I want to do is start to think about optimizing where the paths include both tools. This might sound like a complicated problem, but we can immediately translate into a simpler one. The Reifschneider et al. memo provides the way to do that. It builds on earlier research by Fed System economists to map that time path of Fed asset holdings into a time path of downward adjustments to the fed funds rate.

Choosing a path of asset holdings and a path of short-term interest rates is similar to choosing a path of LSAP-adjusted path of interest rates, and this is a very important point. If there were no constraints in the size of the balance sheet, then this LSAP-adjusted path of interest rates could become arbitrarily negative. If we're willing to have as big a balance sheet as we want, then we can make those LSAP-adjusted interest rates as low as we want. The policy

problem then becomes equivalent to the unconstrained optimal problem on page 3 of Tealbook, Book B. It's as good as we can do. There is no tension in this problem in terms of the commitment problems that the staff was pointing to. That kind of reverse time-consistency problem does not emerge there. There's no commitment versus discretion issue if we're solving that unconstrained problem.

If we were to go in that direction, though, the balance sheet moves are fairly exaggerated. If you look at the unconstrained optimal policy path on page 3, Tealbook, Book B, it suggests the appropriate path of LSAP-adjusted interest rates involves cutting them in the near term by 300 basis points. The FOMC could achieve this cut by announcing its intention to buy something like \$3 trillion of longer-term assets. Both of these numbers are quite rough. They'd have to be filled in with more work. This solution hinges on using a loss function that puts equal weight on deviations; loss functions that I've suggested in my memo would presumably imply a smaller cut in the LSAP-adjusted rate.

This is all about if you're willing to do \$3 trillion of purchases. If you're not willing to do that, that means there are costs or constraints associated with balance sheet policies that aren't incorporated into the Reifschneider et al. memo and not really formally incorporated into the staff's technical analysis of our policies. For example, the Committee might decide it never wants to have a balance sheet larger than \$3 trillion. This constraint will translate into a negative lower bound in the LSAP-adjusted interest rate, and then you get to solve a constrained optimal policy problem on LSAP-adjusted interest rates with this lower bound.

How would this solution work? You can guess the solution. It's going to look like the balance sheet being expanded up to its maximal level and then the short-term interest rate being kept equal to zero for some period of time. I would see the Committee implementing this

appropriate level of current accommodation by buying more assets and then announcing an anticipated duration for the zero interest rate policy.

What I'm trying to sketch here is that we can follow a systematic way to identify an appropriate current level of accommodation without a major change in our policy framework. Without constraints on the balance sheet, then we can make appropriate adjustments to the current level of accommodation through asset purchases alone. With constraints on the size of the balance sheet, that's what leads us into the need for making these long-term stays at the zero lower bound. That's all about choosing the current level of accommodation.

There's a separate but certainly linked question of how that accommodation should change over time in response to changes in the state of the economy. I think it's a good thing for us to have a determination of how we want that accommodation to change over time. Given that the zero lower bound is binding, it may well involve making a commitment. One of the reasons you're trying to build a rule—as people talk about the Taylor rule—is to try to buy into commitment. One of the nice things about the rules that the staff sketches is that it gives us a way to try to buy into the necessary commitment to have those rules be implemented down the road.

A good rule should satisfy four related criteria. One is consistency—its prescribed evolution of accommodation under the staff's modal forecast. It should provide a good approximation to the solution to the optimal control problems that I've discussed above. You want your rule to match up with what you want to be doing, given what you expect to happen. I think that's a relatively easy extension to what the staff has done.

What's a little harder, and this gets to some of the stuff that President Lacker was talking about, is that we need to have some notion of expected loss. There's a good start on this in the

Erceg et al. memo on scenario analysis, but really we need a full Monte Carlo simulation under the assumption the Committee is using that rule. We want this notion of the distribution of outcomes—how likely it is we’re going to go above 2 percent, for how long, those kinds of questions—and the expected loss under whatever our loss function is.

Third, we really need to think about the robustness of a given rule. What’s the worst-case macroeconomic scenario for a given rule? How bad are things under that worst-case scenario? And then think about comparing rules under that basis. Then, credibility matters. A proposed rule may well imply that some macroeconomic outcomes will lead to high rates of inflation coexisting with low rates of unemployment for several years at a time. Is such a rule truly credible or will future Committees simply abandon the rule at that point? Rules are rhetorical devices to try to convince future Committees to do things that are against their own interest, and so we want to see how much they have to buy into to do that.

The memo that we have is a great starting point for these kinds of assessments of consistency, expected loss, robustness, and credibility, but there’s a lot more to be done. That’s why I think it’s very important to separate these two issues, Mr. Chairman, of what we want to do today in terms of providing an appropriate level of accommodation, and what kind of rule we want to adopt for the evolution of that accommodation.

Let me try to answer the four questions. Flexible inflation targeting, it’s a big tent. It’s pretty hard to see how anyone could say no to it, but I will. [Laughter] I’m certainly on board with that description of our operating framework, but the word “flexible” is going to require some definition and some clarity. President Lockhart offered some suggestions, but President Lockhart’s words (I didn’t catch everything he said, unfortunately) for example, talking about

2 percent averaging over five years—we explicitly don't mean that. We explicitly want the ability not to have that.

We have to be very clear. It probably would be useful to be clear among ourselves, first of all, about what we mean. What I've been talking about over the past couple of meetings is the need for us to be clear about how much inflation we're willing to tolerate and over what time horizon. Some of the staff simulations suggest we're willing to tolerate up to 3 percent for several years at a time. We have to be clear among ourselves and with the public that that's what our policies include.

President Evans made a good point about risk management and about his proposed triggers. I thought the implied dialogue between President Evans and President Rosengren is really interesting about whether these triggers should be evolving over time or fixed in time. Those are the kinds of things that it would be useful to get sorted out. We should be thinking about accommodation right now as an anticipation of time we are spending at the zero lower bound, plus the size of the balance sheet. Those are our two tools to adjust.

Then there's an issue of a rule about how those things would evolve over time in response to changes in conditions, and there's more work to be done on that. There's a fourth question, but I think I already answered it by answering the first question.

Thank you, Mr. Chairman, and I appreciate people's patience in listening to me for so long, but like several others have mentioned, this is great stuff, and I'm very excited to be able to talk about it.

CHAIRMAN BERNANKE. Okay. Thank you very much. I understand lunch is ready. I propose that we take half an hour and begin again at 1:15—with trays, if necessary. Thank you.

[Lunch recess]

CHAIRMAN BERNANKE. Thank you very much for your promptness. Let's recommence with our discussion of the frameworks, and I will turn to President George.

MS. GEORGE. Thank you, Mr. Chairman. I appreciate the Board staff's analysis of these alternative policy frameworks, as others have noted. Looking at ways to strengthen our framework and strategies for the longer term certainly is worthwhile, given the importance of our credibility to effective monetary policy.

I do support efforts that strive to make monetary policy transparent, credible, and clearly communicated. But in reading the alternatives and how they are interpreted in the Tealbook, transparency appears to be equated to additional stimulus when, in fact, the two strike me as separate concepts. In my view, adopting new strategies to achieve additional stimulus in the near term is unlikely to accelerate the broad and necessary process of deleveraging and rebalancing now under way in the economy without risking the low and stable inflation we have worked to achieve, sometimes at great cost, over the past 30 years.

Looking ahead to the long-term application of these alternative frameworks, I also see potential practical problems with their implementation, even though they appear to work well in simulations. In particular, the communication challenges associated with changing our policy framework now would be tremendous, raising the possibility of increasing rather than decreasing uncertainty in what are already uncertain times.

Let me turn briefly to my comments on the specific questions raised. While the general concept of flexible inflation targeting seems innocuous, there are a number of definitional issues I find that are unresolved. How would the explicit inflation objective be defined? What inflation rate, what horizon, what numerical value? And specifying an inflation target also raises the

question of how the Committee would define “maximum employment”—the other component of the dual mandate.

Second, the concept of optimal policy under commitment depends on a model, which immediately leads to questions about how different models reflect reality, and thus, produce different optimal policies. Some have noted how different preferences can contribute as well. For instance, I differ from the authors and would argue that inflation of 2½ percent over several years is more costly than inflation of 1½ percent, because of the risk of longer-term inflation expectations becoming unhinged. Commitment is elusive, because we cannot bind ourselves, or our successors, to carry through on any forward guidance we provide today. As economic circumstances change, the temptation to deviate in the future from today’s promises will be significant.

Regarding strategies for price-level or nominal income targeting, I am concerned with basing policy decisions on only one or two variables. The financial crisis reminded us that policy decisions should be based on a range of data that can inform us about the state of the economy and the outlook. While our primary objectives are inflation and employment, financial stability is both important and consistent with our long-run mandate. A narrower focus on inflation and employment in the medium term could lead to a costly miss of our financial stability objective in the longer term.

Finally, I would be interested in exploring the idea of augmenting the SEP to include more information about our expected policy paths. Adding such information to the SEP has the potential to enhance transparency and provide more flexibility, in my view, than incorporating specific funds rate projections associated with unemployment and inflation triggers. Since the

public is beginning to be more familiar with the SEP, the communications challenges may be easier to overcome. Thank you.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I also want to thank the staff for the excellent work they did on this important issue. I am going to focus my comments on the questions.

My answer to all parts of the first question is yes. I view flexible inflation targeting as consistent with our dual mandate, and I think that we should enunciate this framework. As I have indicated in past meetings, I think that adopting an explicit numerical objective for inflation would enhance our accountability, our transparency, and our communications. We can and should go farther than simply saying the Committee seeks price stability, and we should define numerically what price stability means.

I would also be comfortable with indicating that the Committee estimates an unemployment rate of, say, around 6 percent to be consistent with maximum employment, as long as we make it clear that monetary policy does not determine what rate of unemployment is consistent with full employment. It would be helpful to try to formulate a consensus statement on the Committee's monetary policy framework as we did with our exit strategy.

Moving to the second set of questions, broadly, I see some form of conditional commitment as having value for improving our communications by providing more information on the policy reaction function. In principle, I think we could help the public to better understand how the Committee is likely to respond by using the SEP to provide the economic conditions underlying our forward guidance.

Paragraph 4' in policy alternative A1 strikes me as presenting an approach that could be helpful. I think it would be more difficult to go further, as paragraph 4" does, to set policy thresholds, because simple thresholds cannot capture the range of factors we will want to consider in determining the future course of policy.

Moving to question 3, of the options considered, I agree with the Board staff assessment that targeting the level of nominal income appears to work well in some challenging scenarios. But I would reserve a change in our operating procedure for an extreme event, such as a significant risk of deflation or another recession. Should we face such prospects, I think that nominal income targeting would be our best option for providing significantly more policy accommodation while making clear our commitment to both components of our dual mandate.

Finally, in response to question 4, as I have already suggested with my responses to the other questions, to improve our communication and effectiveness of policy, I would favor enunciating our flexible inflation-targeting framework and adopting an explicit numerical objective for inflation. I would also favor providing forward guidance more clearly linked to our SEP. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. Successful communication of our policy framework is especially important as we navigate uncharted waters of unconventional policies. A critical goal of our communication, to me, is to maintain well-anchored inflation expectations. During the past few years, the anchoring of inflation expectations has paid huge dividends. It stemmed what could have turned into a sustained deflationary dynamic, and it also provided monetary policy with greater maneuvering room for extraordinary accommodation with less

danger of high inflation. To further reinforce the anchoring of inflation expectations, I strongly favor publicly stating an explicit inflation objective in the context of our dual mandate.

I should say that I am one of the latter participants to go in this round, so many of my further comments are going to echo comments of other participants. In particular, I noticed that some of my comments are very closely aligned with President Rosengren, and some of my other comments are very closely aligned with President Plosser. I am not sure how often that sentence is uttered. [Laughter]

MR. PLOSSER. We will watch this with great interest. [Laughter]

MR. WILLIAMS. I, too, think it would be useful to make a general statement of the Committee's policy framework that we all agree on, and to publish that in the minutes, as was done with the exit strategy. I actually think flexible inflation targeting is a good framework for thinking about that. It is a big tent, as many people have already mentioned, but with this group you may need to have a big tent like that, and so that is a good approach. As President Plosser earlier said, the work that was done by the ad hoc group on putting together a one-pager about the framework around a numerical inflation objective is a good place to start on that. I will add that inflation targeting has proven to be a very highly successful strategy that has been used in many countries.

I do think we have to be careful in how we publicly describe our current policy framework if we were to describe it as flexible inflation targeting. The problem, which has already been mentioned by a number of people—and this is where President Rosengren's comments and mine overlap—is that flexible inflation targeting is a very elastic term. It means different things to different people. For example, some inflation-targeting central banks have a hierarchical mandate in which price stability is the prime goal. That is not how I interpret our

dual mandate or our framework. Explicitly identifying ourselves as an inflexible inflation targeter could be misperceived as tipping the balance of our dual mandate strongly toward price stability. This could complicate already daunting communications challenges, and it could be seen as inconsistent with the mandate given to us by Congress. If we were to publicly describe our framework as flexible inflation targeting, which I do support in principle, it is important that we do so along the lines that Lars Svensson has done, and that is as a balanced approach, with a significant weight on both parts of the dual mandate.

With regard to communicating the optimal policy under commitment, such an approach is attractive for the reasons that were laid out in the staff memos. Unfortunately, for similar reasons that President Bullard mentioned, I think it is an unrealistic benchmark. In the jargon of academics, our commitment technology is very limited. It is simply impossible for us to set a predetermined course of policy that will bind future Committees.

Another comment I will make on the staff presentations, which were really helpful, is that the differences in the outcomes under the different policies that they look at—nominal income targeting or inertial Taylor rule or optimal policy—depend critically on the expectations of events that are many years in the future, another point that President Bullard and others have made. For example, if you look at exhibit 2 from Mike Kiley’s presentation, it is striking that the inertial Taylor rule and the nominal income-targeting rules actually yield essentially the same unemployment paths, as I see it, up until 2017, yet the inflation rates starting from 2012 are very different. I have dabbled in the dark arts of large-scale macro models, so I have some understanding of how these models work. Events way out in the future can really feed back into the present in a very strong way, and there is a lot of uncertainty about how strong the feedback effects are of events five, six, seven years in the future on the actual inflation and unemployment

rates today. I am not sure if, in reality, the simulations may exaggerate the benefits of differences in policy regimes. As President Bullard said, these simulations assume rational expectations, and that everybody instantly knows the change in the policy regime. In practice, I think there would be some learning and adjustment that would again reduce the differences in the policy alternatives.

Instead of thinking of optimal control as being the approach that we should be concentrating on, we should aim to communicate as clearly as possible our current reaction function. Policy thresholds could help in this communication. Alternatively, as Governor Tarullo and I argued last time, and a number of participants have already mentioned, we could include our individual projections about the appropriate path of monetary policy in the published SEP. Then, as our forecasts for economic activity, inflation, and the funds rate evolve, the public would get a clear picture of the state-contingent nature of our policy reaction function. Although I have not yet studied the results that we were sent this weekend from the trial run of the SEP, my reading of the SEP answers is that these are consistent with what I think of as a pretty clear view of where policy is expected to evolve, with a liftoff apparently in early 2014 or so, with a range of views on that. That range of views in the SEP about when liftoff is and what the policy will look like going forward is consistent with the range of views on inflation and economic activity. That would benefit transparency, and it would be consistent with our policy framework and communication.

Finally, I don't believe this is now the time to switch to a price-level or nominal income target. In theory, these approaches can work very well. President Lacker, and I think President Kocherlakota, brought up the issue that you should be really evaluating policy frameworks in an unconditional stance, thinking about how they perform on average. I and many other people

have actually looked at that issue in different models and under different assumptions. The way I would summarize is that a very good monetary policy rule—a well-calibrated Taylor rule, or an optimal control policy, or a nominal income-targeting policy, or a flexible price-level targeting policy—all of these do really well if they are well designed. They do roughly equivalently well in normal conditions. Looking at that question doesn't give you an answer about which framework you want. You really do have to think about the communications issues and also the unusual circumstances that we are in today. At this time, switching horses in the middle of the stream could confuse more than clarify, and ultimately could backfire. In particular, nominal income targeting seems to muddy the waters. Investors care separately about prices and about quantities. And, importantly, we care separately about prices and about quantities. Looking at only nominal income, which mashes together prices and quantities, seems to me at this time to be counterproductive and could undermine the anchoring of inflation expectations. Thanks.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, I am going to start and conclude where President Williams concluded. That is, I don't think now is the time, but I do think it is a subject we are studying.

First, I want to thank the staff for their good work. I also want to thank them for their honesty. I thought section 4 about the risks of our models at least, and the faulty potential of our models, was frank and honest. I do want to have submitted for the record a particularly pungent sentence, which says, "Given that the strategies we consider lack historical precedent, and even the tools used to implement the strategies are relatively unconventional, there is considerable risk that our model results may prove faulty in some respect." Indeed, any policy outside the range of historical experience, ranging from the strategies considered here to balance sheet adjustments and macroprudential regulation, could have unintended consequences for economic welfare, for

better or for worse. Your section 4 expands upon that somewhat. I thank you for the good work that you have put together.

I am in favor of at least more discipline, if not a rule. I think we have been a little bit spastic in the way we have developed policy, a little bit reactionary, and we have sent signals to the marketplace, which then seem to be built into expectations. I would like to see a little bit more discipline as we go through time.

I am in favor of the exercise. I boil it down to two simple principles: We have to be realistic, and we have to be credible. What I mean by realistic is that we know that we have more influence on inflation as a monetary phenomenon than we do on employment. What I mean by credible is that shifting horses, whether we do it midstream or whenever we do it, cannot be viewed as a weakening of our commitment to price stability, and cannot be viewed as, in particular, a weakening of our commitment to long-term price stability.

I thought President George's comments were interesting. To me, the key variable is to identify a longer-term inflation target. I am in favor of doing that. President George pointed out some issues around that—which target do we pick, under what conditions, and so on—but talking about having one is a worthwhile exercise.

Then, I would want to understand better within this Committee what the bands of tolerance are around that target if we are going to talk about flexible inflation targeting. Once we have achieved that understanding, then I think we need to explain to the public that as long as we have a dual mandate we have to deal with both inflation and unemployment variables. And as long as we have that mandate, then it may be desirable, if we decide that is the case at this table—once we have agreed on a long-term inflation target, and our tolerance bands around it—

that we may have to deviate occasionally from our target on maybe the high or the low side in order to deal with our employment mandate.

This is something that we should take some time to consider. I started this meeting by giving President Bullard a six-pack of Shiner Bock beer.

MR. BULLARD. Three left.

MR. FISHER. There are only two left, actually. [Laughter] Shiner Bock beer, by the way, Mr. Chairman, was picked because the Shiner brewery was founded in 1913, fitting for the Federal Reserve. But if you look at the way beer is made, out of hops and grains, the standard formula has been in place since the year 1541 under a ruler of Bavaria named Henry IV. Now, there have been improvements made to beer, but I think it is something that you would have to proceed with extremely slowly.

I am not suggesting we take another 500-and-some-odd years to change our rule or our discipline, but I do think that we need to vet the thoughts that have been circling around this table. Reference has been made to Ms. Romer. I thought that was an interesting article. However, I must tell you that all I got out of it was, “Be bold.” That was what her message was. I wasn’t convinced by her argumentation. I have listened very carefully to Ken Rogoff, who is on our advisory committee at the Dallas Fed and our Globalization and Monetary Policy Institute. I respect him enormously. And then, I observed the pushback that came from another person I respect enormously named Paul Volcker. I understand that Tobin made the arguments in the 1970s, but I also understand that no other central bank has attempted what we are talking about. You had a slight variation of price-level targeting in 1930 by the Swedes. We love to evoke the Scandinavians at this table. But it was not held for very long, and it was a variation of

price-level targeting. To my knowledge, no central bank has adopted nominal income targeting. It is true that Tobin made the argument in 1970. It is true that Martin Feldstein agreed with it.

I did have Professor Feldstein down the other day to the Dallas Fed. He is completely against it presently. Why? Because he doesn't think we are quite credible yet in having anchored—and this is his own personal view—our commitment to long-term price stability. I come back to long-term price stability. To me, that is the key variable. The flexibility around it is something that we need to define, and then we need to socialize it. Despite the interest that has been shown by Goldman Sachs and Christy Romer and others, I think we need to socialize it further. I would say at a minimum I would take the theoretical work that has been done, and some of the studies that we are doing, and at least get these out into academia and into a more serious discussion, so that we can evaluate these alternative policy rules and see what kind of criticisms come forward.

Mr. Chairman, in short, I am in favor of trying to achieve greater discipline. I would like to come up with a rule that is more modernized. I am willing to change the formula to the beer that we brew, but we should take our time. I would like to suggest that we look at a time horizon that doesn't have to be infinite. I would be against changing this horse in midstream now, as President Williams mentioned. But I would at least like to have these questions discussed and vetted and thought through—including the risks that I mentioned at the very beginning—over the course of the next several months, if not half a year. I think it is a worthwhile exercise. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. I thought the staff work was excellent and thank them for all their efforts.

I am not convinced our current framework is obviously inferior to some of the alternative frameworks that have been proposed. I think market participants do know what our long-term inflation objectives are. If you look at the SEP's long-term inflation, it is in a very narrow range. I think market participants have a pretty good understanding that we have something close to a quadratic loss function. All you have to do is compare and contrast how we have reacted to the inflation and unemployment news in the U.S. compared to Europe, and you see quite a bit different path.

What we should be focusing on is not so much frameworks but providing more insight to the public about what our reaction function is. My emphasis would be on reducing the uncertainty about how we would likely react under a wide range of circumstances. By doing that, we can accomplish two things. One, we can reduce uncertainty about how monetary policy is likely to evolve, which should have favorable implications for risk premiums, therefore, making financial conditions more accommodative. And, two, it would help markets to think along better with us, so it may enable market participants to better anticipate our future actions. That means prices could adjust more rapidly to the receipt of new information on the economy or political developments that might affect the outlook.

Now, having said that, I want to provide more information about our reaction function. I don't think that is a very simple task. Not only are there 17 different reaction functions around the table, but it is also difficult to reduce those reaction functions into a simple two- or three-parameter mapping. For example, specifying what the unemployment rate and the inflation rate forecast is likely to be as a precondition for exit, is probably too simplistic for most of us; other parameters might also be important, for instance, speed limits—how fast the unemployment rate

is falling or inflation is rising—or the risk around the central forecast—if there is a very big skew in the outlook.

Despite this, I think we can do more to overcome some of these problems. First, we can provide greater detail about our individual forecasts, and we could aggregate this detail into consistent central tendency projections with respect to the inflation rate, unemployment rate, and the path of the federal funds rate.

Second, we can explore in greater detail the degree of agreement within the Committee about what parameter values would be important in their view in influencing when exit might be likely. If the dispersion turns out to be relatively narrow, then we could actually move down this path, hopefully over the next couple of meetings. In this respect, in terms of the trigger values, I would much prefer escape clauses rather than triggers, because it gives us a little bit more flexibility. It allows a little bit more nuance. The fact that you only have two parameters with escape clauses is implicitly saying that those aren't the only things that are important to you. In my mind, expressing parameters with respect to inflation and unemployment is quite a bit superior to a date. For one thing, we are probably going to move the parameters around a lot less frequently than we want to move around a date. I have a lot less uncertainty about what my parameter values on unemployment and inflation are likely to be than I do about the date. I have no idea when we are actually going to exit. I have a point forecast, but there is a wide range around that. Conversely, I have a relatively narrow range around the parameter values of unemployment and inflation that might trigger an exit.

In terms of the types of foreign commitments discussed in the staff memo, I am skeptical that there are significant benefits, because I don't know how we can tie our hands credibly—a point that many others have made—and I don't think the model assumptions about how market

participants form their expectations is necessarily correct, coming to the point about your brother-in-law.

Finally, I worry that making binding commitments might be viewed as potentially reckless in a world where the outlook is highly uncertain. If people thought we were making binding commitments and then we got a very bad draw relative to our modal forecast, we would then be committed to generating something that could be potentially a very unpleasant outcome. Market participants would price that in immediately as a potential risk.

In terms of the alternative frameworks, I have some skepticism about a nominal GDP targeting regime. It is very difficult to explain, and it seems to bless outcomes in terms of growth and inflation combinations that we might not be happy with. It seems to suggest that 5 percent real GDP growth and 0 percent inflation is equivalent to 0 percent real GDP growth and 5 percent inflation. The former would be terrific, and the latter would be pretty horrible. Explaining that in the context of nominal GDP target would be very difficult.

In terms of price-level targeting, I see some value in environments in which deflation expectations are a problem. The PLT could be helpful in those particular circumstances in anchoring inflation expectations. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I, too, want to thank the staff. I greatly appreciate their thorough analysis of alternative policy frameworks.

Let me turn to the questions. On the first question, I think that a flexible inflation-targeting framework would be fully consistent with our dual mandate. As I noted at our September meeting, I've been a long-time advocate of establishing a specific numerical inflation objective as a means of facilitating our internal decisionmaking and augmenting transparency

and accountability to the public. Under current circumstances, a clear long-run inflation goal would help ensure that transitory supply shocks don't shift inflation expectations, and it would underscore our determination to minimize the risks of deflation. A consensus statement about our policy framework could be an ideal means of enunciating an explicit inflation goal because such a statement of principles could emphasize our commitment to both parts of our dual mandate. The statement could specifically indicate our judgment that the mandate-consistent inflation rate is 2 percent, while noting that our estimates of the longer-run sustainable unemployment rate are regularly conveyed through the SEP. In my view, it would be also essential to clarify that the time horizon over which inflation is expected to converge to the longer-run goal would depend on economic conditions and would reflect the Committee's judgments about the path of policy that most effectively promotes both parts of our dual mandate.

Turning to the second question, a long and distinguished literature shows that central banks can foster better macroeconomic outcomes by making conditional commitments about the future path of policy rather than by following a discretionary approach of re-optimizing at every meeting. I think commitment strategies are particularly beneficial when the current setting of the policy rate is constrained by the zero lower bound, because the central bank can provide extra accommodation by promising a shallower interest rate trajectory than would be implied under a purely discretionary approach.

The conditionality is a crucial element of commitment strategies because an unconditional commitment could result in very poor, even disastrous outcomes under some circumstances. In theory, the ideal Ramsey planner would formulate and communicate a complete set of state-contingent commitments. He would spell out exactly how the path of

policy would unfold under every conceivable scenario. In reality, of course, the idea of a policy committee agreeing to a myriad of policy paths and seeking to communicate all of that information to the public is completely impractical.

The staff memo mainly focuses on one approach to addressing this problem—namely, the use of simple rules that specify how the central bank will respond to observable economic variables. In my view, such rules can serve as very useful benchmarks for assessing the stance of monetary policy and for helping the public understand how policy may evolve under alternative scenarios. But it would be highly inadvisable to make a binding commitment to follow one particular rule, because there are surely contingencies under which any given rule might perform quite poorly. I, therefore, consider it preferable to take a more pragmatic approach, one that involves communicating our modal expectations about the path of policy and conveying the conditionality of that path by specifying thresholds for key economic variables, in effect, the approach illustrated in the final variant for paragraph 4" in alternative A1. And here I agree completely with President Evans and others, and I agree exactly with his analysis of why this type of approach would be robust and beneficial. As an alternative, the Committee could indicate its modal expectations for policy and the associated paths of economic variables as is proposed in 4', the second variant of paragraph 4 in alternative A1. But this approach would seem to me to be at least somewhat less effective in communicating conditionality.

Turning to the third question, I'll devote most of my comments to nominal income targeting. There is a significant body of research that highlights the extent to which this framework can facilitate the stability of prices and the real economy, and a number of prominent economists who have recently been urging the Fed to consider adopting it as a means to respond more forcefully to current economic circumstances.

The staff memo shows that nominal income targeting could be quite helpful in promoting our dual objectives under the modal outlook in a range of alternatives. Nonetheless, as I've contemplated the possibility of a nominal income target, I've become increasingly convinced that there would be enormous practical challenges in implementing this framework, and that may help explain why no other central bank has ever followed such an approach. Let me highlight a few specific concerns.

First, as is noted in the staff memo, it would not be appropriate for the target path to be permanently fixed. Rather, it would need to be revised whenever there were significant changes in the estimated level or growth rate of potential output. Importantly, such revisions would need to be retrospective as well as prospective. For example, last August's NIPA re-benchmarking led to a substantial revision of the estimated path of potential output that would have required a corresponding change in the target path. I can easily imagine the public confusion on such occasions. People would complain the Federal Reserve is changing the goal posts.

Second, the target path by itself doesn't provide a full description of this framework. Rather, the central bank must also specify and communicate the rule it will follow in bringing nominal income back to that target path. That choice may have non-trivial implications for the stabilization performance of the framework. For example, it might seem intuitive to follow a rule that prescribes monotonic convergence back to the target path, but such a rule would generate macro outcomes that are much less appealing than those obtained in the staff memo, which uses a rule that implies substantial overshooting. Nevertheless, I suspect it would be much more difficult to explain the overshooting rule to the public, and of course, the whole rationale for this approach could be undermined if wage and price setters and financial market investors didn't fully understand it.

A third pitfall of nominal income targeting—this is something that Presidents Williams and Kocherlakota have been commenting on—is that the strategy may involve a very long process of convergence to the balanced growth path, not just 5 or 6 or 8 years, as described in many of our SEP narratives, but perhaps stretching out as long as 15 or 20. For example, in the FRB/US simulation of the recession scenario with policy remaining highly accommodative through 2018, the unemployment rate, as Mike noted, drops to close to 3 percent. Inflation peaks around 2¾ percent, and nominal income overshoots its target path by around 2 percentage points. At that point, though, monetary policy can't just shift back to being neutral. Rather, to bring nominal income back to target, the stance of policy gradually becomes contractionary. By 2024, the economy is in mild recession with unemployment rising back up to 6 percent and inflation running around 1¼ for a few years until the path finally settles down around 2030.

In effect, the strategy succeeds in dampening the near-term consequences of the recession shock by providing a clear and credible commitment to a policy path stretching out over nearly two decades. From an aesthetic viewpoint, the dynamic elegance of this policy is breathtaking. [Laughter] I spent the weekend contemplating potential analogies, deciding that the best comparison would be to an Olympic figure skater who leaps in the air for a triple Salchow. We all hold our breath until she lands gracefully to complete the rest of her performance. However, we should remember that the figure skater's routine is one she's practiced hundreds of times [laughter] until she could execute it as flawlessly as possible. Even if she has an awkward landing, the worst case is that there's no gold medal, but surely no champion skater would introduce a routine for the very first time right in the middle of an Olympic performance. And like the practical complexities of nominal income targeting, it would only be prudent to develop, implement, and carefully communicate this approach over a course of a number of years. This is

the approach that's been taken by the Bank of Canada, which has spent the past half-decade exploring alternative monetary policy frameworks in close consultation with the public and the Canadian parliament. In the near term, however, we might consider making more frequent references in our monetary policy communications to the level of nominal income and its relevance in guiding our thinking, in effect, turning it into a second pillar of policy.

More broadly, the conditional commitments may be the most potent tool in our toolbox at this stage, but we need to be mindful of the intrinsic limits on our ability to make credible promises over time horizons that extend beyond several years. We need to follow a pragmatic approach for promoting the stability of economic activity and inflation, recognizing the limits of our understanding of the structure and evolution of the economy and of our ability to anticipate or plan for all possible contingencies. This inclines me, as I said, toward enhancing our forward guidance, ideally along the lines that President Evans has articulated or, alternatively, through an approach that would involve our projections.

On the final question about projections, I do strongly favor publishing information on policy projections in the SEP. Our subcommittee will be happy to work with staff to develop specific approaches to circulate to the Committee for your consideration if the Committee wants to go in this direction, and I certainly think that it's something that we should carefully consider. I look forward to working on that.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I, too, want to thank the staff for the quality of thought and work that went into the memos and for the time they spent with me answering my questions. I also want to apologize to that same staff because my comments are going to take the intellectual level of this discussion down a number of notches, but I'll remind you that the

intended audience for any communication that we might make includes a lot more people like me than it does people like you. [Laughter]

I am in no position to question the theory, the assumptions, the thought, the quantitative analysis, the simulations, or the academic literature that underpin the framework memos. As I thought about these over the weekend, I was reminded of a story that I first heard when I was in college, and maybe some of you heard it as well. It's the story of the physicist and the economist who were stranded at sea with nothing but a single can of beans to eat, and the physicist took the can of beans and applied precisely the right amount of force at exactly the right location and still couldn't open the can of beans, despite having used the heat of the sun and the coldness of the water to soften up the metal. So he asked the economist if he thought he could open the can of beans, and the economist looked at it and said thoughtfully, "Assume we had a can opener." So I focused on two aspects of execution, credibility and clarity, because all of the expected results depend critically on the assumption of a can opener—that is, absolute credibility and clarity.

The Federal Reserve already enjoys a high degree of credibility stemming from its demonstrated commitment to containing inflation. This credibility comes not so much from what we say, but from what we have done for many years, and the public has learned our ways. For the most part, the public still trusts us to control inflation, and those who pay the most attention to what we say have come to understand that we will control it at a level of 2 percent or a bit less. If we're going to convince the public that we're going to act differently in the future, especially far into the future, we will first need unanimous or near unanimous agreement and steadfast conviction that it's the right course for us to follow, and we would need to speak with one voice to communicate clearly how we were changing and why. Without near unanimity and one voice, the public could focus on the potential for the rotation of voters to change the path or

the potential for the two open seats and the upcoming term endings on the Board to bring about a philosophical change or, in the worst case for credibility, the political debate could become fixated on effecting such a change through legislation or personnel changes.

Finally, in order to protect the hard-won credibility that we already have, we must be absolutely clear about our intentions and our reasoning, and one carefully worded and unanimously supported statement is a start, but it has to be reinforced through repetition and explanation. As an example, there's already much confusion in the public about the difference between guarding against deflation and inflating our way to growth. To return to the questions we were asked to address, I'm supportive of an effort to create a document that addresses our framework as long as it addresses both parts of our dual mandate. I'm not opposed to making a clear statement about our objectives or even an explicit inflation target as long as we also articulate the way that the employment level influences our decisions. It would be helpful if we could also articulate the way that asset purchases fit into our strategy and how the size of our balance sheet interacts with the federal funds rate and our policy objectives.

Moving on to the question about using policy thresholds to explain our strategy, I used the fed funds rate in the alternative simulations to help me with my fed funds projections in this round, my understanding being that these are fed funds rates that most closely correspond with the historical behavior of the Committee if each of these scenarios were to unfold. But when I tried to find the common thresholds in those simulations, I couldn't do it, which underlined, for me at least, the need to think carefully about how we express ourselves. In August we started down the path of using a date for forward guidance. Then in September, with no one especially pleased with the idea of using a date, we discussed several alternative ways of providing guidance. Before we change this again, I hope we'll work very hard to forge agreement on the

language, such as date, time, or threshold; the vehicle, such as statement, SEP, or separate document; the frequency with which we plan to adjust it; and whether we do it as a commitment or a forecast.

As to changing frameworks altogether, such as a move to targeting nominal income or a price level, I found the discussion of risk in the memo quite persuasive and would hope that we could keep these weapons in reserve unless we see a recession scenario in which a dramatic change might better justify the risks. In the meantime, it could help with clarity if we could work to educate the public about why we might make this choice.

Here's what I would most like to see us do: Rather than each trying to convince the others that his or her approach is the best, maybe we could think about what it is that we all do agree on. If President Williams agreed with both President Plosser and President Rosengren, that proves that this is possible, [laughter] and then we could work to explain that to the world.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I'll begin where Esther began, with the observation that people's preferences with respect to things we call framework or quasi-constitutional changes are almost always connected to substantive policy preferences. I very much think that's the case here, and so in part that leads me to want to bypass a lot of this discussion in order to focus on the question of what should we be doing given the fact that we have somewhat differing analyses of where the economy is. I think that leads to more need for communication, but it pushes me away from a preference for structural or quasi-constitutional changes because of my observation that writing constitutions or frameworks tends to become more complicated precisely because there's a different set of debates going on underneath, which

are substantive policy debates. And, while I wouldn't foreclose any of that, having listened to most of the conversation already today, it doesn't strike me that there's been an enormous amount of convergence thus far around any new framework.

The second introductory observation I'd make is that the more I've read in the intermeeting period about the way other central banks do everything, do inflation targeting and economic projections and the monetary policymaking in general, the more I have been impressed with the—how shall I put this neutrally?—peculiarity of the Federal Reserve System. Thus the tentative conclusion that much of what may work in other countries, in other monetary policy committees in other systems, may not work particularly well precisely because of the different institutional characteristics that the Federal Reserve System has.

Turning to the questions that the staff put in front of us, I'm going to change the order somewhat and start with the framework question. To Richard, I would say that the possibility of unanticipated negative consequences is a sobering one to be sure, but one always has to balance that with what the costs of the status quo are, and that's where we get to substantive issues again. My own view, which won't come as a surprise to anyone, is I am deeply distressed with the status quo. I fear, as an increasing number of people do, that we are sliding into a period of stagnation, which will become ever more difficult to extract ourselves from. As an ex ante matter, I wouldn't dismiss something just because there probably will be negative unanticipated consequences. However, I think Janet and a number of others have pointed to anticipated negative consequences, which could be associated with some of the framework changes, and add to that the communications difficulties that a number of you have pointed out, and it seems to me—again, like many, though not everybody here—that these things are worthy of continual consideration in the event that the economy deteriorates further or, regrettably more likely

perhaps today than a few days ago, we get a major external shock sometime in the not-too-distant future.

I'm going to pair the threshold proposal with the SEP because I think they are both about communications. As everybody knows from the last meeting, John and I were trying to push forward onto the table the use of the modified SEP as a surrogate for the use of the thresholds, and I continue to think that bears consideration, but I'm going to place two qualifications on my own predisposition.

First, I read the results of our initial foray here as posing more of a communication problem than I had anticipated, and I am of the provisional conclusion that aggregating the 17 individual results is not going to do the trick. We may want to think about some alternatives, again, taking into account the peculiar institutional characteristics of the Fed for this purpose, the fact that we are a very large group compared with other central banks that have this kind of exercise. The academics with whom I've spoken about these sorts of exercises all point to the value of the discussion whereby the monetary policy committee critiques, and comes eventually to some consensus, on the projected path of interest rates. I have a vivid imagination, but I have had difficulty conjuring up the scenario in which the 17 people around this table come to a consensus view on a projected path of interest rates. But it seems at least plausible that if staff could construct three scenarios—one, relatively higher inflation; two, their baseline scenario; three, relatively lower inflation—we might have the opportunity to get most members of the Committee signing onto the proposition that if this, in fact, is the way that the economy evolves over the next eight quarters or whatever the projection period would be, then the anticipated federal funds rate path associated with that movement in the economy would be appropriate. I don't know if that's possible either, but it seems to me worth thinking about.

The second problem, which somebody alluded to earlier, and I did note this in my memo last time, is that at present we've got the big balance sheet in addition to the zero interest rates. As many of us have said many times, beginning to draw down the balance sheet would be the equivalent of a tightening move and thus would be relevant to market actors and somehow that would be need to be factored in.

Moving now to the flexible inflation approach, Jeff is absolutely right. You state the proposition broadly enough, everybody can agree with it, and that allows everybody to tweak the particular clauses or phrases in the formulation in order to make it fit their policy predisposition. As I've said before on this Committee, I was substantially more open-minded on stating an explicit inflation target when I walked in here two years and nine months ago than I am now, and the reason for that gets back to Esther's observation. I think to a considerable extent, it reflects, and would be perceived publicly as reflecting, a fairly strong, substantive preference for an inflation target over the other side of the dual mandate.

I have listened to some of us around the table who basically say that if you do price stability well, you will promote maximum employment, which to me is very close to reading half the dual mandate out of the statute. It is a coherent view of the world, but it's not either what the statute says or my view of the world, and thus I have some substantial resistance to it. There are some environments in which the establishment of an explicit inflation target, along with the kind of explanations of unemployment or maximum employment or output gaps that people have mentioned, could be perceived as a balanced embodiment of the dual mandate. I don't think that this is one of them. Although I'm not closed-minded on the proposition, I have to say that there's a substantial hurdle that I feel has to be overcome before I would be comfortable with it.

My last comment would be that one way to potentially make me comfortable with an inflation target—contrary to what Esther said, as opposed to agreeing with her—is if it were put in place as part of an exercise that was actually accommodative. That is, if the inflation target were put in place and the rest of the explanation of the dual mandate made an effort to communicate as clearly and credibly as we could a medium-term inflation target, while at the same time taking the kind of substantive policy accommodation steps which I think are needed, then it would be a different story. But as Esther’s comment reflects and as I’ve heard others speak, it seems to me that a lot of people want actually to pull those apart because, quite legitimately, they have a substantive policy preference for not taking further accommodative action and, thus, don’t want to tie those two things together. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin. I’m sorry. President Kocherlakota.

MR. KOCHERLAKOTA. Just a quick gloss on what Governor Tarullo said about the SEP paths of the target funds rates. There was a lot of heterogeneity. I was struck by that.

I will say for myself, the question was about what I viewed as the optimal path of the fed funds rate. The question was not about asking me to forecast what the fed funds rate was going to be—what the likely outcomes of these Committee deliberations would be. My guess is that President Evans and I might come much closer on that calculation than we would if we were asked to be in charge of setting the fed funds rate.

CHAIRMAN BERNANKE. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. First, I think flexible inflation targeting can be consistent with the dual mandate. Unlike the Committee’s current approach of constrained discretion, flexible inflation targeting is more optimal if it involves conditional commitments

referencing both parts of the dual mandate and indicating how policy rates will be adjusted going forward. Constrained discretion, on the other hand, means that the Committee proceeds on a meeting-to-meeting basis and remains unwilling to promise future accommodation via communication. With this current approach, the Federal Reserve will not meet its employment goal for a long time and may be at risk of undershooting its inflation goal as well. Moreover, the continued use of constrained discretion means that the funds rate begins to increase in 2014 even though unemployment is well above the natural rate and inflation is below 2 percent. I respond to question 1 by believing a framework of flexible inflation targeting can be structured to be better aligned with the dual mandate and more likely to lead to optimal results that are better achieved with commitment strategies that reference both employment and inflation. In terms of articulating a framework, I see no downside and can imagine developing a statement on the policy framework similar to that used for the exit strategy statement.

The staff memo on alternative frameworks describes the superiority of commitment strategies. The memo makes clear that there are risks in such strategies, most notably risks related to the possibility that the commitment strategies would perform less well if their credibility were significantly questioned, and that there are challenges in the use of such strategies, most notably the challenge of communication. Even the most stimulative policies considered do not imply significant overshooting of inflation above a possible long-run goal of 2 percent. I believe that the commitment strategies are superior, but only with a strong caveat. That caveat is the imperative of a well-developed and well-tested and multifaceted communication strategy. Unfortunately, to date we have not put enough effort into framing such a communication strategy, and the results have been negative and troubling to this institution and

to the Committee. The launch of the second LSAP, for example, was met with a barrage of mostly uninformed negativity, which may have undermined its effectiveness.

Paragraph 4 in alternative A1 presents three strategies with increasing commitment and accommodative value. The first option is the least transparent, contains the lowest commitment, and accordingly, would provide the least accommodation. The third option is the most transparent, contains the greatest commitment, and accordingly, I would expect it to provide the most accommodation. The latter two options could bring about a noticeably faster fall in unemployment than under the baseline outlook while keeping inflation in the neighborhood of 2 percent. Whichever of these options is chosen, there should be a corresponding communication program set forth for the Committee to discuss and debate. In addition to this enhanced forward guidance, which looks more like the third option for paragraph 4 in alternative A1 and less like the first option for paragraph 4 in alternative A1, the staff memo describes two other commitment strategies: price-level targeting and nominal income targeting. Both of these strategies are shown by staff to be more optimal under various models, including FRB/US, than the Committee's existing strategy. I appreciate how critical credibility is to the execution and success of these commitment strategies and appreciate the scale and creativity that would be involved in the crafting of a comprehensive communication strategy.

Again, I don't view the communication challenge as insurmountable. Rather, I would venture to say that communication thought of as a strategy is a challenge that needs more serious debate and piloting. From this perspective, I believe the communication challenge to be just as intense for our current framework and choice of policy actions. There's continued risk to the credibility of the Federal Reserve in a decision to continue to engage in constrained discretion

because we have not described to the public why we are choosing to engage in what we have decided is a suboptimal strategy.

Model simulations suggest that nominal income targeting could provide considerable stimulus under the modal outlook and would perform well in a severe downturn or in response to an unexpected sustained rise in inflationary pressures. Accordingly, if the credibility challenges could be overcome with a meaningfully robust and comprehensive communication program, I would view us as remiss in meeting the dual mandate if we were not to consider it.

Finally, I should attempt to be concrete about what I think a communication plan includes. At the very least, we need to be able to explain the expected transmission of the action. I was stunned when talking to a group of bankers after one of them said to me, “Please stop. Just stop. What can we do to get you all to just cease?” This kind of question makes it obvious that our actions are not completely understood and suggests that we focus resources on a communication plan both through the SEP and through a coordinated strategy that can explain how our policy actions are expected to work and how they may fall short. Thank you.

CHAIRMAN BERNANKE. Thank you very much, and thank you all for your thoughtful comments. Let me make a couple of suggestions and summary remarks. First, on the intermediate targets like nominal GDP and price-level targeting, I didn’t hear much enthusiasm for any near-term adoption, although I think there was at least some interest in continuing to think about these issues perhaps in the context of a significant change in the environment.

Just for interest, I do raise one point, which is that a number of people have mentioned Christy Romer’s piece, and she talked about the 1979 regime change. I actually think that’s the wrong example. As President Bullard pointed out, when Chairman Volcker changed the policy regime, in fact, it took a long time for people to appreciate it and understand it, and one

implication of that is there was a long recession and real interest rates remained very high, and so on. But there are other examples, like 1933, when Roosevelt took the U.S. off the gold standard, and prices and asset prices changed almost overnight. There are other examples like the end of hyperinflations, and so on. There's something sometimes about regime changes that has remarkable effects on an economy. I'm not saying that we know how to predict that, but that's something that we haven't really understood or really explored in this conversation. That being said, I think that there was a lot of agreement that there are a lot of practical issues associated with implementing such an intermediate target, including both the very long horizons over which they have to operate and the issues of communication and credibility.

There was considerably more support for two specific things. First would be formulating some statement of principles in the same mode as the exit strategy principles, to try to formalize a bit more our flexible inflation-targeting framework. One element of that would be a numerical inflation objective, but I think it was made clear that other important elements would be a clear explanation of how this framework is consistent with the dual mandate: in particular, why it is that we have a number for inflation and not for unemployment, how those two things differ, how we think about the horizon under which we take various actions, and so on. I would ask the subcommittee, if Governor Yellen is willing, to begin a process of trying to put together such a document. The work that President Plosser and his group did, and President Plosser is a member of the subcommittee, is obviously a starting point for that, and—we're not making any commitment, to coin a phrase [laughter]—we should see what kind of agreement we can get on such a statement. Incidentally, I thought a useful addendum to the Plosser et al. document was a set of Frequently Asked Questions, which might be a useful thing to work on as well in order to explore and illuminate some of the issues.

The other thing for which I heard reasonable support was for further implementation and use of the SEP as a means of policy guidance. In particular, we'll hear today a report on the trial run on the policy projections, and I would propose—contingent on the discussion that follows that presentation, if people are willing—to again ask the subcommittee with a lot of staff support to try to develop some possible presentation approaches, some mock-up SEPs, and so on for our consideration to see if we find that a useful mechanism.

If we can do these things, let me suggest a very ambitious way of putting this all together, and of course, which can always be extended. If we were able to get an agreed upon statement of principles on the framework by the next meeting, by mid-December, and if we were also able to get to some agreement about the use of our policy rate projections, then we could review those issues at the December meeting. If we were comfortable with where we were at that point, we could then have a plan to consider at least ratifying these items as part of a communications package perhaps as early as our January organizational meeting. If we were to agree to do that, then we could try to prepare the ground for that in various ways. One thing, for example, would be that I could give a speech a couple of weeks before the January meeting and outline some of the ideas that are being discussed, and that would give us a chance to get some public feedback on the ideas, and we could also do some consultation. But it seems to me possible, if things go well, that we might consider trying to put together a package by the end of January. Two weeks after that or so is my Humphrey–Hawkins testimony, which would be another opportunity to explain this.

I think some of these things are better as part of a package of communications ideas rather than a discrete change in one aspect of our communications. Again, this is just a proposal.

I'll give people a chance to react after I finish these remarks, but there's no commitment being made until we see how things go and how comfortable people are.

I have one other set of comments, which has to do with the discussions we had on conditional commitments. There was a lot of interesting discussion on that issue. I will say for myself that I think this is something we should keep on the table. First of all, forward guidance is not something we're contemplating; we're well into the forward-guidance game. In fact, that was something that was part of my predecessor's legacy—"a considerable period" and "measured pace," you remember all those things. We have, for better or worse, given an estimate of the date at which policy will begin to tighten, and it would be very desirable for us to think about ways to improve our forward guidance, particularly in light of the fact that we're at the zero lower bound and communication is an important part potentially, at least, of our toolkit.

Forward guidance is also, again, one way, and President Evans made a couple of good points. One is that many of the properties of the optimal control path that the staff discussed, or at least some of them, could be replicated by an appropriately calibrated forward guidance, where there was a commitment or just a forecast. There's that advantage, and then President Evans also made the point that by having triggers or escape clauses, you can protect yourself against uncertainty about the underlying source of the problem. His example was if we don't know whether the problem is a collapse of potential output or a collapse of aggregate demand, if we have sufficient conditionality, we are protected against both approaches. Again, that's something we ought to consider.

I do think that some of the discussion helps us address some of the concerns that people have. Let me mention a few things. In our discussion of the strategies at the last meeting, one of the concerns people had was that the public would misinterpret a trigger or an escape clause as a

target. Obviously, if we put this in the context of a broader communications strategy, that would reduce that risk considerably. Another concern that was raised was that we certainly can't estimate the natural rate of unemployment, even if it's not time-varying, with any accuracy. And if it's time-varying, that makes it even more difficult. But I would point out that the kind of language we have in the statement A includes both an unemployment trigger, but also an inflation trigger, and that would be a protection against a mistake in terms of where the unemployment rate should be. Yet another concern about these conditional commitments is that they involve very long time frames. President Bullard made the very good point that we should be at least combining with, or maybe just focusing on, asset purchases as being a more active type of policy action that would be more likely to affect expectations. I make the point that if our optimal policy involves a commitment which is very long in terms of the interest rate, we could at least consider combining that with asset purchases as a way of bringing that rate closer to the present.

So there are some issues here that we need to discuss, but some of them may be at least addressable. Now, having said that, I recognize there are lots of different ways to do this. The alternative statement A gave three different types of language. It could go into the statement, but some people have talked about the use of the SEP, and there are a variety of modifications that could be contemplated. I put this out there as something I will ask the staff—and Reserve Bank presidents might want to ask their own staffs—to look at, and we should try to make some progress on this over the next couple of meetings.

Any comments or reactions, particularly on the plan to try to get something together by January? Again, this will be contingent on it working. I should say that these framework changes are constitutional-type changes, and I'm certainly going to be looking for a very broad

agreement before we make any of these changes. [No response] Let's turn next then to item 3 on our agenda, financial developments and open market operations; and we'll turn to Brian Sack.

MR. SACK.² Thank you. The exhibits are coming, but I wanted to say a few words before actually getting to the handout. Frankly, after hearing about what's taken place in financial markets over the past couple of days, you may actually need a drink. [Laughter] So I think the innovation of beer at the FOMC meeting is a good one. [Laughter].

Movements in markets yesterday and today have been dramatic. Let me give you a few numbers: The S&P 500 index is off about 5 percent, European stocks are off about 8 percent, some U.S. financial companies, such as Morgan Stanley, have their equity prices off 15 to 20 percent, and the 10-year Treasury yield has plummeted about 30 basis points. My point is that, once again, the world appears to be shifting under our feet pretty dramatically.

One consequence of this volatility is that it actually makes it quite hard to prepare a briefing that is timely. I think you will find that my prepared briefing provides very accurate and insightful information about financial market movements through last Friday [laughter], but I will do my best to modify accordingly. You're going to notice some tension here and there.

The story from my briefing, and that was presented in the Tealbook, is that financial market participants had generally become more optimistic about the outlook over the intermeeting period in response to the perception of progress toward a comprehensive policy solution in Europe and generally better-than-expected economic data. This improved sentiment had lifted the prices of most risky assets and had caused interest rates to rise. However, I had planned to note that the financial environment remains volatile, and that it is uncertain whether this enthusiasm would last. The sharp downturn in markets that we saw yesterday and so far today has brought that point forward with an exclamation point.

Let me turn to the exhibits. As shown in the upper-left panel of your first exhibit, Treasury yields had increased significantly over the intermeeting period, with yields at intermediate maturities moving up 25 to 40 basis points through last Friday. As suggested by the news index shown to the right, the incoming economic data has generally been better than expectations, supporting the upward movement in yields. In addition, developments in Europe have been an important driver of market movements, with perceived improvements in the policy outlook usually associated with increases in Treasury yields. However, taking into account the sizable decline so far this week, Treasury yields are now only modestly higher, on net, over the intermeeting period.

² The materials used by Mr. Sack are appended to this transcript (appendix 2).

The pattern of yield movements also reflects the impact of the policy decisions that the FOMC announced at the September meeting. The decision to extend the maturity of the SOMA portfolio appeared to pull down Treasury yields, with the largest effects at longer maturities, as suggested by the pattern of forward rate changes shown in the middle-left panel. When combined with the other developments over the intermeeting period, the net effect through last Friday was to leave forward rates out to 10 years somewhat higher, and forward rates beyond that point somewhat lower, than they were at the time of the last FOMC meeting. And, of course, with the events in recent days, that structure will be lower.

The table to the right takes a closer look at the effects of the recent policy actions. As shown in the first column, longer-term Treasury yields declined substantially immediately surrounding the September FOMC announcement. Moreover, this movement passed through strongly to the 30-year swap rate, suggesting that the effects of the program were not limited to only Treasury yields.

Of course, the movement in a window around the FOMC announcement is not necessarily an accurate measure of the impact of the policy actions, for two reasons. First, the policy actions were anticipated, and hence much of the effect was likely incorporated into asset prices in advance of the meeting. Second, market participants became more pessimistic about economic growth prospects in response to the description of the economy in the FOMC statement, which likely contributed to the decline in rates.

To arrive at a better measure, the Desk's survey of primary dealers asked for estimates of the effects of the policy actions, controlling for these other factors. The median response, reported in the second column of the table, shows that dealers believe that the policy actions pulled down longer-term Treasury yields by 10 to 20 basis points, roughly in line with the staff's estimates ahead of the actions.

Dealers also thought that the maturity extension program had raised the two-year yield by 7 basis points, apparently because of the additional supply coming from our sales of Treasuries with maturities of three years or less. However, market participants still expect short-term interest rates to remain at their current levels for a very long period, which should limit any upward movement in the two-year yield. Indeed, as shown in the bottom-left panel, dealers see a greater than 50 percent chance that the first increase in the federal funds target rate will not occur until 2014 or later.

The figures reported in the table also show the effects of the FOMC's decision to shift SOMA reinvestments back into agency mortgage-backed securities. Dealers estimate that this decision narrowed the option-adjusted spread on current-coupon MBS by 15 basis points. This policy step came as a surprise to market participants, and hence the effect on the spread occurred immediately after the FOMC statement. As shown in the bottom-right panel, that narrowing of the MBS spread reversed some of the increase that had been observed since the summer, but the MBS spread remains quite elevated compared with its levels early in the year.

Before leaving this panel, it is worth noting that the MBS market has also been affected by the FHFA's announcement of upcoming changes to its HARP program. As summarized in the Tealbook, the FHFA made a set of changes that it estimates will cause an additional 1 million mortgages to be refinanced. Not surprisingly, the announcement led to a significant widening of the spreads on higher-coupon MBS due to greater prepayment risk, and these spreads experienced considerable volatility as market participants debated the potential scope of the program. Nevertheless, the current coupon MBS yield was not strongly affected by the announcement, suggesting that it did not have detrimental effects on current mortgage conditions.

Your second exhibit turns to broader financial market developments and recent events in Europe. European leaders have been working to put forward a more comprehensive policy solution to address concerns about the capital needs of European financial institutions and the sustainability of the fiscal situation in particular European countries, including Spain and Italy. The news about these policy actions and the associated shifts in investor sentiment have been the most important factors affecting broader financial markets over the intermeeting period.

Steve Kamin will review the policy announcements that have been made to date. I will simply note that they have fallen short of offering many of the details that will be critical to their success. Nevertheless, markets were apparently reassured by the willingness of European policymakers to consider comprehensive policy actions, leading to considerable gains in the prices of risky assets ahead of and immediately after the announcements. As shown in the upper-left panel, equity prices increased sharply, with the S&P 500 index gaining nearly 7 percent through last Friday. European markets turned around even more aggressively, with the Euro Stoxx index gaining nearly 12 percent over the period. However, the tone has turned negative in recent days, including the sharp selloff in markets yesterday and today that has reversed a large portion of the earlier gains.

The improvement in risk sentiment had also been apparent in corporate bonds, as shown to the right. Corporate bond spreads widened sharply into October, especially for lower-quality issuers, and issuance slowed markedly. In recent weeks, however, the high-yield bond spread sharply retraced some of its earlier widening, and investment-grade spreads also narrowed.

The reversal of safe-haven flows had unwound some of the appreciation of the dollar that had been observed ahead of the last FOMC meeting. Through last Friday, the dollar had depreciated against a broad set of currencies, particularly those that are more sensitive to global growth prospects. The dollar's depreciation against the yen had been relatively modest, but that movement was enough for Japanese officials to begin intervening again in the dollar–yen currency pair. The Bank of Japan entered the market yesterday at the direction of the Ministry of Finance, executing over \$100 billion of dollar purchases on the day, which weakened the yen about 3 percent. Amid the volatility in recent days, the dollar has been appreciating again, leaving the broad dollar index somewhat stronger over the intermeeting period.

Even though the policy measures announced in Europe were met with a positive initial reception in many markets, they did not put to rest the uncertainties surrounding the situation. One worrisome sign is that sovereign debt spreads for Spain and Italy did not improve meaningfully after the announced policy steps, with Italian spreads actually touching new highs last week, as shown in the middle-right panel. Those spreads have increased further today.

As discussed in the briefing from two weeks ago, these broader market strains have had important implications for short-term funding markets. The situation in funding markets is largely similar to what I described in that briefing. In particular, many European institutions face constraints on their short-term funding in both euros and dollars, with limited access or high costs for funding at maturities beyond the very near term. By comparison, most U.S. institutions have not faced constraints on term funding to the same degree as European firms. As shown in the bottom-left panel, the spread of the three-month U.S. LIBOR rate over OIS has continued to edge higher, but a forward measure of this spread has been holding fairly steady.

Moreover, some of the concerns about particular U.S. institutions that had intensified in September and early October have eased in recent weeks. As I had previously noted, investors became focused on the vulnerabilities of several firms with large trading operations and a heavy reliance on short-term wholesale funding, including Morgan Stanley and Goldman Sachs. However, sentiment toward those firms has improved in recent weeks, as reflected in the sharp narrowing of the CDS spreads in the lower-right panel. In response to the earlier pressures, U.S. financial firms had stopped issuing longer-term unsecured debt, but in recent weeks we have seen them step back into this market, albeit at higher rates than were available several months ago. Overall, financing conditions for U.S. financial firms do not appear to be deteriorating, but a number of uncertainties remain that warrant close monitoring.

Your final exhibit focuses on recent Desk operations and the evolution of the SOMA balance sheet. The Desk has been implementing the range of policy decisions that the FOMC made at its September meeting. In particular, we have begun the Treasury purchases and sales associated with the maturity extension program as well as the MBS purchases associated with the shift in the reinvestment strategy.

To date, the Desk's operations in these areas have proceeded smoothly, and there are no signs that our activity is having detrimental effects on market functioning. Liquidity in the Treasury market has held steady, as indicated by the measures of the cost of transacting in Treasury securities shown in the upper-left panel. Similarly, liquidity in agency MBS markets has remained quite good, with a substantial majority of our transactions taking place at prices below the indicative offer prices shown on Tradeweb.

These outcomes are encouraging, especially considering the magnitude of our operations in these markets. As shown in the upper-right panel, our purchases through June 2012 are expected to represent a sizable portion of the gross issuance of Treasury securities and agency MBS over this period.

Going forward, market participants are not convinced that the balance sheet policies currently being implemented will be the final steps toward monetary policy accommodation. Instead, as shown in the middle-left panel, respondents to the primary dealer survey see about a 50 percent chance that the FOMC over the next year will implement a further increase in the balance sheet or change its guidance about the path of short-term interest rates. Considerable odds are also assigned to the possibility of the FOMC offering balance sheet guidance, whereas respondents see a cut in the interest rate on reserves or a further extension of SOMA duration as unlikely. Respondents do not place high odds on any policy actions occurring at this meeting.

The panel to the right shows the primary dealers' projections for the path of the SOMA balance sheet. The median survey response has the balance sheet remaining at its current size and then beginning to decline gradually in 2014—a path that turns down only slightly in advance of the assumptions made in the Tealbook. However, as can be seen from the 25th and 75th percentiles, the distribution of expected paths is skewed to the upside, as more market participants anticipate an expansion of the balance sheet over the next several years than an early decline in the balance sheet.

Lastly, I want to highlight two other important developments regarding recent operations by the Desk. The first of these is a structural change to our euro reverse repurchase agreement portfolio. The Desk conducts reverse repurchase agreements in euros using the sovereign debt from six countries as collateral, including Germany, France, the Netherlands, Belgium, Spain, and Italy. As you may recall from an earlier memo to the FOMC, the approach that had been in place did not differentiate across this collateral in terms of the rates that we accepted for lending funds. Because the market has increasingly differentiated the funding rates for this collateral, the Desk was receiving increasing proportions of Spanish and Italian debt in its operations.

Last week, we began to implement our new approach of accepting rate offers that are specific to each of the six types of collateral. The results from our first operation are shown in the bottom-left panel. As can be seen, the offers that we received demonstrated notable differentiation across the collateral types, with market participants willing to pay more to fund Spanish and Italian securities. This new approach will allow us to be more confident that the Desk is receiving fair market compensation for the collateral that we accept and will allow us to better control the allocation of this collateral for the SOMA portfolio.

The second recent development to be highlighted involves MF Global. As you know, MF Global experienced a rapid deterioration that led the firm, and the U.S. broker–dealer subsidiary that is a primary dealer, into bankruptcy. In short, investors became skeptical about the viability of the firm given the size of its exposures to European sovereign debt markets, its weak earnings for the third quarter, and the associated downgrades of the firm by several rating agencies. With these events, the firm found itself unable to sustain sufficient financing, even as it attempted to rapidly sell parts of its business and shed assets.

The path of MF Global serves as an example of the vulnerability of firms that are heavily reliant on short-term wholesale funding. As shown in the bottom-right panel, the firm had a narrow equity buffer, and its liability structure was relatively unstable. Indeed, the firm had little longer-term unsecured debt and, since it was not a bank, no retail deposits. Instead, the firm had 61 percent of its liabilities in the form of repo transactions and other trading liabilities. This structure left the firm very susceptible to a liquidity run in response to any emerging questions about its capital adequacy. Of course, this is the same issue that I noted earlier in the discussion of investor concerns about Morgan Stanley and Goldman Sachs. However, as can be seen in the table, Morgan Stanley has a much larger share of long-term debt as well as some retail deposits. The table also shows the figures for JP Morgan to offer a comparison to an institution with a larger banking operation.

The problems experienced by MF Global raised risks to the Federal Reserve through our counterparty relationship with the firm. Our potential exposures were associated with MF Global's participation in our securities lending operations, in our operations in Treasury securities, and in our operations in agency mortgage-backed securities. The Desk began to exclude MF Global from some operations last Wednesday and from all operations last Thursday. Yesterday, the Federal Reserve Bank of New York announced that it had terminated its primary dealer relationship with MF Global.

Heading into the market open yesterday, our only exposure to the firm was from seven unsettled MBS purchase transactions. These transactions, which totaled about \$950 million, were due to settle as far out as mid-January. To limit the risk to the Federal Reserve from these transactions, on Friday we established a special arrangement for the firm to post collateral to us on a daily basis. Based on yesterday's events, we exercised our legal authority to terminate the seven trades, and we conducted trades with other counterparties to reestablish the same positions, using the collateral that had been posted by MF Global to cover the additional expense of those replacement trades. Given these steps, we do not expect to realize any losses from our counterparty exposures to MF Global. Thank you.

CHAIRMAN BERNANKE. Thank you very much. Questions? I'm sorry. President Lacker, do you have a question?

MR. LACKER. Thank you. I have two questions. Brian, as this chart shows, we've been buying a lot more nominals than TIPS, and under the same theory that lengthening our maturity of our portfolio twists the curve, that would also affect the breakeven spreads. Do you think that's happening? And do you have a quantitative estimate of how much?

MR. SACK. It could be happening. We don't have a good quantitative estimate. The reason we include TIPS is we don't want to distort the decomposition of nominal rates into their breakeven and real components. We want to have some presence in that market, and, of course, when we calibrate the pace of purchases or the allocation of our purchases, we look at a variety of measures to try to judge how much we could buy without causing market strains.

Here I'm showing gross public issuance. When you compare it to gross issuance, it looks quite small, but I think we did have some concerns that going too fast could disrupt the markets, since this is a less liquid market anyway and there are a lot of buy-and-hold investors. Having said all that, it's possible we undershot, and indeed there were some commentaries by market participants, such as Barclay's, talking about our programs actually putting downward pressure on breakeven inflation rates.

MR. LACKER. You gave us an estimate of the effect on the 10-year yield, but it would be nice to have an estimate of this as well.

The second question is about Treasury debt issuance plans. Is there anything you can tell us about what you know about their plans for next year and the extent to which they may be contemplating or may have embarked on a path that would to some extent offset what we've done?

MR. SACK. I believe they have not made debt management decisions in response to the effects of our program that would undo our program. They are certainly not looking at rates and opportunistically saying, "Given what the Fed has done to the yield curve, we want to move further out in our issuance." Having said that, they were already on a course that was lengthening the average duration of their issuance, and I think that lengthening will continue over the near term. At one of the recent meetings, we talked about Treasury expecting to be on a

path toward a weighted-average maturity of about 70 months, the market having anticipated that, and I think the discussion at Treasury essentially is not whether to go beyond 70, but whether to stop at 70 or stop somewhat below that.

VICE CHAIRMAN DUDLEY. It's fair to say that we don't think Treasury has adjusted their behavior in response to our behavior. It sounds like that's the key point.

MR. SACK. They're also considering a debt management innovation that would probably reduce the amount of duration that they issue. They've asked the TBAC to consider the appeal of floating-rate securities, which of course would allow the Treasury to reduce rollover risk while not introducing duration into the market. If that were a product that they brought on line and used in any size, that would actually help in terms of keeping duration out of the market.

MR. LACKER. Thank you.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I have a quick question, Brian. In terms of table 18, what would Goldman Sachs look like if we looked at their liability structure?

MR. SACK. I initially had Goldman Sachs on the table. I am contemplating whether to dig through my notes. It looks a lot like Morgan Stanley. I can send you the details. The point is, both Morgan Stanley and Goldman Sachs look different from institutions with larger banking operations in the sense that they both have some retail deposits but much less in the banking operation, and hence they rely more intensively on repo financing. The point of this table is to say that was true for MF Global as well, but of course to a much more extreme degree.

MR. KOCHERLAKOTA. So, long-term unsecured debt would look roughly the same, you think, for Goldman Sachs in terms of percentage?

MR. SACK. I think it would be in the same ballpark now that the figures show.

MR. KOCHERLAKOTA. Thank you.

VICE CHAIRMAN DUDLEY. Deposits would probably be a little less. Their bank is probably a little smaller.

MR. KOCHERLAKOTA. Thanks.

MR. PLOSSER. Mr. Chairman?

CHAIRMAN BERNANKE. I'm sorry. President Plosser.

MR. PLOSSER. I want to follow up with a question that Brian may not be able to answer, but I'm just curious. If I looked at JPMorgan three years ago, before the crisis, roughly what percentage would they have had in repo and trading liabilities—just ballpark? Twice this or 50 percent more or about the same?

MR. SACK. I will have to check on that.

VICE CHAIRMAN DUDLEY. I would guess more, because remember, they bought Washington Mutual, which had a lot of core deposits. The repo books have generally come down over the past couple of years. I would guess more, but I don't think it's so significant that you'd think they were in a very different position.

MR. PLOSSER. Okay. That's kind of where I was.

CHAIRMAN BERNANKE. All right. Let me go to President Fisher.

MR. FISHER. First, I want to congratulate you on handling MF Global the way you handled it. I have a question about that, and I have two other questions. But on this front, any other trip bars that might ensue from MF's failure that you're monitoring in terms of its impact on the system—not the Federal Reserve System, but on the fixed-income markets and on financial stability?

MR. SACK. Yes, there are several areas we're monitoring. MF Global, of course, had essentially a large brokerage unit into futures markets. One area we're watching is whether their customers will experience any period of disruption and confusion about their ability to change positions. There could potentially be odd short-term dynamics for futures markets.

The second area is questions about whether the customers' assets are truly fully there at the institution, and if there were problems in that regard, you could see a loss in confidence in other types of custodial arrangements or intermediaries.

And the third area is whether there would be any consequences for repo financing, not necessarily direct consequences associated with the unwinding of MF Global's positions, but broader concerns about whether repo funding for less liquid assets is as stable as the market had assumed.

I'm sure there are others, but those are three areas that we're watching. Not having the benefit of seeing markets today, but through yesterday, it looked like the markets were not overly concerned with any of those systemic consequences, but that's what we'll continue to monitor.

CHAIRMAN BERNANKE. Vice Chairman, you wanted to add to that?

VICE CHAIRMAN DUDLEY. Yes, just a few things. This is the first significantly sized FCM, futures commission merchant, that's failed in a way that they didn't actually port the customer accounts off smoothly to some other entity. There's a little bit more uncertainty here because it has never happened like this before. In the past, there has always been a smooth transfer of accounts.

The second thing I would say is that it underscores how fast liquidity can dry up for a firm. This is another firm that, while I wouldn't say they were fine a week ago, they didn't look like they were headed to collapse, and a week later they're dead. That is going to reinforce

people's anxiety about firms that are wholesale funded without any obvious lender-of-last-resort support from the central bank. I think as long as other firms stay out of trouble, it's not an issue, but if they get into trouble, people may actually pull back faster as a consequence.

And the third thing, of course, is that this was triggered in part by, as Brian mentioned, European sovereign debt exposure. To the extent that things in Europe deteriorate, other firms are viewed as having exposure to Europe, and that's another aspect of this. But so far we would say, and I think Brian and I would both agree, that the selloff in the market today really has very little to do with MF Global.

MR. FISHER. I would add a fourth factor, which is humility versus arrogance and balanced risk. The principals involved here were extremely arrogant, taking the positions that they had, and were imbalanced in terms of their judiciousness of risks, and I think the markets are well aware of that.

The second area of inquiry I have, Brian, if you look at your chart 1 and chart 8, is with regard to the way Treasuries have moved and the initial way that corporate bond spreads moved—remember those spreads are relative to an increase in the yields as shown in chart 1. Can you separate out for me the Operation Twist impact versus the impact of Europe in terms of influencing the way yields have moved? The question really deals with the efficacy of Operation Twist—and mind you, we're just starting this process—and trying to separate out the seesaw effect and the whipsaw effect of what's happening in Europe.

MR. SACK. Are you specifically raising the question of whether Operation Twist passed through to the private borrowing rates? Or do you—

MR. FISHER. What I care about is whether it passed through to private borrowing rates. That's my priority—how it impacts the market for private debt. Because chart 1 doesn't indicate

what one might have expected, but I care more about what happens in terms of private debt. That should be our objective—affecting the real economy. I am curious as to your judgment at this stage, and mind you, it is initial. And then, how are you able to separate out the seesaw effect we have gotten from the standpoint of enthusiasm over Europe and then sudden disappointment on the details?

MR. SACK. My assessment would be that Operation Twist put downward pressure on Treasury yields, as I said in the briefing. All else being equal, the majority of that would have passed through to private borrowing rates—maybe not the entirety of it, but the large majority of it.

What actually happened on the FOMC announcement was that private borrowing rates did not go down for lower-quality issuers, that spreads widened immediately. But I would interpret that spread widening as more of a reaction to the concerns about the economy and the pessimism that was in the FOMC statement that apparently surprised market participants, rather than a lack of pass-through from the Twist action itself.

It wasn't that Twist only affects Treasuries and nothing else. We do think that arbitrage, all else being equal, would have pulled down the private borrowing rates. You see that in the reaction of the 30-year swap rate. The 30-year swap rate, in terms of credit risk, is somewhat complicated. It does have a credit risk premium in it related to the LIBOR that it is referenced to. It is not the credit risk of lending to a firm for 30 years, but it is essentially the credit risk of promising to lend to a bank that will be in the LIBOR panel for those 30 years. That means it has a much smaller credit risk component than corporate yields. You can look at this and basically, from the relative movement of swaps and Treasuries, assess whether Treasury yield

movements pass through to private rates, all else being equal, and then add on top of that the effects on credit quality.

In terms of assessed credit quality, for sure it has been a seesaw. The market repriced to much wider credit spreads through early October associated with pessimism about the economy and concerns about risks emanating from Europe. It is the same pattern we saw with the financials and their CDS spreads, and so on. Then, as sentiment improved—which was the old theme of the briefing, as Europe seemed a little better and the data came in—that is really what led to a substantial narrowing of the corporate bond spreads. But my guess is, as we seesaw here, if this pessimism we have seen in the past two days persists, we will again start to see some upward pressure on corporate yield spreads.

MR. FISHER. Thank you. And then, one last quick question. Do we know why the Norwegians liquidated their MBS portfolio entirely on Friday?

MR. SACK. No, I don't. We didn't run down that story.

MR. FISHER. It might be interesting to get as much as we can. They are running a \$500 billion plus sovereign fund. They do interact with the central bank. I haven't seen an explanation yet as to why they would liquidate their entire MBS portfolio. If you can just follow up, I would be very grateful.

MR. SACK. Yes, that would be very easy for us to ask about. We just haven't done it yet.

MR. FISHER. Thank you.

MR. EVANS. I thought you spoke Norwegian.

MR. FISHER. They didn't explain it in Norwegian or English. [Laughter]

CHAIRMAN BERNANKE. Governor Duke.

MS. DUKE. My question goes back to the impact on customers of MF Global, and this question may not make sense because I wasn't sure I understood the article I read just before I came in here. But it was something about either clearinghouses or exchanges freezing customer transactions, customers of MF. And then, I was remembering how some of the people who came through here were really unhappy in the Lehman bankruptcy about their collateral getting tied up in pieces. Is there anything in moving derivatives to central counterparties that we should be aware of in connection with this?

MR. SACK. That is related to one of the three broad concerns I talked about: Would there be uncertainty about the client's ability to change positions? Would there be confusion about what the status of their assets was or not? And as Vice Chairman Dudley mentioned, without the quick transfer of the client accounts, it leaves this uncertainty. I don't know enough about the legal arrangements to answer the questions you raise. But how long that will take and how transparent it will be in terms of when the customers will be able to reaccess their positions is one of the big areas of uncertainty here.

VICE CHAIRMAN DUDLEY. SIPC is on the case now as a trustee, so they are trying to manage these accounts. But I think there is definitely some freezing of assets and people not being able to execute this stuff.

MR. TARULLO. It's CFTC rules, though, right?

VICE CHAIRMAN DUDLEY. FTC rules on it for the FCM. And they were not a big firm, about \$40 billion or \$45 billion in assets, but they were very big in the commodities space.

MS. DUKE. Is there anything in that that would cause potential customers of, say, Morgan Stanley not to want to be customers of Morgan Stanley for just that reason?

VICE CHAIRMAN DUDLEY. I think this is probably viewed as a pretty idiosyncratic case. But, like I said before—wholesale funding model, dependence on repo, exposure to Europe—our base case is that the contagion channel should be small, but there is some risk. Brian, would you agree with that?

MR. SACK. Right, exactly. You have these relationships not only at FCMs but also through prime brokers, and so on. When we saw some of the pressure on the financials, such as Morgan Stanley, through early October, there was a lot of focus on the prime-brokerage relationships. We talked to some hedge funds who were actually trying to figure out how to hedge those exposures, so generally, that is a piece of the story about stress at any institution.

VICE CHAIRMAN DUDLEY. If you feel we are going in the right direction rather than seeming to go in the wrong direction in terms of market sentiment, you would probably be less nervous about this.

MR. TARULLO. But, Bill, when you said it was idiosyncratic, did you mean idiosyncratic to the underlying problems at MF Global?

VICE CHAIRMAN DUDLEY. Yes.

MR. TARULLO. But in answer to Betsy's question, were another firm that was a commodities merchant to get in trouble, there is no reason to expect that the exchange treatment of collateral would be different for them than it was in this case, right?

VICE CHAIRMAN DUDLEY. What was unusual in this case was the fact that in the segregation of the customer accounts there was a shortfall, and that is gumming up the works, in a different way than you would expect in a normal case.

MR. TARULLO. Are those the same accounts, or was the action on the Chicago Mercantile independent of the private customers' accounts?

VICE CHAIRMAN DUDLEY. I don't know. I think there was a press report about the CME saying that they were aware of problems with the customer—

MR. TARULLO. So maybe it is related.

VICE CHAIRMAN DUDLEY. —segregated assets, but I don't have any details on that.

MR. TARULLO. If it is related, then it is purely idiosyncratic. If it's not related, then it gets to the way they conduct themselves.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Just to continue on the question of MF Global, a couple of weeks ago, as you see on chart 12, there was—and I hesitate to call it a “run” —but certainly a lot of pressure on Morgan Stanley and Goldman Sachs, which has eased. Then, we get the first casualty with MF Global. My broad question, Brian, is: Are you more or less concerned about financial instability now than two weeks ago? How is that trending?

MR. SACK. At best slightly more comfortable, but actually probably about the same. As I noted, what happened a few weeks ago with Morgan Stanley and Goldman Sachs was the same dynamic. Taking Morgan Stanley as an example, based on their discussions about the firm's exposures, I think market participants weren't convinced that the firm actually had problematic exposures, but what they were convinced about was the fact that if the market got too concerned, they could put Morgan Stanley out of business because of their reliance on short-term funding markets. I think that contributed a lot to the jitters that emerged in early October, and it is the same dynamic that ultimately brought down MF Global. But I do want to emphasize that MF Global is a very different case than a Morgan Stanley, in terms of the aggressiveness—relative to its size—of how MF Global was positioned.

MR. LOCKHART. But their reliance on short-term funding is a lot different, too.

VICE CHAIRMAN DUDLEY. Yes. Morgan Stanley, we believe, has a very large liquidity cushion. The MF Global experience showed you that whatever liquidity cushion you have can run off a lot faster than you expect. Morgan Stanley is starting with a much better balance sheet than MF Global was, and they have been actually earning money. One of the precipitating events for MF Global was that they took a very large loss in the most recent quarter. That was really what started this thing spinning last Tuesday.

MR. LOCKHART. Do you see any dynamic of predatory market players essentially gaining any victory with this one and moving on to the next most vulnerable?

MR. SACK. No.

MR. LOCKHART. No, we don't see anything like that?

VICE CHAIRMAN DUDLEY. I don't think this was about people shorting the CDS and driving down the stock price. This is all about the fundamentals of the company; that would be my opinion.

CHAIRMAN BERNANKE. I've got President Bullard and President Lacker.

MR. BULLARD. Thank you, Mr. Chairman. On MF Global—it became a primary dealer this year, is that correct?

MR. SACK. Right.

MR. BULLARD. Are we happy with our expanded criteria for primary dealers? And does this give you any pause about that new, more expansive definition?

MR. SACK. The new primary dealer policy just increases the transparency about the requirements. There was no reduction in the requirements to be a primary dealer. When we look at the primary dealers as candidates, there is an extensive review. It covers quality of management, the quality of their systems, their financial health, and so on. But we are at a

disadvantage. We are not a supervisor of this firm. There is a credit review. They passed the credit review. But that doesn't guarantee that they can't go downhill. As we see in the market price and everything, they went downhill very quickly and very unexpectedly.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Yes, a question about MF Global, and then I want to follow up on a question from President Fisher. MF Global is insolvent, I take it? Is that our best information?

VICE CHAIRMAN DUDLEY. I don't think we know whether they are insolvent or not. We know they can't meet their obligations, but that doesn't mean when they are all liquidated that the value of the assets couldn't be a lot greater than the value of the liabilities. We don't know that. The fact is that their long-term debt, which they have a small piece of, is trading at about, last time I saw, in the 35 to 45 percent per dollar range, which suggests that the market thinks that they are most likely to be insolvent. But we are not going to know for a while.

MR. LACKER. Okay. Do you view how it has played out as inefficient ex post?

VICE CHAIRMAN DUDLEY. It was inefficient in the sense that there was not an orderly bankruptcy process. It would be much better if there had been a way to move the customer accounts to new firms, so that they didn't get trapped. It was messier than optimal. Is it systemic or not? Fingers crossed, we hope not.

MR. LACKER. About Richard Fisher's question about corporate debt spreads—this actually came up at the last meeting. We are operating under this habitat theory, and there is this question: Is 10-year corporate debt in the same habitat as 10-year Treasuries? Or is it in a separate habitat, and its yield doesn't move? And the data look like it is in a separate habitat, but you are saying that there was some offsetting move and some expectation.

MR. SACK. Right, that's what I'm saying. Equity prices went down sharply on the FOMC announcement. If the story were just a preferred habitat, so that Operation Twist only affected Treasuries and didn't affect corporates and that explained the widening of spreads, that alone wouldn't cause a big decline in equity prices. Clearly the market read the FOMC statement as more pessimistic than expected and repriced equities and corporate bonds accordingly.

MR. LACKER. The question I want to ask is about 2-year versus 10-year corporates. Do you view the impediments between those two markets as similar to the impediments between 2-year Treasuries and 10-year Treasuries? Or are they in the same habitat? And, in particular, does the fact that a corporation can operate in its own debt make it different from Treasuries? And would that short-circuit the effect you want to have on the shape of the yield curve in the Treasury market?

MR. SACK. I would argue that what we have seen from the experiences with the Federal Reserve policies is that there clearly is preferred habitat across the Treasury curve, across maturities. I would imagine that, to a large degree, you would see some of that preferred habitat pass through on the corporate side as well. I wouldn't view corporates as a single asset class where duration doesn't matter. Are you asking if the degree of market segmentation is greater in Treasuries than in corporates across maturities? That is a bit harder.

MR. LACKER. The intuition in habitat theory is the costliness or riskiness of arbitrage. A corporation can scoop up its own debt pretty easily.

MR. SACK. Right. Maybe I'm missing the connection there, but—

MR. REIFSCHNEIDER. Another way of saying it is in the Treasury market we expected there to be a twisting of the yield curve; we weren't particularly surprised that the two-year

yields went up a little bit and then the longer-term yields came down. *Ceteris paribus*, we would have expected to see a similar effect in the corporate bond market for the same reasons. I don't know if they did, but if two-year corporates did go up, that wouldn't be at odds with what we expected. Whereas, we would have expected 10-year corporates that have—

MR. SACK. I'm not sure what the corporate arbitrage is here. I don't think there is an incentive for them to equalize their corporate yields across the yield curve or something, if that's what you mean.

CHAIRMAN BERNANKE. I wonder if there is a constituency for taking a vote on domestic open market operations. [Laughter] Without objection. It is 3:15. Let's take 20 minutes for coffee. Thank you.

[Coffee break]

CHAIRMAN BERNANKE. Why don't we recommence. The next item on the agenda is the economic situation, and I will call on David Wilcox.

MR. WILCOX.³ Thank you, Mr. Chairman. I'll be referring to the first exhibit in the package called "Forecast Summary."

A long time ago, when I was sitting at the breakfast table this morning [laughter], I was reminded once again of the value of a supportive home environment. One of my daughters attempted to bolster my confidence by helpfully observing, "Just keep in mind, Dad, that they're much more likely to remember you today for whether you're wearing a good tie and whether you've got any good jokes to tell. At least Mom has picked out a good tie for you." [Laughter]

In a departure from recent practice, the outlook for real activity that we provided you in the Tealbook last week was not a marked downgrade of its immediate predecessor. Indeed, as Bob Tetlow discussed in his briefing for the Board yesterday, most of the spending indicators that became available during the intermeeting period surprised us to the upside. The favorable news included better-than-expected retail sales in September and a stronger report on orders and shipments of capital goods in August, and even some surprising further signs of life in the nonresidential construction sector.

³ The materials used by Mr. Wilcox are appended to this transcript (appendix 3).

In response to this news, as shown in the upper-left panel of the “Forecast Summary” exhibit, the Tealbook forecast that we put to bed last Wednesday showed slightly stronger growth of real GDP over the second half of this year and the first quarter of next year than we anticipated in our September forecast.

On the surface, last Thursday’s GDP release also looked like it might be mildly encouraging of a little greater momentum in the recovery. At 2½ percent, the headline number was a shade weaker than we had forecast in the Tealbook, but the estimated increase in final sales was considerably stronger than expected, while inventory investment was lower—a mix that oftentimes in the past has augured well for near-term production prospects.

As is shown in the upper-left panel, however, we did not mark up our medium-term projection in the Tealbook and would not be inclined to do so in response to the news in the GDP release either. A fair question is why not.

Let me proceed in reverse order, beginning with the GDP release. Part of the upside surprise in final sales was in federal purchases—a source of strength that we think, for obvious reasons, has no staying power. More fundamentally, however, Thursday’s report showed a much lower level of disposable personal income in the third quarter than we had expected in the Tealbook. While we think some of that downside surprise might be transitory, we’re estimating that perhaps half of it might persist, a factor that caused us to temper the extent to which we extrapolated forward the recent strength in consumption spending.

Moreover, the broader pattern of the available data suggests to us that maintaining our medium-term outlook is the best approach for now. The spending data provide a little brighter perspective on the underlying state of the economy; at the moment, however, other perspectives are not as encouraging. For one, the labor market still shows no signs of an appreciable pickup. As shown in the bottom-left panel of the “Forecast Summary,” the three-month moving average of private payroll employment gains has backed off considerably from the pace that was evident around the turn of the year; initial claims for unemployment insurance continue to hover just north of 400,000—a level consistent with only modest employment gains in the next few months—and job openings and help-wanted advertising have edged lower in recent months. Likewise, the data on industrial production are less suggestive of strength than they might first appear. Overall manufacturing IP increased more than 4 percent during the third quarter, but a chunk of that gain seems to have reflected a recovery from the supply chain disruptions that stemmed from the earthquake in Japan. While we cannot parse the upstream effects of the rebound in motor vehicle production with any precision, we think that IP outside of motor vehicles and related upstream industries decelerated noticeably during the third quarter and is likely to maintain that slower pace during the fourth quarter.

A range of “soft” indicators remain remarkably downbeat. Most soberingly, as shown in the lower-right panel of your exhibit, consumer sentiment—whether measured by the University of Michigan or the Conference Board—has sunk once

again to the severely depressed levels it occupied during the most intense phase of the financial crisis.

Finally, the factors we treat as conditioning variables are, on net, a little less supportive of growth now than they were at the time of the September projection: the dollar is a little higher; oil prices have moved up somewhat—especially the prices of imported grades; and risk spreads had widened a bit as of the middle of last week. In addition, the net movement in equity prices from Tealbook to Tealbook was small. Since last Wednesday's close of the Tealbook, financial market conditions have remained unsettled. Given the volatility of the past two days that Brian noted, I would hesitate to draw any inferences for the economic outlook at this juncture.

All told, therefore, we are inclined to brighten our assessment of the prospects for economic activity only a little in the near term, and not at all in the medium term.

With the basic contour of the medium-term projection unrevised, we continue to anticipate a recovery that is subpar by historical standards, with the unemployment rate still above 8 percent at the end of 2013. As you can see from the middle-left panel in the summary exhibit, the trajectory for the unemployment rate in our current projection is virtually indistinguishable from the one we showed in September, though I would hasten to add that this may be an aspect of the forecast with a particularly short shelf life, pending Friday's release of labor market data for October.

As we noted in the Tealbook, the gap in resource utilization remains wide. We estimate that the unemployment rate is about 2½ percentage points above the short-run effective NAIRU today. By the end of 2012, in our baseline projection, the unemployment rate will have come down about a percentage point, but half of that, we estimate, will have reflected the expiration of the emergency unemployment compensation programs. As a result, the unemployment rate gap is still 2 percentage points in the baseline projection at the end of 2013.

We think that there are a number of good reasons for expecting the pace of recovery to remain subpar by historical standards. The housing sector—often a locomotive of recovery after previous recessions—remains moribund today due to the oversupply of houses, a huge backlog of homes in the foreclosure process, the prevalence of underwater mortgage borrowers, and fears of further price declines—factors that we think are unlikely to dissipate quickly. Access to credit remains restricted. As Kathleen Johnson showed in her briefing yesterday, a stunning number of banks are not offering mortgages to households with even the slightest blemishes on their credit histories, despite the fact that mortgages extended to such borrowers would be eligible for sale to the GSEs. A similar segmentation seems to prevail in the market for credit cards as well. In the baseline forecast, we assume that credit access improves only gradually from here forward. Pessimism appears likely to remain a factor as well. Although households and firms have solid reasons to be pessimistic and uncertain about the future—dismal job prospects, the situation in Europe, and unresolved fiscal problems at home, to name a few—their malaise may also, to some extent, be a self-fulfilling prophecy. An additional factor slowing the

recovery is the fiscal position of state and local governments. These governments continue to face severe budget pressures that have forced them to cut back on their spending and workforces, and we expect these pressures to ease only slowly.

A key consideration in gauging the likely speed of recovery is the health of financial institutions. Banks and the shadow banking sector face severe challenges even absent further shocks, and these challenges appear to have intensified over the course of the year. Given the weaker economic outlook, the flatter yield curve, and the prospect that shorter-term interest rates will remain near zero for some time, financial institutions' ability to earn their way to higher capital ratios now appears to be noticeably more limited than it did earlier this year.

Another factor that we have wrestled with, and that Governor Raskin noted in a recent speech, is the possibility that the current settings on the monetary dials may be generating less support for real activity than would normally be the case. For example, the restricted access to credit probably means that many households and bank-dependent firms cannot take advantage of low interest rates to the degree that they would have prior to the recession. And heightened uncertainty about the outlook has probably decreased the responsiveness of all forms of investment, including outlays for consumer durable goods, to low interest rates.

Although we suspect that the force of monetary policy is attenuated at present, we also think that it is not blunted entirely. In particular, we hope and suspect that the stimulus imparted by monetary accommodation through increases in wealth and the depreciation of the dollar is probably about normal at present, and these two channels are important. In FRB/US, for example, they account for roughly two-thirds of the overall stimulus provided by an easing in the stance of monetary policy. In the case of depreciation effects, the recent declines in the foreign exchange value of the dollar have clearly stimulated production in the manufacturing sector, and further depreciation would presumably raise global demand for U.S. products even more.

The remaining one-third—the direct response of spending to changes in interest rates—may not be working with its usual force, but it is not entirely shut down either. Credit access may be restricted for many households, but it should not be impeding the spending response to low interest rates of relatively affluent households. And even for less well-to-do households, credit does seem to be available to support the purchase of motor vehicles, so they too are probably responding to low interest rates at least to this extent. Moreover, a limited number of households have been able to refinance their mortgages and so improve their monthly cash flow, even if many others have been prevented from doing so.

Down the road, we expect that some of the attenuation in the monetary transmission mechanism will reverse itself endogenously as the recovery gradually proceeds. In the absence of further adverse shocks, uncertainty about the outlook should diminish. We continue to think that the financial accelerator will someday kick in in a favorable way, with improved balance sheets and reduced uncertainty feeding the willingness to lend of financial institutions, improved confidence of

households and businesses leading to increased spending and hiring, and a stepped-up pace of activity bolstering the condition of the financial sector and easing the strains on state and local governments.

But we think that all that is likely to be a process measured in years, not quarters. In the meantime, you all will face the difficult question as to whether the possibility that policy may be attenuated today implies that you should adopt an even more aggressive posture or stay your collective hand.

On the inflation front, I have relatively little news to report. As you can see from the upper-right and middle-right panels in the summary exhibit, our medium-term projection is essentially unrevised from the September meeting, both for overall PCE inflation and for the core. I will just briefly touch on two developments in the past few months in this regard. First, the anticipated deceleration in import prices now is more decisively evident in the data. Core goods import prices increased 2½ percent at an annual rate in the third quarter, in line with our September projection, down from 7¼ percent in the second quarter. Partly for that reason, we think, core PCE prices also have decelerated. Indeed, last month, the three-month change in core PCE prices converged back down to its rate of change over the past 12 months, with both coming in at about 1½ percent. In other words, our outlook for core PCE inflation survived the two price releases since the September meeting broadly intact.

The other point I would highlight has to do with energy prices. We marked up our near-term projection for retail energy prices for two reasons. First, crude oil prices came in a little higher than we had expected, especially for imported grades of crude. Second, we have now taken on board the likelihood that the unusual oil supply conditions prevailing in the midsection of the country are likely to persist for longer than we had previously assumed. If our revised assessment is correct, the prices of retail energy products like gasoline are more likely to be effectively keyed off of higher-priced imported grades of crude for the next quarters than we thought earlier. This adjustment to our forecast for energy prices accounts for the small upward revision to our forecast for topline PCE prices in the first quarter, shown in the upper-right panel. Steve Kamin will continue our presentation.

MR. KAMIN. I will not be referring to charts. Last week, even as millions of children were eagerly anticipating Halloween, Christmas came early for equity investors. Santa left them a package of new measures to address Europe's fiscal crisis, beautifully wrapped in shiny paper bearing the seals of the 17 euro-area nations. Once the package was unwrapped, however, it turned out that a lot of additional assembly was required, many parts were missing, and no one was sure whether, once the whole thing was put together and plugged in, it would work at all. In fact, this week's market movements suggest people are becoming more convinced that it won't.

The announced package contained three main elements. First, in order to bring down Greece's debt burden to sustainable levels, representatives of private creditors have agreed in principle to participate in a debt exchange that would reduce the face

value of their claims by 50 percent, a much larger haircut than the 20 percent agreed to in July. This would open the door for a new loan package for Greece, to be provided by European countries and the IMF, which would provide critically needed financing until 2014.

Second, having failed to assuage market concerns about European banks in July, when the authorities released a stress test requiring almost no increases in capital, European leaders have now agreed to more stringent standards. These include a demonstrably higher minimum capital-to-asset ratio and a marking-to-market of bank holdings of sovereign debt. Preliminary reports suggest banks will be asked to raise a little over €100 billion in additional capital, with banks failing to raise these funds by June of next year being forcibly recapitalized by national governments.

Finally, European leaders announced two complementary approaches to what is arguably their most urgent task, providing financial backstops to vulnerable European governments—especially Italy and Spain—to protect them from market contagion. One scheme involves the European rescue facility, the EFSF, providing the resources to guarantee a fraction—perhaps 20 to 25 percent—of the value of new government bonds. In the other scheme, the resources of the EFSF would be used to take a first-loss position in a special purpose vehicle, or SPV, that would seek financing from investors—including sovereign wealth funds from China and the Middle East—and channel it to borrowing governments. In either case, the intent of European leaders, having rejected both an enlargement of the EFSF and direct use of the ECB as a lender of last resort to governments, is to leverage less than €300 billion in the EFSF's uncommitted resources into over €1 trillion in new lending capacity.

As Brian discussed earlier, that the European leaders were able to agree at all on these measures came as a pleasant surprise to many observers, as it provided hope that the leaders were taking their predicament more seriously. However, the next several months present a series of risk events as European authorities attempt to implement their proposals. The first such event unexpectedly materialized last night, when the Greek prime minister announced a parliamentary confidence vote in his government and popular referendum on the loan package, putting the plan in jeopardy and causing European markets to plunge this morning. Looking a bit further down the road, the haircut on Greek debt is intended to be achieved through a voluntary bond exchange, partly in order to avoid triggering credit default contracts, but it is questionable whether the deal will attract sufficient participation. By the same token, many details of the financial backstop plans remain to be worked out, and the participation of sovereign wealth funds from China and the Middle East seems mainly wishful thinking at this point.

A second and more worrisome concern is that, even if the plan announced last week is fully implemented, it may well fail to quell market pressures. Even under the European authorities' optimistic scenario, Greece's net debt remains above 120 percent of GDP for the rest of this decade, and servicing that debt burden will require continued draconian fiscal austerity measures. Thus, Greece may well fail, again, to meet its performance goals and threaten renewed default. Were such an

event to trigger renewed flight from risk, it is doubtful that the new financial backstops announced last week would suffice to protect Italy or Spain. These arrangements might guarantee only a quarter to a third of the value of new bonds issued by vulnerable governments, and in the midst of a financial panic, that may be entirely inadequate to attract investors.

Accordingly, with observers well aware of these concerns, the most likely scenario is that markets will remain jittery and funding restricted for some time to come. This distasteful outlook is reinforced by the fact that, in response to financial strains and the additional budget cutting that those strains have engendered, the euro area's economy has weakened even further in recent months. Banks have tightened lending standards, measures of manufacturing activity have deteriorated, and business and consumer confidence have slid sharply. We now expect euro-area GDP to contract slightly this quarter and next—a markdown of 1 percentage point from our September forecast—before edging up to a still-tepid 1½ percent pace by 2013. This miserable performance should keep unemployment firmly above 10 percent and, by making it even more difficult for economies to meet their fiscal targets, continue to keep markets on edge.

Outside of Europe, the economic picture is brighter but by no means exuberant. Aggregate foreign GDP growth rose from only 2¼ percent in the second quarter to an estimated 3½ percent in the third, but that acceleration owed exclusively to Japan's recovery from its March earthquake and the associated restoration of global supply chains. Recent data have been mixed. Japan's economy has bounced back more quickly than we had anticipated; Chinese GDP grew 9½ percent in the third quarter, well above expectations; and the Canadian economy also expanded briskly. However, third-quarter GDP growth appears to have moved down in some other countries—notably Korea and Brazil—and the scant data for the current quarter are fairly subdued.

All told, we now estimate that aggregate foreign GDP growth will fall back to 2¾ percent in the current quarter, reflecting the contraction in euro-area GDP, the effects of this contraction on the export sectors of other countries, and the completion of the bounceback of global production from the Japanese earthquake. Going forward, projected foreign growth edges back up to nearly 3½ percent by 2013 as Europe's economy regains its footing and U.S. activity accelerates.

With the global economic outlook remaining relatively subdued, non-fuel commodity prices declined further since your last meeting. By contrast, crude oil prices in the spot market moved up a bit, but this was mainly in response to tighter inventories, and oil prices remain below their earlier peaks. Thus, even as 12-month headline inflation rates moved up in September to 3 percent in the euro area and over 5 percent in the United Kingdom, quarter-to-quarter rates of inflation in these and other advanced economies continued to move down from their highs at the beginning of the year. In the EMEs, a similar downtrend in inflation was interrupted in the third quarter by rising food prices in some countries, but this uptick should prove transitory, and we expect further disinflation in the region going forward.

Amid diminishing inflation pressures and economic growth that is too slow to significantly erode resource slack, several major central banks announced further stimulus measures during the intermeeting period. The Bank of England expanded its asset purchase program by £75 billion (or 5 percent of GDP), while the Bank of Japan expanded its program by ¥5 trillion (or 1 percent of GDP). The ECB held its policy rate constant at 1½ percent but announced additional purchases of covered bonds and brought back auctions of one-year money. In the EMEs, the pace of monetary tightening has clearly diminished in the face of concerns about weak global growth—notably, Brazil lowered its policy rate by another 50 basis points over the intermeeting period, even as 12-month inflation breached 7 percent.

Against the background of weak foreign economic growth, exports grew at only a 4 percent pace during the second and third quarters. Import growth has been running even slower, however, so net exports made a small positive contribution to U.S. GDP growth of about a quarter of a percentage point. During the next two years, we expect export growth to step up to an average of nearly 7 percent, in part as foreign growth firms; the dollar also supports export growth, as even after rising a bit over the summer, it remains well below its values in recent years. In consequence, the contribution of net exports to U.S. GDP growth rises slightly next year, but this contribution dwindles in 2013 as the pickup in the U.S. economy leads to faster imports.

Deborah will now continue our presentation.

MS. LEONARD.⁴ I will be referring to the package labeled “Material for Briefing on FOMC Participants’ Economic Projections.”

Exhibit 1 depicts the broad contours of your current projections for 2011 through 2014 and over the longer run. As shown, you now see real GDP growth—the top panel—to be appreciably slower this year than its pace in 2010 and then to pick up gradually through the end of the forecast period. The unemployment rate—shown in the second panel—declines slowly over the next three years, yet remains notably higher than your estimates of its longer-run, mandate-consistent level. With regard to inflation—the bottom two panels—the central tendency of your projections for PCE inflation indicates a sizable, but transitory, increase this year before settling back down next year and remaining at levels roughly consistent with, or slightly below, your estimates of its longer-run, mandate-consistent level. Your projections of core inflation generally remain at or somewhat under 2 percent over the forecast period.

Exhibit 2 reports summary statistics regarding your projections for 2011. Your previous projections, collected in June, are shown in italics, and the current and June Tealbook projections are included as memo items. The central tendency of your current projections for real GDP growth this year, shown in the first column in the top panel, is 1.6 to 1.7 percent, down more than 1 percentage point from your projections in June. As shown in the middle column, you now judge there to have been

⁴ The materials used by Ms. Leonard are appended to this transcript (appendix 4).

considerably slower real GDP growth in the first half of 2011 than you or the staff had previously thought, in large part in reaction to the BEA's annual benchmark revisions and the second-quarter data that were published after you submitted your June projections. That information, together with subsequent data on economic activity that were softer than you expected in June, led you to lower your implicit projections for GDP growth in the second half of this year. As shown in the third column, the central tendency of your second-half projections is centered on 2½ percent, down from about 3¼ to 3½ percent in June. As shown in the second panel, the central tendency of your projections for the unemployment rate in the current quarter moved up to about 9 percent, versus just over 8½ to almost 9 percent in June.

Your expectations for overall and core PCE inflation are summarized in the bottom two panels. The central tendency of your projections of overall inflation in the second half of this year, shown in the right-hand column of the third panel, is now significantly higher than in June; the central tendency of your projections of core inflation, shown in the bottom panel, also moved up but by less.

Exhibit 3 reports the central tendencies and ranges of your projections for 2012 through 2014 and over the longer run. You generally see a weaker recovery in real activity and labor market conditions in 2012 and 2013 than you did at the time of the June meeting, but your forecasts for inflation have not significantly changed on balance. In your forecast narratives, many of you indicated that these revisions were the result of this year's disappointing economic data, as well as a reassessment of the strength of the headwinds facing the recovery. These forces include fiscal contraction at all levels of government, ongoing deleveraging of household balance sheets, depressed housing markets, weak consumer and business sentiment, and uncertainties associated with the European situation and domestic tax and regulatory policies.

As reported in the top panel, most of you now expect GDP growth next year to be between 2½ and 3 percent, followed by increases of 3 to 3½ percent in 2013 and of 3 to 4 percent in 2014. The Tealbook projections are within your central tendencies, but they show a somewhat larger acceleration over the course of the forecast period. Your write-ups indicate that you expect the expansion to be supported by accommodative monetary policy, declining risks of a tail event, reduced commodity cost pressures, strengthening household balance sheets, improving financial and credit conditions, and exports.

Your unemployment rate projections are summarized in the second panel. Reflecting the currently elevated level of the unemployment rate and your weaker projections for economic growth, nearly all of you raised your forecast for the average unemployment rate in the fourth quarters of 2012 and 2013. The central tendency of your projections for 2012 runs from 8½ to 8¾ percent, and most of you now project that the unemployment rate will remain centered around 8 percent in late 2013, about ¾ of 1 percentage point higher than your previous projections. The central tendency of your forecasts for the unemployment rate at the end of 2014 is 6¾ to 7¾ percent—still well above your estimates of the unemployment rate that

would prevail over the longer run with appropriate monetary policy and in the absence of further shocks (shown in the far right-hand column). The revisions to the Tealbook forecasts of the unemployment rate over the projection period were roughly similar to those you made.

Turning to inflation—the bottom two panels—the central tendencies and the ranges of your projections for total PCE inflation in 2012 and 2013 changed little. Most of you anticipate that headline inflation will fall back from the somewhat elevated level seen this year to levels between about 1½ and 2 percent in each of the next three years. The step-down in your forecasts reflects the further waning of temporary factors that boosted inflation earlier this year—including higher commodity prices and supply chain disruptions related to the events in Japan. In addition, a number of you reported that you expected an extended period of economic slack to restrain inflation. The low ends of the central tendencies for 2012 to 2014 are a bit below the central tendency of your estimates of the longer-run, mandate-consistent inflation rate. The central tendencies of your core inflation projections for 2012 through 2014 are about the same as those for headline inflation, as most of you see the effects of the rise in commodity prices earlier this year dissipating. However, the top end of the range of your projections of headline inflation is as much as ½ to ¾ of 1 percentage point higher than the top end of the central tendencies, suggesting that a few of you have significant concerns about the possible effects of commodity prices on headline inflation over the projection period. The Tealbook forecasts for both total and core inflation in each of the next three years are at the lower end of your central tendencies.

The central tendencies of your longer-run projections—detailed in the column to the right—show that over time, the annual rate of increase in real GDP is expected to converge to just under 2½ to 2¾ percent. The unemployment rate is generally expected to settle between 5¼ and 6 percent, a somewhat higher upper bound than projected in June. Your longer-run projections for total PCE inflation suggest that most of you see PCE inflation between about 1¾ and 2 percent as consistent with your dual mandate, the same as in your last projections.

The final exhibit summarizes your assessments of the uncertainty and risks that attend your projections. As indicated in the four panels on the left-hand side, a sizable majority of you continue to judge that the levels of uncertainty associated with your projections of real GDP, the unemployment rate, and inflation are greater than the average levels that have prevailed over the past 20 years. Your narratives highlighted developments in Europe and the unprecedented nature of the current economic cycle and extraordinary monetary policy accommodation as factors contributing to this uncertainty. Of note, a few of you raised your assessment of the level of uncertainty associated with projections of real GDP growth since June; in contrast, a couple of you downgraded the level of uncertainty associated with headline inflation from “higher” to “broadly similar.”

The panels on the right-hand side illustrate the balance of risks associated with your projections. On net, most of you continue to view the balance of risks to GDP

growth (shown in the upper-right panel) to be weighted to the downside, while a larger majority than in June see the risks to the unemployment rate as weighted to the upside. Many of you continue to view the risks to inflation (shown in the two bottom-right panels) to be broadly balanced, while the number indicating upside risks fell and those indicating downside risks increased.

As the communications subcommittee recommended, the staff plans to include this exhibit showing histograms of the responses regarding uncertainty and risks in the SEP that will be published with the minutes of this meeting in three weeks. The information contained in this exhibit previously had only been described in the SEP text.

This concludes my presentation. Loretta Mester will now provide a summary of the projections you submitted for the trial run.

MS. MESTER.⁵ I will be referring to the exhibits in “Material for Briefing on Trial-Run Policy Projections.”

As part of its exploration into various approaches for enhancing the Committee’s communications, the subcommittee on communications asked FOMC participants to provide information on their individual assessments of appropriate monetary policy. More specifically, participants were asked to provide projections for the average level of the federal funds rate target in the fourth quarter of each calendar year through the forecast horizon of 2014 and over the longer run. These projections correspond to the appropriate policy that participants incorporated into their November SEP submissions. Participants who see the first policy firming occurring after 2014 were asked to provide their assessments of the likely year of liftoff, as well as their economic projections for that year.

I have divided the handout’s exhibits into those similar to the ones seen in the standard SEP release (these are exhibits 1 and 2) and those that might be useful for internal discussions (these are exhibits 3 and 4).

As shown in exhibit 1, participants’ funds rate projections have a central tendency of 13 to 67 basis points in the fourth quarter of 2012. Beyond 2012, differences in views about the timing and pace of tightening can be seen in the widening of both the central tendency and the range of projections. By the end of 2014, the central tendency for the funds rate is 13 to 250 basis points. Thus, participants agree that by the end of the forecast period, the policy rate will remain considerably below its projected longer-run value, whose central tendency is 400 to 450 basis points. The longer-run projections represent the value of the funds rate to which the economy will converge over time in the absence of further shocks. This longer-run value depends on both the longer-run inflation rate, which the central bank can determine, and the equilibrium real interest rate, which it cannot.

⁵ The materials used by Ms. Mester are appended to this transcript (appendix 5).

Exhibit 2 provides histograms of the trial-run responses. As shown, there is somewhat less disagreement about the appropriate path of policy—at least over the next couple of years—than the central tendencies and ranges might suggest. A large majority of participants—11 of 17—see the funds rate remaining at current levels through 2013, consistent with the Committee’s current forward guidance that economic conditions are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013. In contrast, by 2014, only 5 participants see the funds rate still at current levels, and the range of projected values is quite wide. This result suggests that, while participants are in fairly close agreement about their long-run objectives, they differ more significantly in their assessments of the economy and about how monetary policy can influence economic outcomes.

As shown in exhibit 3, there is considerable disparity in views about when appropriate policy would require the funds rate to move off the zero bound. The modal year is 2014, but three participants project no change until 2015 and one projects no change until 2016. In contrast, one participant judges that the appropriate year of policy liftoff is this year, and three others, in 2012.

Participants cited several factors that informed their policy judgments. Those favoring liftoff in 2014 or later cited slow growth and high unemployment coupled with moderate inflation, high and persistent resource slack, and the effects of the zero lower bound in limiting monetary policy accommodation. Those favoring an earlier liftoff cited the need to forestall inflation pressures and financial and structural imbalances, and the need to keep inflation expectations anchored. More generally, some participants indicated that their views of appropriate policy included further clarification of the Committee’s forward guidance, and some noted a relationship between the Fed’s balance sheet and their funds rate paths.

The trial run provided information on economic projections beyond the standard forecast horizon for those participants anticipating that the first funds rate increase would occur after 2014. This allows us to look at participants’ projections of economic activity aligned on the year of the first increase rather than on a calendar year. This is a step toward gaining a better understanding of participants’ views of the economic conditions that underlie their assumed policy paths. Participants could find such information useful in their internal discussions of policymaking and communications issues, such as clarifying the conditionality of the Committee’s forward guidance.

It is important to remember that we do not know the exact timing of a participant’s first rate increase—the collected information reveals only the level of the funds rate in the fourth quarter of each year, and a participant could be anticipating the first change in the funds rate early in that year or late in the year. So, to get a sense of expected economic conditions and the expected change in economic conditions at the time of the first projected rate increase, the top panel of exhibit 4 shows the central tendency and range of projections of real GDP growth, the unemployment rate, and PCE inflation for the current year (2011), for the year prior to liftoff, and for the year of liftoff.

As indicated, in the year prior to their first rate increase (the middle bar in each forecast panel), the central tendency of participants' projections is for economic growth to pick up from the current level of around 1¾ percent to between 2½ and 3¾ percent; for the unemployment rate to decline from around 9 percent this year to between 7¾ and 9 percent; and for total PCE inflation to decline from around 2¾ percent this year to a range of 1½ to 2¾ percent.

Then in the year of liftoff (the third bar in each forecast panel), participants generally anticipate a slight acceleration in GDP and that the unemployment rate will continue to move down—but the central tendency is fairly wide at 6½ to 8 percent. The central tendency of the inflation projection in the year of liftoff is about 1½ to 2¼ percent.

Of course, while the central tendencies and ranges give summary information, they don't reveal the connections between an individual participant's policy assessment and his or her economic projections. The bottom panel of exhibit 4 displays some of that information in a set of scatter plots of pairs of variables from each individual forecaster in his or her year of liftoff. It is important to note that forecasters can have similar views of the economic conditions needed to spur liftoff, but their views on the timing of when those conditions will be reached can differ substantially. I've highlighted two points in the first scatter plot as an example. Each of these two forecasters sees growth around 3 percent and the unemployment rate around 8 percent when the fed funds rate moves away from the zero bound, but one thinks this will happen in 2012 and the other thinks it won't occur until 2014.

As seen in the first plot, several participants are projecting that the first rise in the funds rate will need to occur before the unemployment rate falls to 7½ percent and with growth at 3½ percent or less. As shown in the bottom-right plot, all participants anticipate that liftoff will need to occur even though inflation is under 3 percent and the unemployment rate is at or above 6½ percent.

These exhibits and those distributed on Monday are meant to illustrate how information about participants' policy expectations might facilitate the Committee's internal deliberations. If it would be helpful, the staff could collect and present this information on an ongoing basis and assist in exploring approaches for disseminating such information to the public through the SEP. Thank you.

CHAIRMAN BERNANKE. Thank you very much. These are some interesting ideas on how to present the information on projections.

It's been our practice four times a year to have a briefing on financial stability. Given that we had a videoconference a couple of weeks ago and given how full the agenda is, we've decided not to have that briefing. But Nellie Liang is here and Pat Parkinson is here, and if

anyone has any further questions relating to financial stability or wants to make any comments or raise any issues, I hope you will feel free to do that. We're ready for questions for the staff.

President Kocherlakota.

MR. KOCHERLAKOTA. Yes. Thank you, Mr. Chairman. I have a brief question related to our discussion of nominal income targeting. Looking not just at the change in real GDP in the year of liftoff—it might be interesting to look at the cumulative output gap of real GDP or nominal GDP at the time of liftoff. So maybe we're at minus 7 percent now—just thinking about putting in the Tealbook estimates of potential GDP and then thinking about how the forecasts of real GDP have evolved relative to that. I don't know if I'm making sense.

MS. MESTER. Yes, you are. One thing is in the handout that we distributed on Monday—we did deviations from the long run—an individual's forecast of long run. You can at least see how far away they are from where they think the long-run gap is. But I would direct you to look at those, and maybe that'll give you some insight.

The other thing we thought about doing is amending the one chart that is basically “Year of Liftoff” in levels. You could imagine doing changes and then doing a central tendency and the range of that. But derivatives of derivatives of derivatives get to me, although I read your memo, and you have a third derivative in your loss function. [Laughter]

MR. KOCHERLAKOTA. A lot of functions have a third derivative. [Laughter]

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Just a point for David and the international side—to tie them together. In talking to the oil companies—which include Exxon; it has pretty good information—what they note is that gasoline–diesel demand is off 2 percent year to date. But what has occurred is that with the slowdown in European growth, there is less refinery output, meaning less exports to the

East Coast of the United States. As a result, they haven't seen the decrease in motor gas prices that they had expected. So there is this odd phenomenon. It is an international market. It's marked off of Brent, by the way, not off of WTI. But it's a refinery concept. The slowdown in Europe is actually affecting supply in the United States, even though demand has come up somewhat. The same is true for av gas—that, in the parlance of business, the crack spread has just not narrowed. The question is, when will it happen? But the pressures are moving in that direction from a demand standpoint. I wanted to make that point.

On food prices, the entire structure seems to be supported by Chinese demand. Soybean oil, for example, which is the most important—10 years ago, they imported 5 million tons; this year, they'll import 60 million tons. I mention that because, if you look at the headline PCE number, Mr. Chairman, of that 2 percent, 1.7 percent was either gasoline or food—1.4 was gas and 0.3 was food—and the rest, the core, of course, was flat, in keeping with what the trimmed mean was forecasting, as I've said, at a six-month run rate.

For what it's worth, I think you need to take note of that phenomenon. The international side is definitely impacting, in both gas and food, what is happening here in the United States. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. I have a question for Steve. I want to clarify something you said. When you were talking about the bank capital issue in Europe, you said “asked to raise.” I'm not sure I would characterize it quite that way—in the sense that it's a shortfall based on a 9 percent capital ratio, but they're not really forced to raise it; they're just supposed to get to a 9 percent capital ratio.

MR. KAMIN. Oh, right. What I thought I said—but I might have erred in my reading—was that they are required to raise it one way or another.

VICE CHAIRMAN DUDLEY. Okay.

MR. KAMIN. Their first option will be to go to the private markets.

VICE CHAIRMAN DUDLEY. They're not really raising.

MR. TARULLO. They can cut assets, too.

VICE CHAIRMAN DUDLEY. All they have to do is get to the right ratio at the end of the day. They could shrink to get to that ratio; they can change the risk-weighted assets. I just wanted to clarify that.

MR. KAMIN. Thank you—that's correct. In their statements and in their discussion, they are very eager that that target not be achieved through deleveraging.

VICE CHAIRMAN DUDLEY. But that's a loose EBA instruction.

MR. KAMIN. Exactly. That is, indeed, a loose instruction. And so they're trying not to have that be the case. They have talked about restricting dividends and things like that in order to achieve that, but thank you for that clarification.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. My question is for Steve, but it's a financial stability question, which is: You highlighted the 50 percent voluntary write-down, and the CDSs presumably are not going to be triggered; I wonder if you have any views on what that means for the CDS market going forward? If you thought you were being hedged against sovereign debt default, then not only for Greece but also for all your sovereign debt, all of a sudden it looks as though that hedge isn't a very good hedge. And if you think that sovereigns could play that game not only for sovereigns but also possibly for bank debt if the bank was large relative to the size of the

country, you start wondering whether that contract any longer has viability. But all of a sudden then, do you want to hold sovereign debt if you can't hedge it? So it starts having implications for the yields going forward. So I was wondering if you have views on that. Then I think this is really a question for another time, maybe, that the financial stability people could pick up on. But given how often the CDSs are cited, I wonder if you have any views on that—or Nellie or anybody else.

MR. KAMIN. I'll just start by saying that's an excellent point, and it's something that people have raised as an issue. It is interesting that those same concerns came up after the July agreement by Europeans to impose a haircut of only 20 percent on private creditors. And in the event, that concern seems to have been shrugged off, but it's come up again with this much larger haircut. One could imagine a situation after this, especially if it goes through, where indeed the role of CDSs could diminish.

MR. SACK. My sense is that it's not being shrugged off as easily this time. There is a lot of discussion about this, and it's a serious potential problem. You see it in the prices. The CDS spreads have come in much more or have come in even in cases where the cash spreads have not, so I think you're already starting to see some slippage in the prices. And if they are no longer effective as a hedging instrument, it would have the implications that you raised.

CHAIRMAN BERNANKE. Are there any other staff who want to comment?

MS. LIANG. I don't think I'm going to add too much to that. That is an issue that was raised very quickly, and so that is something we're reviewing to see if there's any measurable effect on the cash spreads and the CDS. But as Steve pointed out, in July and last year, when they talked about extending maturities, it appeared to get shrugged off, though the effects on

CDS values were a big concern at the time. This time we're starting to see a little bit of an effect, but it's a hard question to answer. We'll try to come back with something.

CHAIRMAN BERNANKE. Other questions? President Plosser.

MR. PLOSSER. I want to turn to the trial run. I want to make a comment and maybe even ask a question here. One of the things I find interesting about this is the difference in part between exhibit 1 and exhibit 2. As Loretta pointed out, if you look at exhibit 1, it looks as though there are huge spreads about what people expect. I think it's important we remember two things about that. One is that this is appropriate policy and not a forecast. I think that's important to understand what we're doing. But also, as she pointed out in exhibit 2, the modal forecasts here reveal a somewhat different story than you'd get by just looking at the first chart. And the modal forecasts are much closer to what the Committee has been signaling through its forms of forward guidance.

I think the other thing that's important to remember about this is that the value of this, as I see it, is not just as a snapshot in time, but it's also to watch how this exercise would evolve every quarter as the economy evolved, and therefore how this shape would evolve. And that's part of the information, rather than a point in time. It's the evolution of that that would be very revealing, I think, over time. So from my perspective, this could be a very valuable exercise for the Committee to undertake.

CHAIRMAN BERNANKE. First time anybody ever estimated a Taylor rule on panel data. [Laughter] Any other questions? Governor Tarullo.

MR. TARULLO. I think I drew a somewhat different inference than Charlie did, because I found myself focused on panel B in exhibit 4, which had quite a bit of variance. If at some

level the most relevant piece of information for markets is when the Fed will begin to exit—if I looked at that, I'm not sure I would be too confident in drawing any conclusions. Go ahead.

MR. PLOSSER. I think the question might then be to look at that in the same sort of bar chart—in other words, looking at the modal numbers on that chart rather than just the spread and central tendency.

MR. LACKER. Which chart are you talking about?

MR. TARULLO. I'm talking about the lower right-hand column of panel B.

MR. PLOSSER. Oh, I'm sorry. I misunderstood. I thought you were looking at panel A.

CHAIRMAN BERNANKE. Exhibit 4.B—PCE inflation versus unemployment rate.

MR. TARULLO. Very last page, very last panel, very last graph.

MR. LACKER. It would be hard to pick a consensus trigger out of that or a threshold. Is that what you take from this?

MR. TARULLO. Yes. That returns me to the question I had earlier, which was whether, if there were three kinds of scenarios, there would be more convergence. And this graph at least suggests that there might not be a whole lot more convergence.

MR. LACKER. You can make them into three clumps.

MR. TARULLO. Maybe that's right.

MR. LACKER. Maybe not. I don't know.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. Yes, I wanted to build on something I had said earlier after Governor Tarullo's earlier remarks. Frankly, when I speak about the economy, I'm not sure people are all that interested in what I would do with the fed

funds rate if I were in charge—they want to know what I expect this Committee to do. And when we use the SEP, I'm not sure we want to be thinking about it as conveying the full richness of all of our views about the economy, as opposed to trying to use it to convey what we think is going to be happening to policy tools.

I think it's right to condition our long-run forecasts on optimal monetary policy. That gives the people the right idea of what the long-run target is. Conditioning our forecast for the fed funds rate and for inflation and unemployment on that—I don't think that's going to convey the right kind of information to markets. Markets want to know where we think those variables are going to go and how we think policy is going to respond to that and what we think policy will be, as opposed to under what we think optimal policy should be.

MR. TARULLO. Narayana, there's insight in that observation. How, in practical terms, then, do you think one gets from the manifestation of everybody's individual inclinations, which this graph shows, on the one hand, to something resembling more of a consensus, which, I read into your remarks, you would expect to actually be way less divergent.

MR. KOCHERLAKOTA. I would be interested to see a different trial run where we make a forecast predicated on what we think the Committee will do, what the evolution of inflation, unemployment, and real GDP will be, on the one hand, and what the evolution of the fed funds rate will be, on the other hand. And we'll see—maybe I'm wrong. Maybe there won't be more convergence on that, but my suspicion is that there would be a lot more convergence.

CHAIRMAN BERNANKE. This is important information, though—what people's preferences are.

MR. TARULLO. Yes, I was going to ask you about that.

MR. KOCHERLAKOTA. It's very reasonable for us internally to have that information. I will say for myself, I don't think it's as important for the public. I'm all in favor of transparency, but I have many vehicles to inform the public of my personal preferences over these variables. I'm not sure that seeing them in this bar chart form is all that valuable. It's valuable for us to know—panel 4.B is really useful for us to know in our own internal dialogue. But it doesn't necessarily mean that's going to be what we should share with the public.

CHAIRMAN BERNANKE. Pages 3 and 4 were intended for internal use.

MR. KOCHERLAKOTA. And that's very valuable, but when we go out and talk about what we want to share with the public, what's going to be useful in terms of shaping policy, I think it's more about trying to tell the people what we think the Committee is going to be doing, as opposed to what we would do if we were in charge of the Committee.

CHAIRMAN BERNANKE. I'm not sure I agree with that. President Williams.

MR. WILLIAMS. No, I'll pass.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I just wanted to follow up on that. There is literature that looks at the forecasts by the group here. They treat them as unconditional forecasts, and they look at whether it's accurate or not. They forget all about the "appropriate policy" assumption, and so I think there are a lot of subtle issues here. If you think the Committee is off on the wrong path, you might forecast that inflation is going to go way down or way up—way far away from target, for instance. And do you want that?

Other central banks have wrestled with this. They've done the projection based on the market expectation, which is a reasonable compromise. Or they've allowed the staff forecast to

go out and have let the principals just comment on the staff forecast. So I'm not sure—this is a difficult issue, I think.

CHAIRMAN BERNANKE. Anyone else? [No response] Okay. We're ready for our go-round, and let's start with President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I'll do my best to ensure that we complete this meeting by nine o'clock tonight. [Laughter]

In our recent round of board meetings and contacts, the majority of directors and business contacts in the Sixth District described activity as expanding at a slow pace. While most reports were a bit more upbeat than before the last FOMC, a plurality of directors and their contacts stated that they had revised down expectations for their firms' performance. Two directors representing the country's second-largest retailer and largest airline expressed pessimism about the business outlook, citing continuing uncertainty and weak confidence emanating particularly from the political process. Overall, I would characterize what we heard over the past two weeks as falling in a range from "still somewhat pessimistic" to "very cautiously optimistic." In our questioning of directors and other contacts, we asked about intentions to hire or reduce staffing in the coming months. Although we heard some rumblings about reducing employment, the modal response was no near-term intention either to hire beyond replacement requirements or seasonal needs or to downsize staffing. Most firms seem to be holding steady as regards staffing.

In our formal survey of business inflation sentiment—this time, it involved 164 respondents—we detected less pressure on input costs than earlier in the year. Also, no significant wage pressures were noted. However, the vast majority of respondents noted that they intended to pass on at least some of any cost increase to their customers. Businesses in the

transportation sector noted that they have faced little resistance to surcharges to cover fuel cost increases.

Turning to my sense of the outlook, Atlanta's forecast is very similar to the Tealbook's through 2013. In the last year of the forecast horizon—2014—we depart from the Tealbook's trajectory and project flatter growth, reflecting the weight of fiscal drag, continued deleveraging, and restrained consumer confidence. Our forecast has unemployment above the Tealbook's 2014 projection and above the 6½ to 7 percent projections suggested in version A1 of the Tealbook draft statements. At the same time, our inflation forecast stays in the neighborhood of 2 percent over the forecast horizon, while the Tealbook numbers stay south of 2 percent. Therefore, we have assumed less slack in the economy than the Board staff.

To be more specific, I have a strong sense that the labor market involves much more in the way of inchoate rigidities, inefficiencies, and behavioral impediments than fully appreciated. Now, admittedly, I am basing this sense on a lot of anecdotal input, but here is some of what we're picking up. With respect to the relatively slow pace at which reported job openings are being filled, we are in fact told that some vacancies are so-called purple squirrel openings: If a purple squirrel shows up, the company will hire; otherwise, the company waits. [Laughter] My sense is that this employer attitude will change if confidence increases and demand picks up. But we are also consistently told of many skills mismatches. These mismatches are related to hard skills in specific industries and job types, but we hear much more broadly of issues related to soft skills, such as basic work habits, attitudes, and expectations. I frequently hear of jobs going unfilled because a large number of applicants have difficulty passing basic requirements like drug tests or simply demonstrating the requisite work ethic. As an example, one contact in the staffing industry told us that during their pretesting process, a majority—actually, 60 percent

of applicants—failed to answer “0” to the question of how many days a week it’s acceptable to miss work. [Laughter] Now, I am not suggesting that these are necessarily new phenomena. But for a variety of reasons, employers seem to be paying much more attention to the quality of prospective hires than pre-recession. We also hear that job requirements have been updated to combine a wider spectrum of performance competencies, such as those that are required for receipt of the ACT’s National Career Readiness Certificate.

There is anecdotal evidence of structural shifts. Companies of various sizes in various industries report moving to increase their permanent part-time workforce, typically as a way to manage uncertainties about health-care expenses and requirements. Now, I stress that these are anecdotal accounts, and the effects are difficult to quantify. But combining these and other inputs with the somewhat confusing participation data suggests to me that a great deal is going on in labor markets that we don’t fully grasp. And I am not quite ready to argue that all this means the structural rate of unemployment is permanently higher, but I am inclined to think that clear progress in the labor market will lag economic growth more than usual. Further, I am somewhat skeptical of the capacity of monetary policy measures to speed up the process.

Let me conclude with comments on the balance of risks. I see risks to growth to the downside. Financial market volatility, slow jobs growth, and weak confidence make the economy vulnerable to any number of adverse shocks. Regarding inflation, I judge the risks to be broadly balanced, reflecting some ambivalence on the question of the amount of slack in the economy. It is possible that the high unemployment rate reflects more slack than I have assumed in my inflation outlook. But as my earlier recitation of anecdotal input suggests, the labor market could be struggling under the weight of forces that have raised the natural rate of unemployment for at least some time. I also think there is a chance that the influence of

commodity prices and other pressures on core inflation numbers could play out over a longer period than I have assumed, and inflationary sentiment could be adversely affected as a result.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. The markets seem to have initially taken some solace in the Europeans having an outline of actions with no details and in U.S. economic data consistent with growth that does not improve the employment situation. That such diminished expectations can generate a market rally is hardly encouraging. As Brian highlighted, it is even less encouraging that a referendum in a small country can offset much of those gains. This highlights the fragile financial condition as we try to make our own forecast.

My forecast, like that in the Tealbook, provides little to celebrate—positive but weak growth given the sizable output gap, positive but weak employment growth that leaves us far from full employment, and inflation that remains below 2 percent. By mid-2013, I expect we will still have an unemployment rate above 8 percent and an inflation rate well below 2 percent. The Tealbook has a similar forecast. If these forecasts are right, we will be missing on both elements of the mandate two years from now.

Financial market participants remain concerned. Liquidity in many markets is sporadic at best. Financial institutions, worried about their own liquidity risk, are not supporting markets to the same degree, making financial market participants less willing to take positions that may be difficult to exit. My own interpretation is that in many markets, European and American institutions that have been dependent on wholesale financing are pulling back from activities, resulting in marketmakers less willing to make markets.

While there has been some increased refinancing activity, and the newly announced HARP changes are positive, both the movement in mortgage rates and the fiscal willingness to encourage refinancing remain too timid to have much macroeconomic effect. Our econometric equations imply that we are well below the level of construction implied by fundamentals at this time. And buyer concern about future prices and the tightness of credit conditions make a very gradual return to normal in housing the most likely outcome.

My business contacts indicate widespread caution. Given the possibility that deficit discussions remain dysfunctional and European brinkmanship remains the negotiating tool of choice, businesses would prefer to defer hiring and investment decisions until there is more clarity in the outlook.

Given the weak performance we have experienced and the weakness in our forecast, our incremental policy is not the best approach. Critics of Japanese policymakers focus on a slow, deliberate approach that led to very suboptimal outcomes, with 20 years of slow growth and inflation below targets. If we do not start seeing more-robust improvement, then the likely fiscal austerity and continued downside risk from Europe put such improvement at significant risk. We will need to decide whether incremental policies are likely to return us to either element of our mandate in the medium term. Thank you.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. The Ninth District economy continues to perform better than the nation as a whole. The overall unemployment rate in the Ninth District is under 7 percent. Per capita income has risen slightly faster for the past two years than in the nation as a whole. That said, the rate of progress within the District has still been painfully slow. The unemployment rate in Wisconsin, Minnesota, and South Dakota in

September 2011 is essentially no different from a year earlier, although, as I mentioned, markedly better than in the nation as a whole. The unemployment rate in Montana has actually risen over the past year. Nor do I see any impulses for big changes in the near term. Ninth District business respondents remain cautious, although I will not be able to achieve the level of nuance that President Lockhart was able to obtain; their level of cautiousness is perhaps a shade lower than in the fall of 2010, and it's certainly a couple of shades lower than in the fall of 2009. So the economy is improving, but the pace of recovery is distressingly slow.

My outlook for the real economy is consistent with what's happening in the Ninth District and is, consequently, not all that different from the Tealbook. The good news is that the near-term downside risk—this sentence is out of date. I was about to say that the near-term downside risk from Europe has receded some in the intermeeting period. I wrote this on Saturday. [Laughter] I apologize. But my outlook, nevertheless, remains subdued. I expect that real GDP will grow at 2.6 percent in 2012 and only slightly faster in 2013. This is too slow to make rapid inroads into unemployment, and I'm anticipating that unemployment will be around 8½ percent at the end of 2012 and around 8.1 percent by the end of 2013.

Where I differ from the Tealbook is in my forecast for inflation. Core inflation has stabilized in the past couple of months. Nonetheless, I am expecting that core inflation will remain at or above 2 percent over the next two or three years. Obviously, the difference in my forecast for inflation is predicated on a different view of slack. There are, I think, reasons to believe that slack is large. As captured in the Tealbook, detrended real GDP in the third quarter of 2011 is over 10 percent lower than in the fourth quarter of 2007. The employment–population ratio remains well below its December 2007 level. But there are also reasons to think that slack is smaller than these observations might suggest. Detrended real GDP and the employment–

population ratio have been disturbingly steady over the past two years despite variations in monetary policy and fiscal policy. And a theoretical statistician looking at the recent data on detrended real GDP or on the employment–population ratio would not be led to the obvious conclusion that further stimulus would lead these time series to turn north.

As I mentioned at our last meeting, I think the comparisons with June 2004 are informative. The capacity utilization rate is about the same as in June 2004. The short-term unemployment rate, the fraction of the labor force that has been unemployed for less than 15 weeks, is only slightly higher than in June 2004. Along the same lines, I believe that it is instructive to compare the matching efficiency of the labor market in mid-2004 with what it is today. If you look at the vacancy–unemployment ratio in August 2011, it is about half of what it was in mid-2004 during the midst of a jobless recovery. Typical estimates of the elasticity of the matching function are usually around a half. So this fall of the vacancy–unemployment ratio of 50 percent from mid-2004 to mid-2011 should have resulted in a fall of the job-finding rate of about 30 percent. And in fact, the steady-state job-finding rate is more than 50 percent lower than in mid-2004. The matching function seems to have shifted in this sense, so that it is now considerably harder for good matches to form than in June 2004. If this shift had not taken place, the unemployment rate would be just 6.1 percent—only slightly higher than it was in June 2004.

None of these observations can be viewed as being more than suggestive. My point is certainly not that I know for sure that slack is as low as in June 2004. But we need to keep in mind that the events of the past four years may well have had significant adverse effects on the supply side. This hypothesis is consistent with the uptick in core inflation that we have observed over the past year. And those effects will worsen the tradeoff between unemployment and

inflation that we face in formulating policy, in the sense that any given level of unemployment will lead to higher inflation. Thank you, Mr. Chairman. That's all I have to say.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. After all of the bad economic news throughout much of this year, it's refreshing to have intermeeting data that surprise to the upside, albeit relative to very modest expectations. The inflation data have also been encouraging, with core inflation trending lower.

A key question for the outlook and monetary policy that we have actually been discussing for a few years now is to what extent the modest growth we are seeing reflects a slowdown in the growth rate of potential output. My trusty staff has reexamined this issue using a variety of methods. The bottom line of their analysis is that the underlying growth rate of potential output since the start of the crisis appears to be slower than we previously thought and still assumed in the Tealbook. Specifically, we estimate that potential output will grow about 1.9 percent per year, on average, over 2011 to 2014, and this slower rate of potential output growth primarily reflects slower labor productivity growth owing to both a lower estimate of trend total factor productivity growth and the subdued pace of capital accumulation by businesses. This finding of slower potential growth obtains both from a careful bottom-up approach, similar to that employed by the Board staff, and a top-down Kalman-filter approach to estimating potential output. Looking further ahead, we estimate the long-run growth of potential output to be 2.2 percent. That's 0.3 percentage point lower than in the Tealbook.

As a result of this revision to our estimate of potential output, the level of potential at the end of 2014 looks to be about 5½ percent lower than what we expected on the eve of the Great Recession. So this gets back to President Kocherlakota's point about, if you were to extend a

line from late 2007, where that would be. But nonetheless, actual output remains well below even that reduced level of potential. And our estimate of the current output gap is around 5 percent. That's about 1 percentage point smaller than in the Tealbook.

The key factors underlying this large output gap are on the labor side. For example, despite the steady growth in the working-age population, hours worked today are more than 5½ percent lower than in the fourth quarter of 2007. My staff's analysis, along with the analyses of many other economists in the System, consistently finds that this shortfall is primarily cyclical, not structural.

My near-term outlook has real GDP growth of about 2.3 percent next year—and careful study of the tables we got shows that that is the slowest rate of growth projected for next year among the participants—and about 3 percent in 2013. I think, again, this slower rate of potential growth that we are assuming actually explains the fact that my forecast is somewhat lower than typical. With output increasing somewhat faster than potential over the next two years, I expect the unemployment rate to end this year at about 8.7 percent and to be 8 percent at the end of 2013, which is roughly comparable to the Tealbook.

I think it's important also to note something that Dave Stockton—David Wilcox—I don't know how I did that—[laughter]—something that David Wilcox pointed out earlier—several hours ago. And that is, in our forecast, similar to the Tealbook, more than half of the decline in the unemployment rate over the next two years is met with a decline in the natural rate of unemployment. So the closing of the gap is actually quite modest.

Another question that we've been grappling with is, if the unemployment gap is so large, why haven't wages fallen more over the past few years? This question was taken up by several leading economists at a recent symposium on U.S. wage dynamics hosted by my staff at the San

Francisco Fed. Although the participants came from different traditions and used varied approaches, a number of common themes surfaced. There was general agreement that wage growth has been firmer than expected during the recent recession and recovery. Still, none of the participants concluded that this signaled an absence of slack. Instead, the participants pointed to an upward shift in the skill composition of those employed as an explanation for the resilience of real wage growth. They also cited downward nominal wage rigidities, which are more likely to be binding in a low-inflation environment, as a potential explanation of the relative strength in wage growth.

This situation is likely to continue, and my business contacts report little or no upward pressure on wages. Similarly, I see no pressure for an acceleration in prices. Commodity price pressures have come down, and inflation expectations remain well anchored. Furthermore, the recent readings on core PCE inflation have come down from somewhat elevated levels seen earlier this year, as expected. Over the past three months, core PCE inflation is about 1½ percent, and over the past 12 months, core prices increased 1.6 percent. Looking forward, I expect PCE inflation to be around 1½ percent both next year and in 2013.

Let me turn to the risks to the outlook. I regard the risks to my inflation forecast as broadly balanced, which clearly puts me in the minority, with about equal risk of inflation running at 1 percent or at 2 percent next year. Despite the sizable swings in commodity prices and the worst recession in decades, inflation expectations have remained remarkably well anchored, and core inflation has been stable through this period. I will mention a paper that Dave Reifschneider and two of his colleagues here at the Board did, looking at what were the surprises of the past few years in terms of output, unemployment, and inflation. What was probably one of the most striking results is how stable inflation has behaved over the past few

years relative to a variety of DSGE or empirical models or FRB/US. The big surprise, in some sense, is that inflation has been so stable despite all of the shocks that we've had. For that reason, I view the inflation risk as broadly balanced but the uncertainty as not larger than history.

The risks to the outlook for economic activity appear to be larger than average and skewed to the downside. For example, our outlook assumes further improvements in credit conditions and consumer and business confidence. Instead, the recent subpar growth and elevated financial market volatility have, if anything, increased uncertainty. U.S. fiscal policy also remains a source of downside risk, and progress in Europe on solving several difficult problems, notably bank recapitalization and debt sustainability, has been halting at best. And this was written on the weekend.

The recent uncertainty appears to be particularly pernicious in character. It's not just unusually large shocks to our models that I worry about, but it's also the stuff that isn't even in our models—so Knightian uncertainty. And I have to say that purple squirrels were not in our model, so that's just one aspect of that. Let me see if I can read this: It's not just the known unknowns but also the unknown unknowns that seem to have persisted at a high level. For example, the risks of a full-blown financial crisis in Europe are not well captured by our models, and I have a hard time formulating precise risks to our economy in that scenario.

Finally, Governor Raskin and I are just back from a trip to both China and Japan, but I'll comment on what we heard in Japan that made me especially drawn to the Tealbook "Lost Decade" alternative simulation. In fact, many of the people we talked to in Japan predicted that the U.S. would soon, or within a few years, be talking about a lost decade for the U.S. In this scenario, "persistently sluggish growth . . . has a corrosive effect on the supply side of the economy." Governor Raskin and I encountered people, as I said, who warned that these risks

were developing for the U.S. And based on their own agonizing experience, they stressed the difficulties of pulling an economy out of a protracted slump. The large downward revisions to U.S. potential that I mentioned earlier reinforce such concerns.

In summary, the outlook is one of sluggish growth and frustratingly slow progress on reducing unemployment. Inflation looks to be trending to levels somewhat below my preferred long-run goal of 2 percent.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. My assessment of the economic outlook has not changed meaningfully over the past few meetings. I do not see any evidence that the U.S. economy is poised to achieve escape velocity anytime soon. We've experienced periods when the balance of the incoming data had been negative. More recently, the news has been somewhat better. I made it a point not to overreact to the weaker monthly data we saw this summer, and so I'm not overreacting to the more positive numbers we've seen of late. The best-case outlook seems to be simply muddling along. The recent, more positive data are still only indicative of an economy that's just treading water. The 2½ percent growth rates we're looking at over the near term are just not enough to make meaningful headway into the substantial resource gaps we see in the economy today.

Commentary from my business contacts continues to support this assessment. Indeed, there really wasn't that much new in their reports this round. Overall, most say things are moving sideways at this time. They just don't see the demand in place to justify expanding workforces or capacity. Many of my contacts said they were demanding contingency plans from their staffs to slash expenditures 5 to 30 percent if needed, and I continue to hear many say they are making plans to promptly cut spending at the first sign of a downturn in demand. These are

hardly the plans of business leaders who are contemplating an acceleration in their activities. I expect more of the same. The ups and downs in the national data did show through in our contacts' commentaries about the automotive industry. The OEMs and their suppliers are expecting continuing modest improvement in auto sales and production, but they don't see things taking off, either.

Everyone continues to be concerned about Europe. This report seems stale. The reports from my staff, who talk to people in the Chicago markets—the report seemed stale on Friday, but it seems a little fresh today. Prior to last week's announcement, the financial-sector contacts said that uncertainty and caution were freezing up some markets. That said, there was little evidence of panic. Our contacts also said that they would view any European debt package with some skepticism. They seem to be on target with that one. They question the Europeans' ability to execute whatever immediate plans they come up with, as well as the prospects for a longer-term resolution given the impediments to growth in the region.

Turning to the macro outlook for the U.S., our growth forecast is similar to the Tealbook's. We also think that the reductions the Board staff has made to potential output are plausible, and these reductions are not small. They cut nearly 3 percent from the level you would get by simply extrapolating forward a modest 2½ percent growth trend from the beginning of the recession—not as much as the 5½ percent growth that President Williams was talking about. But even with this substantial reduction in potential, we're still looking at large output gaps and growth forecasts that leave resource utilization at very low levels throughout the projection period.

To sum up, all of the incoming data and anecdotal reports point to an economy that's just sputtering along. We're generating growth, but it falls far short of the pace we need given the

size of the resource gaps that must be closed. With regard to the two scenarios I discussed this morning, in my opinion, the U.S. economy is entangled in a liquidity trap with amplification from a large Reinhart–Rogoff financial crisis. We could be staring at a lost decade, the way President Williams was suggesting from his comments on Japan. Even if this is only an exaggerated risk—I don't think it is—if we fail to take further actions, owing to credibility risks, we end up with about as much credibility as the Bank of Japan has, I worry. Like President Rosengren, I worry about too slow, incremental policies. I think we need to continue to add more accommodation. There are alternatives in the Tealbook, A1 and A2, and I'm uncomfortable with stasis. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Let me ask you, President Evans and President Williams—I'm a little confused: If potential output is 5 percent lower, how can the output gap still be comparably large?

MR. WILLIAMS. This was a comparison—I should have spelled this out a little more carefully—of what our forecast or view of potential output was in 2007, before the recession. Basically, it was that trend line and seeing how much the decline in the level of potential output in the end of 2004 is relative to that in 2007. It's not just in the past six weeks.

CHAIRMAN BERNANKE. So what is your potential output relative to the Tealbook?

MR. WILLIAMS. It's 1 percent because our output gap is 5 percent. The Tealbook, I think, is 6 percent in Q3. So it's just a 1 percentage point difference.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, I was listening to President Evans. My summary of the economy is not that we're sputtering, but we're loping along rather than galloping, to use a

Texan term. And I'll basically say that things are not that much different, but they're slightly improved.

With regard to my own District, we continue to create private-sector jobs. We created 204,000 private-sector jobs year to date, and lost 41,000 government jobs. Twenty-three thousand of those were lost in September alone, and yet we still have net job creation. I find it interesting that there is a disparity between the private sector and the public sector, with the private-sector job creation growing at a pretty steady 3 percent, but clearly we have an offset from the public sector.

In the District, conditions in housing are improving. We have increased home sales, lower inventories. Prices, however, are flat, somewhat stagnant. Our construction job growth has been weak this year, but we're seeing significant investment in multifamily units and very robust demand translating into the price of rentals. Overall, price pressures are moderate in our District; wage pressures remain subdued.

All three of our indexes—which we're constantly working to perfect—in terms of manufacturing services and retail, continue to point to continued economic growth in the next six months. So from a District standpoint, we're not quite in the parallel universe that President Kocherlakota's District is, but it's pretty much the same story. We just have a higher unemployment rate, but things are proceeding progressively.

From the standpoint of my business contacts and broader anecdotal evidence, the general claim is that business is slightly better than what we read in the press. For example, one of my business contacts is a large trucking company. In fact, it's the largest trucking company not located in my District, which runs 16,000 trucks—the largest in the country. They surveyed their customers. Eighty-five percent of their customers feel good about the fourth quarter and feel

better about it than they did—that is, they expect better growth in the fourth quarter than they did in the third, which I found different from almost every other economic forecast I have heard.

One of the key worries that seems to be vexing for the private sector, particularly retailers, is a fear of understocking—that is, running under inventoried for the year-end season; based on last year’s experience, there’s no question people are running extremely tight inventories. The real issue is whether you’ll see a pop at year-end or not. In terms of looking at rail activity, trucking activity, there appears to be a little bit of a pickup to hedge that risk, but it’s not very strong.

From the standpoint of overall cap-ex, the best way it was described to me is, people are still finding that there is a benefit to the cheap money that we provided and abundant liquidity, but the use of it is hampered by the constant concerns we hear at this table about fiscal policy and regulation. And cap-ex is being deployed but “with a string.”

From the standpoint of inflation, I said earlier that the trimmed mean is still running at a 2.1 percent six-month run rate given that the BEA upward adjusted the last two to 2.1—but fairly constant. We expect the headline PCE to trend in that direction.

Without exception, in every sector for the CEOs that I speak with, this money is being used, and the conditions in the economy are being used, to drive additional productivity investment. Whether you talk to the telecoms, or you talk to the manufacturers, or you talk to almost any sector, given the uncertainty that surrounds fiscal and regulatory policy, there is an effort to make sure that risk is reduced by driving productivity significantly through technology investment—not a good picture for unemployment; maybe a good picture for inflation. I remain concerned as to the efficacy of policy as it treats unemployment, and I still, despite my hawkish reputation, am less concerned about immediate inflationary pressures.

I am concerned, however—and I mentioned this last time—about the effect that low interest rates are having on pensions. I asked our staff to analyze the Fed’s own pension system. I referenced that last point. The data reveal that the pension discount rate within the System has fallen 100 basis points since the beginning of the year, and this would mean that we would have to reserve another 9 percent. I’m not sure whether that would apply through the rest of the economy. I heard cases, in terms of my anecdotal go-round with my CEOs, from an extra reserve of \$1.7 billion to several hundred million dollars, but there’s no question that anybody who has a tail end of a defined-benefit program is going to have to recalculate the expense ratio that they’ve imputed.

In terms of the insurance industry, I think this is something that we need to at least be aware of. Insurance is the most basic savings product that most ordinary Americans do utilize. I’m hearing increasing reports again that the profitability of the life insurance industry—I’m not talking about the demonized health insurance industry—is coming under increasing pressure and may result in a different sort of product that they are able to offer and disappointing returns to those who use that as a method of long-term savings and also protection.

Finally, with regard to the banks, they continue to report about margin suppression. I heard a new term. It’s a bit earthy, but I’m a Texan. The new term in local and community banking is “cashtration,” meaning that they are being squeezed by too many deposits—it’s worse than being squeezed—and not enough demand for loans. The margins continue to flatten, and basically, in the words of Jamie Dimon, they’re being crushed.

Let me make one last comment. I really don’t see a need for change in policy at this juncture. If anything, the conditions are slightly better than they were the last time we met, and

I'll talk more about that in the next round. So, Mr. Chairman, that is the extent of my report.

Thank you.

CHAIRMAN BERNANKE. Okay. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. For the first time since last March, I've been encouraged by some of the economic news that we got during the intermeeting period. That news has lessened the odds of another recession, but with so many indicators still weak, the bit of good news we received hasn't been sufficient to change my baseline outlook beyond this year, and I'll explain the basis of this assessment.

Like the Tealbook, since our last meeting I have edged up my forecast for GDP growth in 2011 but otherwise left my growth forecast essentially unchanged. From the fourth quarter of this year onward, I expect GDP to grow at a moderate rate of about 2½ percent through the end of next year and about 2¾ percent in 2013 and 2014. With this growth profile, unemployment will decline slowly by roughly ½ percentage point per year, leaving it at 7½ percent at the end of 2014.

In my judgment, there was enough strength in the third-quarter figures to make the risk of recession lower than I feared at the time of our last meeting. I have also been somewhat encouraged by reports from my business contacts that bankers have become more optimistic and are a little more willing to lend. As one example, a builder of commercial properties reported that he is now starting to see a renewed willingness on the part of bankers to extend loans for the value of a project rather than the cost, allowing the borrower to take away cash, which then can be invested in other projects.

Despite this good news, a range of concerns lead me to believe that the pace of recovery is likely to remain slow over the next few years, with risks to my outlook that are still higher than

historical norms. Some of those concerns include, first, that the economy continues to see considerable headwinds, including the ongoing woes of the housing sector, consumer deleveraging, and cutbacks in state and local government spending. A second concern is that, based on the most recent purchasing managers survey, Europe now seems likely to be headed for recession. And third, the overall stress in financial markets seems likely to remain elevated until the European situation is fully resolved. This stress is going to continue to impair credit market functioning and hold back growth. I am also concerned that the continued high level of uncertainty, which others have mentioned, is holding back the pace of recovery by restraining business spending. Virtually every CEO I talk with has said that uncertainty is preventing some projects from going forward. Among the uncertainties they mention are weak sales outlooks, the direction of health-care requirements, the broader regulatory environment, and future tax rates. That said, even though uncertainty is limiting the expansion of capacity, it doesn't seem to be detracting from earnings and profits. Many companies in my District are reporting record earnings and profits, apparently because they have figured out how to manage their business to stay profitable in this environment.

Turning to the inflation outlook, I have made little change to my forecast of inflation. I continue to expect core inflation of about 2 percent from 2011 through 2014. As pressures from energy prices continue to dissipate, the rate of headline inflation should slow to the core rate by the end of next year. As others have mentioned, I saw some good news in the September CPI and PCE releases. The headline rate of inflation continued to drift downward. Surprisingly, the core CPI inflation rate dipped below 1 percent on an annualized basis, but the decline in core CPI inflation is probably overstating the slowing of the underlying trend. The core CPI was pulled down by significant reversals of apparel and auto prices, which finally dipped in September after

rising unusually sharply for much of the year, and these were likely relative price movements that don't tell us much about the underlying inflation rate. Consistent with this reasoning, the Cleveland Fed's median trimmed-mean and sticky price measures of underlying price trends didn't slow nearly as sharply as the core CPI did.

Still, I think the most likely outcome is for a gradual decline in inflation to about 2 percent, reflecting several forces. Critically, inflation expectations remain low and stable. The inflation expectations model that we maintain at the Cleveland Fed shows that inflation expectations over the next few years are still below 2 percent. The other important forces giving me some confidence in my inflation forecast are for continued slow growth of labor costs and reduced pressures from commodity prices.

Putting all of this together, while there was important good news in the economic information received since the last meeting, the news hasn't been sufficient to materially change my outlook for the economy. I continue to think that the most likely outcome is for slow growth and inflation stable at about 2 percent. While the risks to the economy now seem somewhat lower than they did a meeting ago, they remain considerable, particularly with respect to the European crisis. So I still see that the risks to growth are primarily to the downside, while the risks to unemployment are primarily to the upside, and the risks to inflation still seem balanced to me. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. Economic activity in the Tenth District has continued to expand moderately, and contacts generally expect similar or perhaps slightly faster growth ahead. Manufacturing activity picked up in September and October. Inflationary

pressures have eased a bit and are expected to be moderate in coming months as the effects of higher commodity prices recede.

Recent job growth in the District as a whole has been similar to that in the nation, but the rate of growth continues to vary widely across District states. Energy and agriculture states have expanded rapidly, while other District states have shown little growth, if any. Many contacts express difficulties finding skilled workers, but wage pressures remain muted.

Energy drilling continues to boost economic activity in many areas of the District. Oil production remains highly profitable, and natural gas firms continue to have easy access to cheap capital. Continued rapid expansion of oil production in the central United States has put more pressure on pipelines and maintained the sizable spread between U.S. and world oil prices. This has caused some firms to ship oil by rail or even truck to coastal refineries rather than through pipelines to the hub in Cushing, Oklahoma.

Land values in the District continue to grow rapidly, particularly in northern parts of the region. Non-irrigated farmland values in the third quarter were up nearly 40 percent from a year ago in Nebraska, about 20 percent in Kansas, and over 10 percent in the rest of the District. Over the past five years, land values have increased over 100 percent in Nebraska and almost 80 percent in the District as a whole. Moreover, institutional investors are showing increasing interest in making these land purchases.

With respect to the national economy, recent data suggest that the near-term outlook has improved and the risk of the U.S. economy tipping back into recession has receded. Third-quarter real GDP growth came in stronger than I expected in September, as the temporary factors weighing on growth dissipated.

Over the medium term, my views are largely unchanged from September. I expect that the economy will maintain the momentum evident in the third quarter and will gradually move to a growth rate that will lead to modest reductions in the unemployment rate. Factors supporting growth include pent-up consumer and business demand, exports, and monetary policy that is highly accommodative. Nevertheless, several factors will weigh on growth over the next few years, including uncertainty, ongoing deleveraging, an anemic housing market, and an increasing drag from fiscal policy. In addition, the extended period of highly accommodative monetary policy could lead to a buildup of financial imbalances that could threaten the longer-run stability of the economy.

On a more positive note, the near-term outlook for inflation has improved. Inflation is likely to recede over the next several quarters to 2 percent or less. With a gradually rebounding economy, a depreciating dollar, and inflation expectations that appear to be well anchored, there is little risk that inflation will fall much below 2 percent over the medium term. In fact, the extended period of highly accommodative monetary policy, combined with our long-term fiscal imbalance and the possibility of a rebound in commodity prices, poses significant upside risk to inflation.

In summary, I expect that the recovery will continue at a moderate pace, with inflation remaining near 2 percent. While the risks to output growth have become somewhat more balanced, the risks to inflation remain to the upside. Thank you.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. The Eighth District economy continues to expand at a modest pace. The Eighth District unemployment rate based on 16 metropolitan

statistical areas is somewhat lower than the national rate, at 8.7 percent. Payroll employment in the District was approximately flat during the most recent reporting period.

Large firms in the District remain optimistic and plan to expand in some cases. Profitability remains strong. Cash holdings are high. Many large firms have a strong presence in Asia, and in almost every case, the growth strategy is based on Asian demand. In this sense, the European sovereign debt crisis is not upsetting business planning or entering corporate thinking as anything more than a general risk factor, and Asian growth is still considered mostly unassailable at this juncture.

District agriculture continues to do well. Relatively high prices, even with higher input prices, mean farm income will likely remain strong this year. As an indicator, some farm equipment dealers are reportedly sold out through the spring of 2012.

Commercial real estate conditions are variable across the District. Residential real estate continues to be lackluster in many areas. Banks continue to report very weak loan demand.

The national economy now appears to have avoided the recession scare that gripped financial markets during the August time frame, even though the level of global financial stress remains high. If a recession was developing during the September–October time frame, the hard data would have been considerably worse than they were. My sense is that market expectations outran actual economic developments. As it stands, I expect moderate growth during the remainder of 2011, with reasonably good prospects for improved growth during 2012, provided that significant financial stress can be mitigated.

The types of risk events that occurred during the past several months have apparently not been of a variety that might cause households and businesses to pull back spending sharply and set off a recessionary event. For households, the European sovereign debt crisis is worrying but

too distant to cause immediate changes in spending patterns. For large businesses, the EU crisis is, again, very worrying, but much of their growth strategy is in Asia so that both growth and profitability remain on track for them. For both businesses and households, the debt ceiling debate only confirmed the political realities in the U.S. concerning the difficulty of dealing with medium- and longer-term fiscal issues. Despite the contentiousness of the debate, there was no real news about the U.S. fiscal situation.

The July 29 revisions to GDP, as we have noted here on several occasions, were indeed significant and did lead to legitimate worry of a further slowdown or outright recession. But the Q3 hard data did not confirm this view, so now I think we're in a position to expect reasonable but not stellar growth going forward.

In the meantime, headline and core inflation have not subsided to the extent that one might have predicted based on the estimated size of the output gap. One reasonable interpretation is that the output gap is not nearly as large as suggested by conventional analysis. Reverse engineering the output gap using the method of Laubach and Williams—our colleague just to my left here—for instance, suggests that movements in core inflation are indicating a gap of about 2 to 3 percent, much smaller than suggested by other metrics. This makes a lot of sense if one is willing to attribute some of the growth in the past decade not to fundamental factors but to an unsustainable bubble in housing and real estate more generally. Indeed, this fits with our rhetoric about the past decade very well. I think this hypothesis bears careful watching during the coming quarters and years. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. The incoming data since the last meeting have generally confirmed my previous views about the outlook. Growth picked up a bit after

having slowed in the first half in response to several temporary factors. I was particularly pleased by the strong growth in final demand in Q3. I think 3.6 percent was more than a lot of economists expected.

Certainly, some of the rebound represented the passing of the effect of energy price increases and supply chain disruptions that held down spending earlier in the year. I'm struck, though, by the disconnect between household and business spending and the general despondence expressed on surveys and in conversations with our contacts. Given the news and commentary on the debt ceiling negotiations and European debt crisis beginning at the start of August, I might not have been surprised if falling confidence had led to a general free fall in spending in August and September, but instead, both retail sales and business fixed investment made decent advances last quarter. Consumers and firms seem to be expanding their spending based more on their individual economic fundamentals than on broader, more media-driven worries. Having said that, these fundamentals are by no means ebullient, and there still seem to be serious impediments to a more robust pace of economic expansion. I've talked before about what seems to me to be restraining the recovery, and I don't have much to add. I was impressed with President Lockhart's account.

The only thing I will add is that we continue to hear new anecdotal reports related to these impediments, and I'm going to share two with you. One is from an employment agency in West Virginia saying that unquestionably the biggest problem in hiring skilled and unskilled workers was the inability to pass a drug test. Other firms in the area have reported the same thing. We've gotten some reports, not quite as prevalent, outside of West Virginia. Many say that the problem has gotten worse recently. I asked someone to look into this to try to get a sense of whether this has become a bigger problem recently. Apparently the big increase in the

prevalence among firms of drug screening was in the late 1980s and early 1990s in response to new, low-cost screening tests and some new federal regulations that were related to safety. So it doesn't look as if we've had a technology shock or rapid decline in the cost of drug screening or anything like that. Now, illicit drug use, though, is more prevalent among the unemployed. Of those who are unemployed or not working, 17.3 percent are drug users, compared with 7.9 percent of full-time workers. So forget the worries about full-time workers. The increased incidence of unemployment by itself would increase the frequency of bad drug tests. One suspects that usage increases the longer one is unemployed. You also expect the other causality—that usage would cause a lower exit rate from unemployment, but I'm not aware of any data on that, so I can't really say I've been able to document that. There also may be a regional component to this. Industries in which screening is more prevalent are mining, utilities, and transportation, and they're much more prevalent in the West Virginia economy. That might be why it's more of a problem in West Virginia. Now, usage doesn't appear to be higher than the national norm in West Virginia—we checked that. But we do hear widespread reports about hard drug use, OxyContin and methamphetamine, in Appalachia and other rural parts of our District—in particular, Appalachia. And there could be a demographic angle to this. Some of our contacts say that drug use is more of a problem with the younger generation, versus alcohol being the predominant problem among older workers. Obviously, demographic characteristics associated with higher drug use are also associated with higher unemployment. Drug abuse and the hardship involved in unemployment aren't really laughing matters; it's hard to pin this down quantitatively, but it strikes me that there could be something meaningful there as a contributor to impediments to labor market functioning.

I'll pass on just one other comment, and this is from a business owner who notably—it became quite obvious in our advisory council discussion; he's a member of one of our advisory councils—is a staunch Democrat. We asked at the very end of the council, "What's your number one worry about your business going forward?" And he said, "Obamacare." He has a brewery and a 56-employee restaurant, and he said he was thinking of "playing games," as he put it, to get his employees down under the 50 mark, where a bunch of things kick in. We've heard similar concerns from others in our District, and this could be a widespread concern, obviously, among small businesses.

So those are my two anecdotes of the meeting. I realize anecdotes are murky as evidence. You have to look for an accumulation of these things, see if there's a tenor to them. But we're struggling to understand what's impeding growth, and what you can torture out of the macrodata is fairly limited at times, so I think it's useful to buttress our understanding with these, judiciously interpreted. My best guess is that no one single problem is holding things back. It's a combination of a bunch of things that people have mentioned at many of our recent meetings.

My growth projection is relatively guarded, like the Tealbook's. I think growth is most likely to rise, but only gradually over the next few years. I wrote down 3½ percent for 2014, but without much conviction. I put significant probability on a soggy path. I think growth could well average more like 2½ percent for the next few years.

I'm less pessimistic on inflation, but I don't see a lot of evidence of a decline anytime soon. Headline inflation numbers remain high. The PCE figure for September was 2.9 percent year over year and 3.3 percent over the previous months. It's true that the core index was flat for September, but that was largely due, as President Pianaalto said, to volatile components, like apparel and autos, that were high earlier in the year. I think it's too soon to say we're seeing a

downward trend in core inflation in the data so far. Futures markets prices for Brent crude indicate only modest reversal of the run-up in prices that started in late 2010. As a result, I see little chance that a decline in energy prices is going to help us out by dragging down the headline inflation numbers and maybe passing through to core. I expect core and headline inflation to run around 2 percent, maybe even a little bit higher, going forward. I think that's an inflation outlook that, according to our SEP responses, most of us would be pretty happy with. I, of course, put down 1½ percent for my SEP response under appropriate policy. So I'm one of those people with diverging forecasts and SEP responses.

All in all, the outlook for the real economy is disappointing, to be sure, but I remain in the camp that ailments are largely beyond the power of monetary policy to correct. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Well, it sounds as though your drug use anecdote could argue either way. It could argue for more stimulus to get more people off the streets, right?

MR. LACKER. Get them off the street?

CHAIRMAN BERNANKE. Well, off their drug use.

MR. LACKER. I think a lot of people use in their homes.

CHAIRMAN BERNANKE. Okay. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Economic activity in the Third District has picked up a bit since our last meeting. And although downside risks remain, I think tail risks have lessened somewhat, and the risk of recession has diminished. But events in Europe today—you never know. Wait until tomorrow; something else will happen.

Our Business Outlook Survey of regional manufacturing showed a rebound into positive territory in October after two months of negative readings. The general activity index actually

rose from minus 30 in August, to minus 17 in September, to plus 8 in October. I think that's a remarkable swing in the period of three months, and part of that is related to what I mentioned here last time—that in October, the survey week was the week of the S&P downgrade of the U.S. debt, and the week of the September survey was the week of the hurricanes and floods in New Jersey and western Pennsylvania, which had a dampening effect, so to speak, on the outlook. But consistent with this improvement in general activity, both shipments and orders turned up as well. Employment readings remain positive, although weaker than they were earlier in the year—there's no question about that. We did ask a special question on our October survey about employment. The good news is that far more firms reported they had increased employment this year than had cut staffing: Indeed, nearly half—46 percent—had increased employment, and less than 25 percent had decreased employment. Less-good news was that most of that occurred in temporary employment.

Contacts with directors and the business community echoed many of President Lockhart's comments about jobs and challenges. It's not just mismatch; it's also the problems that—whether it be drug testing, which is a very common theme I hear. The other common theme I heard is work ethic. An employer in the Third District who owns, I think, 60-some-odd McDonald's restaurants in southeastern Pennsylvania and New Jersey says passing drug tests, passing literacy tests, and work ethic are the primary problems he has in hiring people, as far as he's concerned. It's also true in the city. I have an anecdote from my wife, who attended a meeting in the city of Philadelphia of a group that was engaged in trying to encourage both the city and businesses in Philadelphia to hire more people. Unemployment in Philadelphia is quite high, obviously, and our mayor, Mayor Nutter, in responding to this group, said, interestingly, “We have over 1,000 job openings in the city of Philadelphia, and the problem is not that there

are not people hiring. One report is that we can't find enough people who understand that literacy, work ethic,"—again—"and drug testing are a big impediment to this city actually hiring people." He made a very impassioned plea about that, and of course, it turned into a discussion of education and other things. So I think that's not an uncommon thing to hear these days among employers.

On the other hand, employers who are hiring high-skilled workers—engineers, technicians, and computer people—are clamoring for employees. One person told me that when they hire an engineer, they rarely hire him or her out of the unemployment pool; they're actually hiring the engineer from other firms, and that seems to be a very common theme as well.

Nevertheless, the weak indicators of employment in our manufacturing survey are consistent with weakness in labor markets overall. Payroll employment in our three-state region dropped over 1 percent on an annualized basis in the past three months, compared with nearly a 1 percent increase in the nation. In our District, state and local government downsizing has played a big role in the reductions in overall jobs.

Residential real estate markets remain weak. Market delinquencies and new foreclosures continued to improve in the second quarter, but coping with the growing inventories of foreclosures remains a serious problem, especially in New Jersey. According to RealtyTrac, the foreclosure process for loans foreclosed on during the third quarter averaged 974 days in New Jersey, compared with 336 days nationally. The long process time in New Jersey stems from the superior court decision in December 2010 to review bank foreclosure practices, and that was not lifted until mid-August. In the meantime, most banks stopped filing new foreclosures in New Jersey, and so we have an unusually high level of foreclosure, which will continue to burden house prices, particularly in New Jersey, because of this process. In contrast to the residential

sector, commercial real estate markets seem to have steadied somewhat and even improved slightly in the region. Indeed, in some submarkets of commercial real estate, rents have risen and vacancy rates have come down.

Retail sales in the region were mixed over the past few months. Our contacts expressed hopeful optimism for strong holiday sales but weren't sufficiently convinced to commit much to building inventories. Car dealers appear to be more optimistic. With supply surges, they have been able to raise prices and sell cars without promotions. I also have a contact at a very large New York retailer, and she reports to me that at this large store, retail sales have been surprisingly good—which is consistent with the data we got—and that they continue to be good going into October. And they are actually looking for a reasonably positive holiday season. That suggestion is consistent with other traffic on transportation that's been referred to. I have a director of a company that both builds and leases railroad cars nationwide. They report that the demand for railroad cars is very high and leases are high, and they're raising prices on a fairly steady basis.

The outlook is for continued modest recovery in our District. It's nothing to get excited about. They expect slow recovery in activity over the next six months but are not predicting a recession. Contacts there say that they are waiting for more substantive and persistent signs of growth before taking on any more risk.

On balance, the national economy appears to be weathering the heightened level of real and financial uncertainty unleashed by the growing fiscal problems in both Europe and the U.S. The data over the intermeeting period have come in somewhat more positive and are consistent with our forecast that growth will strengthen after the temporary factors holding back the economy in the first half of the year. So far, the economy, I think, is showing more resilience in

the second half than many anticipated. Third-quarter GDP, as many have mentioned, was quite good relative to the dire expectations of August and early September. Labor market indicators have stabilized rather than deteriorated as some had feared. Consumer confidence remains low, but retail sales have been somewhat stronger than expected. And production and investments continue to grow.

Overall, recession risks have receded considerably since our last meeting, but as we know, the risk and uncertainties remain high. News from Europe has been the dominant driver of financial markets over the intermeeting period, swamping the effect of Operation Twist, in my mind, and more-positive underlying data on the domestic economy. The European fiscal situation remains precarious, but some positive steps have been taken. However, it remains to be seen, as has been reported, whether it will all hang together in some form or not. In the U.S., the “supercommittee” deadline looms large on our fiscal policy, and the outcome of that will also likely affect consumer and business confidence in the coming months. We’ll need to see whether that is positive or negative.

Nonetheless, my modal forecast is that the economy is poised to grow just slightly above trend, maybe, from 2012 through 2014. That suggests a growth rate of about 3 percent. With a moderate pace of growth over that horizon, labor market recovery is going to be gradual, and it’s going to be painfully slow and unsatisfactory to many people. The unemployment rate will move down but very, very slowly.

I anticipate that headline inflation will pull back a little bit, with about a 2¼ percent increase in 2012, and then focus around 2 percent from 2013 through 2014. But in my view, that’s predicated on a somewhat tighter monetary policy than is in the Tealbook forecast. In

order to keep expectations of inflation well anchored, the Committee will likely need to commence policy tightening before mid-2013. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you. The way I would characterize the outlook is, we got a little bounce that we were hoping for. The positive of that is that the sharp drop we saw in household and business confidence does not seem to have led to a pullback in hiring or spending, but I think we shouldn't get overimpressed by 2½ percent growth in the third quarter. Some of the bounce was due to temporary factors such as autos, and the increase in consumption was accompanied by a pretty big drop in the household saving rate, which may indicate that there is actually some stress on household balance sheets. And finally, some significant obstacles to growth remain.

In my mind, there are three key determinants of the outlook over the next few quarters. The first one is Europe, and we saw earlier how powerful the contagion was back to the U.S., especially in terms of those financial intermediaries, like Morgan Stanley, that have very limited access to the Fed's lender-of-last resort function. If Europe goes badly, then there is a real risk to the U.S. financial system; and then, by extension, to financial conditions; and then to the real economy. So although the bilateral exposures don't look so great, the actual consequence would be quite severe. On Europe, I agree with Steve's characterization that there is lots of assembly required, probably a few missing parts, and no real assurance that it's going to work in practice.

A couple of things I would note. The first thing about the Greek restructuring that's really quite interesting is that even with a 50 percent haircut, full participation of all of the private-sector participants, optimistic assumptions on growth, and the fiscal austerity package being implemented, they still end up with a debt-to-GDP ratio of 120 percent in 2020. Now, the

reason why this is happening is that as more and more Greek debt gets socialized into official hands like the ECB and the IMF, the haircuts to the private sector have very diminished consequences to the total Greek debt burden. So I think that really raises a question: Is 50 percent restructuring enough, or is this the first in a series of Greek restructurings? Or is Greece ultimately going to default?

The second issue associated with the Greek restructuring that's noteworthy is, it's not clear that this is being done in a way that actually makes other sovereign debt look more attractive. You could argue that it makes it look less attractive because, one, you now have the precedent of restructuring in place, and, two, as we discussed earlier, if the CDS are not triggered, then you no longer have a way of hedging your sovereign debt. So I think in some ways, this actually makes the rest of the European debt look a little bit less attractive. If you can subordinate the Greek debt holders, the more that the ECB buys of Irish, Portuguese, Spanish, and Italian debt, you're essentially de facto subordinating those holders as well. And I think at some point, they're going to catch on to that.

The second thing I would say about Greece—we talked about this before: the bank recapitalization. They have a €106 billion shortfall. But press reports indicate that very little of this is expected to be met by new investor equity. In fact, most of it's going to be done by retained earnings, changing business model, and deleveraging. I think one of the real key questions is, how does that deleveraging hurt economic growth—and then does that feedback make it more difficult to make progress in terms of fiscal consolidation?

Lastly, there are two more issues with Europe—the next one is, does the EFSF actually have enough capacity to do all the things that they need to do? The reason we have this 20 percent first-loss piece is that the EFSF has only €440 billion of capacity, and a lot of that

capacity is already spoken for in terms of Greece, Ireland, and Portugal. So you have a pretty Rube Goldberg type of machine, and nobody really knows if investors are actually going to have much appetite for this debt that has a 20 percent first-loss piece. And then the final thing, the thing I think was probably the most disappointing regarding the European announcement—there's really no vision yet at all about where Europe is headed over the medium to longer run. What's the exit strategy of all of these programs? How are they going to enforce conditionality in terms of fiscal consolidation on an ongoing basis? How do these countries reenter the market and actually issue debt to private investors two, three, four years down the road? I'm pretty pessimistic about what's actually going to transpire in Europe. So that's issue number one.

Issue number two is housing, and I think there are a lot of problems there. Obviously, the first problem is the high loan to value. Mortgage holders are locked into high-coupon mortgages, and that's basically impeding the power of monetary policy to actually support the housing sector and household consumer spending. The second problem is the slow pace of foreclosures that you highlighted, which is bad in itself, but it also creates a greater incentive to default because if you already know it's—what was it, 397 days until the foreclosure actually is ended?

MR. PLOSSER. In New Jersey, it was 900 days.

VICE CHAIRMAN DUDLEY. Sorry—900 days. You can live in the house for a long time rent free before they actually catch up with you. Also, you have the problem of getting the Real Estate Owned once it's foreclosed back into the market. We have a very peculiar situation right now where rents are rising despite the fact that we have a glut of unsold homes. And that's a really peculiar situation. Now, the good news, of course, is that the Administration is taking another stab at helping high-loan-to-value households refinance. But as I read it, the program

seems pretty limited in scope, and the terms are not as generous as they could be. Also, the Administration program is focused just on that one aspect of housing.

I view housing as really essential because if you stabilized housing and housing prices did stop falling, not only would that be good for the housing sector itself in terms of provoking more demand for housing, but I think it would also be very important for household wealth and household confidence. So it could actually have pretty significant effects for consumer spending. But I don't think we're there yet.

The last issue is fiscal policy. There are two real issues here. First, fiscal policy, in the absence of policy action, is going to be turned sharply restrictive at the start of 2012. I think we're understating the potential significance of that. Second, we have policy dysfunction in Washington, and that's also important because it has an independent effect on household and business confidence. In this respect, the outcome of the supercommittee deliberations is important, not just for what they do or don't do in terms of long-term fiscal consolidation—but also, if they do something tangible, it will actually be good for household and business confidence, and if they don't, it won't, because then we'll just be on hold through the next election.

My view is that we're going to see moderate growth over the near term. But until these three issues—Europe, housing, and fiscal—are addressed in a way that takes them off the table, I view the risk as very much tilted to the downside. Now, if all of them were addressed positively, I could actually see the economy surprising on the upside. And the reason for that is, a lot of people are on the sidelines, holding back, because they're uncertain about the outlook. When I talk to businesses, especially small businesses, I actually hear a lot of people say, "I'm okay, but I'm not doing anything right now." So if we could just take care of these three problems, we

could actually have a pretty good outlook. But unfortunately, there's not a lot of power in this room to do much about it. My own view is, we should be highlighting these three issues, and, especially on housing and fiscal, we should be pressing the Washington policymakers, both publicly and privately, to do something about these things. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. Three working hypotheses have guided my thinking about the economic outlook. All three received support from the data during the intermeeting period. The first is that growth during the first half of 2011 was significantly depressed by transitory factors: sharp increases in the prices of imports and commodities and disruptions in global automotive supply chains. That hypothesis is consistent with the recent rebound in the spending data.

The second hypothesis is that those transitory factors also boosted consumer inflation. Thus, with well-anchored inflation expectations and subdued growth in compensation, I expected that as those transitory factors waned, inflation would subside to levels at or below the mandate-consistent rate. This hypothesis has also been confirmed by recent readings on consumer prices. In fact, the prices of core goods have been practically flat, rising at an annualized rate of only 0.2 percent over the three months ending in September, compared with a rate of about 3½ percent over the prior three-month period. Meanwhile, services prices have been rising steadily at a 2 percent pace over the past year. The latest three-month reading on core PCE inflation is now back down to 1½ percent and seems likely to decline a bit further going forward.

My third hypothesis is that economic growth has only limited upside potential due to the persistent headwinds that are restraining aggregate demand. Because the odds are so low that the recovery will gather any real head of steam, unemployment seems likely to linger at dismally

high levels for many years to come. Incoming data suggest that spending in the third quarter was somewhat stronger than I had anticipated, and the composition of growth may foreshadow slightly stronger growth in the fourth quarter as well. That said, nothing in the data dissuades me from the view that growth will gain momentum only gradually, and that view is also evident in the Tealbook and in the consensus outlook of professional forecasters. The key factors holding back spending are well described in the Tealbook and include unusual pessimism among households about their future income and financial prospects, declines in the values of homes and financial assets, still-elevated debt levels, and reduced access of households, particularly those under water on their mortgages, to credit.

The daily readings on consumer sentiment from the Gallup and Rasmussen surveys did point to some improvement over the past few days in the wake of Europe's announcement of measures to address its financial crisis and the attendant rebound in the stock market. I'll report tomorrow morning on how things look. But even with that slight rebound, consumer sentiment has simply reverted to exceptionally low levels that were seen in late July.

Other drags on the recovery include persistent dysfunction in the housing and residential mortgage markets and budget pressures that are restraining spending at the federal and state and local levels. Moreover, incoming information points to a more significant slowdown in European growth, a development that's having spillover effects on the global economy and is likely to damp the U.S. economic outlook.

Turning to risks to the outlook, I still see those risks as weighted to the downside, although there's slightly more balance than in our last meeting. Incoming data diminish the odds that the economy is about to slip into recession. But the odds still remain very high, in my view, that there will be negative spillovers from the European debt and banking crises, and I consider

this the number one risk affecting the outlook. European developments could still derail our recovery, and I think this is a scenario that's very well illustrated by an alternative simulation in the Tealbook.

My long-standing concerns about the ability and willingness of European policymakers to address their sovereign debt and banking issues effectively were reinforced 10 days ago, when I attended the meetings of the G-20 governors and ministers and their deputies in Paris. I had a chance to see, up close and personal, that the key players were still very far from having nailed down crucial elements of the deal only days before their self-appointed deadline. Glimpsing how the sausage was made was not at all reassuring. Of course, like many others around the world, I did breathe a huge sigh of relief when the euro-area leaders announced agreement last Thursday on a comprehensive package of measures to address Greece's unsustainable debt situation and the vulnerabilities of European banks and sovereigns, and presented a road map for stronger coordination and constraints on fiscal policy. But I'm not at all surprised to see a turnaround in market sentiment, and I fully expect that the road ahead will be long and will involve lots of scary turns and steep cliffs along the way. As Brian noted, of course, spreads on the debt of most peripheral countries barely budged, even after the agreement was announced, and at this point, spreads on Italian debt have reached new highs.

Here I'm going to pick up on some themes that Bill and Steve mentioned, but in my view, there are a number of reasons why substantial downside risks are likely to continue not for months but for years to come. In the first place, Greece, Ireland, Spain, Portugal, and Italy have all committed to further deficit reduction, and the adjustments called for by Greece and Ireland are exceptionally large. Fiscal contraction on this grand scale, at a time when economic activity in Europe is already weakening, will further undermine growth. From the perspective of

markets, this creates severe implementation risk. And as Bill and Steve noted, if you just take the case of Greece, even with a 50 percent haircut, the troika plan to stabilize Greece's debt-to-GDP ratio near 120 percent involves very tough fiscal targets, which are quite likely to be missed if growth falls only slightly short of the pace assumed in the analysis. Historically, large fiscal adjustments have typically occurred in situations where higher real export growth, reflecting a depreciation of the country's real exchange rate, could compensate at least partially for fiscal drag. No mechanism other than slow growth of wages and prices, along with structural adjustments that tend to be difficult and slow, is available here to restore competitiveness.

A second concern of mine—and Bill mentioned this—is the potential for a European credit crunch. The funding pressures currently afflicting European banks have already caused them to restrict credit and to delever, and these pressures may intensify as growth slows, as European banks experience pressures on their earnings and higher losses on their nonsovereign assets, and as banks struggle to meet the higher capital standards called for by European leaders and banking authorities. The leaders' statement, as Steve and Bill noted, does stress the importance of ensuring that capital raising not cause excessive deleveraging, but there is no mechanism in place to prevent banks from shedding assets. Moreover, even with more capital, European banks remain highly vulnerable to further sovereign debt problems given their enormous exposures. So the soundness of the banking system can be assured only if the sovereign debt issues are decisively addressed. Negative feedbacks between economic performance, the health of the banking sector, and the default risk of sovereigns that stand behind their banking systems create the potential for vicious downward spirals.

A third concern is that no matter how clever the arrangements to leverage the EFSF, without substantial participation by the European Central Bank, the underlying funding may

simply be insufficient to cover a new Greek package, to backstop bank recapitalization, and to offer credit enhancements sufficient to ring-fence Italy and Spain, given the enormous borrowing needs of those countries over the next two years. To me, it's highly questionable whether investors, including banks, will be willing to buy Italian and Spanish debt at yields that don't threaten debt sustainability.

And finally, with respect to European politics, as the European leaders' statement emphasized, progress on fiscal integration in Europe is necessary to the success of the euro, but exceptionally difficult politically. And the governments, as we can see in Greece and Italy, already seem close to the breaking point.

In summary, my modal outlook is that the European leaders will succeed in addressing these challenges, but only over a painful and protracted period. In the meantime, we'll need to monitor European developments closely and stay alert to the associated risk to financial stability and economic growth.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I used the "Extended Tealbook Baseline" forecast in my projections, but unlike the Tealbook and most of you, I see the risks to growth as balanced—sort of. [Laughter] I can't discount the potential for a really bad shock coming from Europe. If rumors that someone has a plan to make a plan can brighten markets considerably, then all of the nasty realities that are sure to unfold over time can't be good for Europe or for us. In fact, even without actual spillover from actual crisis conditions, the headlines so far have been enough to swamp or at least mask the effects of our own policy actions. So that's the obvious downside.

But beyond the risks coming from Europe, I think there's a good case to be made for the "Faster Snapback" scenario. Admittedly, the faster snapback results have gotten progressively less snappy over recent months, but I think there are elements of balance sheet repair, confidence, and credit conditions that can be viewed optimistically. Beginning with balance sheet repair, business balance sheets might be in the best shape ever. Debt has been reduced or refinanced at ever-lower rates. Companies are awash in cash. Continuing and growing cash mergers and stock repurchases signal that production-related uses of cash are not yet attractive, but provide evidence of the temptation to employ that cash opportunistically. And banks that have seen growth in C&I lending report that the borrowers are still keeping high cash balances rather than using their own cash before tapping bank lending. Finally, commercial deposits at banks continue to grow at an astonishing pace.

Even household balance sheets are in better shape than they appear. With the exception of mortgage debt, consumer debt has been reduced significantly. Admittedly, much of the reduction has come through charge-off and bankruptcy, but that's exactly the point of bankruptcy—a fresh start. And even though overall debt to income is still high, much of that debt is in mortgages with long amortization schedules. So the burden of debt, the monthly payments compared with net income, is at levels not seen since 1994. Delinquency rates on auto and credit card debt are at the bottoms of their historical ranges, indicating that those who still have credit are carrying it pretty comfortably. For mortgages, despite repeated calls for principal write-downs, I don't see that happening in any meaningful way, but foreclosure represents an absolute write-down of principal in the same way that charge-offs and bankruptcy wiped out other consumer debt. Mortgage modifications have leveled off at low but steady rates, and re-default rates on modified loans are improving. Rates of transition into delinquency status are

also improving, and the size of the foreclosure pipeline is beginning to gradually decline as foreclosures in nonjudicial states have resumed and foreclosures in judicial states begin to trickle through. Policy focus has finally moved from an emphasis on loan modifications to dealing with the impact on housing values and neighborhood stabilization issues that result from large numbers of distress sales. Lower mortgage rates, combined with an easing of credit standards for refinance and purchase mortgages and responsible REO disposition, could actually speed the final completion of household balance sheet repair. I'm optimistic that there are policy paths that could accomplish this.

Finally, financial institution balance sheets are the mirror image of those of businesses and households. Loans are down and deposits are up, leading to loan-to-deposit rates that are lower than they've been in decades. Deposits have been used to pay off wholesale funding, and all measures of liquidity look strong. Problem assets are steadily coming down, and those that remain seem more heavily weighted toward long-term workouts than losses waiting to happen. Capital levels are strong, and with credit losses posing less of a threat to capital, most banks returning to positive earnings, and a regulatory lid on payouts of capital, this capital strength seems more real than it did in 2008.

Turning, then, to sentiment, it's true that measures of business and consumer sentiment turned sharply negative, but it's not as clear that the change in sentiment led to equally sharp changes in behavior. A number of bankers I spoke with noted that from their perspective and the perspectives expressed by their customers if they hadn't listened to the news or read a newspaper, they wouldn't have noticed that anything had changed. Incoming business financials still show strong or at least improving results. Businesses are cautious about investing and hiring but are not necessarily pulling back. Business customers report already being fully prepared for

weaker or even double-dip conditions. And finally, consumer credit and debit transaction data didn't show any change that would correspond to the drop in confidence. It seems to me entirely plausible that consumers and businesses that hunkered down in the face of the Great Recession have not yet unhunkered and that they are still ready for the worst. If it comes, if pessimistic forecasts are correct, it won't really change anything in their behavior. On the other hand, if there were somehow to be some sustained good results, such as strength in sales or improvement in consumer income, I think that could translate into some positive change in behavior, and as we've all experienced in the past few weeks, the good news doesn't have to be all that good to surprise you if your expectations are low enough.

Let me turn now to the final headwind that I can envision dissipating more quickly and creating the condition for a faster snapback, and that's credit conditions. The number one financial problem faced by banks is a declining net margin. Many of them blame this on us and the low level of rates, but I believe it's due to the mix of assets on the balance sheet—specifically, the dearth of good lending opportunities. Competition is fierce for C&I loans. Banks are chasing them with rates, terms, and calling officers. When they find a good credit, they're willing to hold a much bigger piece of it. Appetite for commercial real estate loans now follows the fundamentals, vacancies and rent levels, which will in turn follow the economy. More banks are entering the auto finance business, where competition is also strong. Credit card solicitations are picking up, even though the Credit Card Act has likely changed credit terms permanently in this space. Banks are holding onto more of their mortgage production, even though most of them are not willing to offer the full spectrum of credit eligible for GSEs or the FHA. And credit is still tight for small businesses, especially those that have struggled over the past few years. But there's room for policy to improve credit conditions in both small business

and mortgage. Indeed, we have “blue sky” groups here at the Board thinking about both of these, and if we can figure out a way to improve conditions in these two markets, then I think we could cause this headwind to dissipate more rapidly.

So while I recognize that the economy is vulnerable to shocks and that there are many potential shocks, including the looming potential in Europe, I think we’re closer than we might realize to completing the debt burden cycle. And there are some possible policy actions that could speed us closer to some potential positive shocks as well. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO: Thank you, Mr. Chairman. I’m going to jettison most of the notes that I had prepared because someone has said most of these things—though not with the literary allusions that were included in my notes—and I want to address instead labor market issues.

I think it’s worthwhile looking at the data rather than just relying on anecdotes, and as we think about what’s happened in the labor market over the past few years, it’s important to draw a distinction between what has happened in the past few years, presumably as a result of the recession and its aftermath, on the one hand, and the very real long-term problems that we’ve got in the labor market in this country, on the other hand. Basically, we’ve got to look at the delta, and I think once we try to look at the delta rather than to absolute numbers or anecdotes that can be drawn from one source or another, the picture becomes rather more clear.

There are a variety of hypotheses about why structural problems may be greater and greater as the result of the recession. One that has been alluded to today is, we had a bunch of bubble sectors where there was a lot of lost employment, and so one would expect that people in those sectors would have difficulty becoming reemployed. In the mid-’70s, we had a very serious recession with a lot of lost employment in the Midwest in manufacturing. There were

concerns then about whether there was going to be increased structural unemployment, but a retrospective look suggests that that was not the case. There are always some sectors in a serious recession that suffer significantly, and at least to date in the experience since World War II, we haven't seen a particular impact on long-term structural unemployment increases. Something may be different this time, but we've got to point to whatever it is that's different this time than in the mid-'70s or early '80s.

Second, we have the concern that because there's been long-term unemployment of an unusual and, indeed, unprecedented—since the data series was developed—nature, it seems logical to infer that there's going to be more structural unemployment there, that people are going to have more trouble getting back to work. I think at some point, that is going to become a phenomenon, but again, the data to date suggest or allow us to conclude, perhaps a tad counterintuitively, that the probability of reemployment declined in about the same amounts for the short-term unemployed and the long-term unemployed and has since risen in about the same amounts for the short-term unemployed and the long-term unemployed. So, to date at least, this hasn't happened.

Third, we've got a Beveridge curve phenomenon, which I refer to as shorthand for a lot of the points about vacancies and mismatch and the like. Economists at the Federal Reserve Banks of Cleveland and San Francisco have done a very nice job of going back pre-data series, pre-JOLTS series to try to construct from other data approximate Beveridge curves that, again, cover the two serious post-World War II recessions. And just as we saw this time, the Beveridge curves get pushed out, and each time, the Beveridge curve comes back. There's still debate apparently among the labor economists, including the very good labor economists at the Cleveland and San Francisco Feds, as to exactly why that was, but it does seem as though, when

you have an awful lot of unemployment growing pretty quickly, there's a generalized disruption in labor markets, which makes employers more likely to wait longer to fill vacancies, in particular. It may turn out, Dennis, that the purple squirrel phenomenon is more widespread than people think, because there does seem to be some sense that standards for hiring go up during periods of high unemployment since employers are saying, "Gee, there must be somebody good out there somewhere."

Finally, to the phenomena of a lack of literacy and of drug use, these are not new phenomena. These are not deltas from the recession. We had these problems 25 years ago when I was working on the Senate Labor and Human Resources Committee. I spent time in the city of Philadelphia with a school-to-work program, in which the greatest problem identified was the failure of individuals to understand they had to show up to work every day. We had that problem 25 years ago, 20 years ago, 10 years ago; we have it today; and we're going to have it 5 years from now. It is a real problem for the productive potential of the country. It is not an argument for the proposition that structural unemployment has increased during and as a result of the recession. I do believe that structural unemployment has increased some, and I was actually a bit surprised when we went through all the data, that the data don't suggest it has increased even more so far.

The last point I would make, which I think is very important and gets to what John was referring to earlier, is that at some point, all of this becomes a self-fulfilling prophesy. If there is no aggregate demand, if there isn't increased employment, if the productive facilities in both the manufacturing and service sectors that are lying fallow now do not get back into use, the productive capacity of the country and structural unemployment will go in the wrong direction. We are fortunate in that it doesn't seem as though we are there yet, but it also strikes me that the

tipping point may not be that far away. And I think we can't continue to come here as we have for the past two years, straining to see green shoots coming out of the ground—saying, “Oh, the signs of spring are now here”—and therefore to say we need not take any more action, only to see another snowfall the next month. I hope Betsy is right. I hope that the underlying structural conditions are getting closer to the point where there's more self-sustaining momentum in the economy, but even if there is some of that, it's not going to move us very far or very fast in the face of an awful lot of cyclical unemployment.

What we should do about it—I guess I'm supposed to save that for tomorrow, so I will.
Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. The economy remains mired in the worst slump since that of the 1930s. While recent readings on retail sales, capital goods orders and shipments, and nonresidential construction have turned up, important indicators of near-term economic activity remain downbeat. Business surveys point to continued caution, conditions in the labor market have not brightened, and gains in industrial production, excluding the motor vehicle supply chain, remain sluggish. These disappointing indicators likely reflect the fact that the factors that have been restraining the pace of the recovery are still in place. The large overhang of vacant housing units remains, credit availability remains impaired, and risk premiums remain elevated. In the interest of time, I won't comment on the European situation or the housing situation or the fiscal situation. I also won't comment on drug use among non-purple squirrels. Instead, I just want to talk for a minute about consumer sentiment, which is another factor likely continuing to hold back the recovery.

Confidence measures are at historic lows, and recent measures of confidence remain exceedingly low, probably due to households' concerns about low future income and wealth, which tend to depress consumption. Despite last week's report showing a 0.5 percent increase in real consumer spending in September, a welcome surprise for sure, I'm not optimistic that households are ready to be an engine of growth for this economy. For one thing, the September increase was not accompanied by rising incomes. Rather, real disposable income edged down in September and has increased only very modestly over the past 12 months. The resulting downdrift in the saving rate to around 4 percent in the third quarter might be interpreted as a sign that households are feeling optimistic again, but the lousy consumer sentiment numbers and the lack of any improvement in home equity values suggest that this is very unlikely to be the case and that consumer spending will be subdued going forward.

The lack of any meaningful increase in real incomes for the vast majority of households suggests that many are feeling pretty strapped, even those who have jobs and are not under water. This is evident in the spreading discourse about income inequality in the country, which the Chairman has been asked about. Many of us are receiving personally addressed letters to our homes from protesters, and I have the one that I received just yesterday. Page 1 reads, "End the Fed." This is typical because I do get one a day, and this is Occupy Muskegon. Many of the Reserve Bank presidents, too, I know, are dealing with Occupy Wall Street protesters in their cities and at their Banks. Regardless of how any of us feel about the merits of the 99–1 critique, we have to acknowledge that this is not only a cost of a lack of aggregate demand, a cost of long-term unemployment, but also an additional factor that is affecting social cohesion, dignity, and American optimism.

In sum, the pace of consumer spending is up, but the low level of sentiment, volatility in the stock market, and tepid gains in employment and income projected for the coming years continue to weigh on consumer spending and thus on overall economic activity. It's hard to see what string of events will eventually break this cycle, and as a consequence, I continue to expect the pace of the recovery to be subpar. Thank you.

CHAIRMAN BERNANKE. Thank you very much. Thank you, all, for a long but productive day. We have a reception upstairs, followed by an optional dinner, for those who are interested in staying around, and we will recommence in the morning at 8:30.

[Meeting recessed]

November 2 Session

CHAIRMAN BERNANKE. Good morning, everybody. Let me start with a summary of the discussion I heard yesterday. I had more time than usual, so it's a little bit longer than usual. [Laughter] You may want to pull out a pillow or something.

Participants took note of somewhat better data over the intermeeting period, reflecting in part the reversal of temporary factors that had depressed GDP growth in the first half. Final demand in the third quarter was stronger than expected, and near-term recession risks appear to have declined. There are some positive factors that may continue to support growth, including pent-up demand, accommodative monetary policy, and balance sheet repair by both households and businesses. However, most participants saw near-term growth as likely to be slow to moderate, held back by continued problems in the labor and housing markets, low confidence, financial market volatility, and fiscal restraint. With relatively modest economic growth will come only a very slow decline in unemployment. The downside risks to growth appear to have become somewhat less severe since the last meeting, but that assessment depends very much on European developments. Potential output may also be lower than had been thought, and the risk of a lost decade has risen. Inflation will moderate with commodity prices, although core inflation has come down more slowly than expected. Most participants expect inflation to moderate to 2 percent or below in the medium run, with many seeing the risks as approximately balanced.

Households remain very pessimistic and expect little to no improvement in their financial conditions. Income growth has also been tepid, reflecting in part the relatively slow pace of employment growth. Notwithstanding these factors, consumer spending has recently been stronger, and there is scattered optimism about holiday sales. However, some of the strength in

spending reflected lower saving rates, casting doubt on its sustainability. Some indicators of labor market performance have been slightly better, but the job situation remains very difficult. There was an extensive discussion of the degree to which unemployment reflects structural factors. Employers complain about unqualified applicants, including those lacking basic skills, and some will hire only so-called purple squirrels. [Laughter] Skilled workers are in high demand. Reverse engineering slack from core inflation suggests that the gap is lower than estimated by the Tealbook. On the other hand, many of the problems regarding the workforce are of long standing, and the Beveridge curve estimates for earlier recessions show that the pattern of vacancies and unemployment this time is not so unusual. Long-term unemployment may ultimately lead to more structural unemployment, but we may not yet have reached that point.

The housing market remains lackluster in most areas, except for some improvement in multifamily construction. Foreclosures remain a serious problem, and there are long delays to resolution. Mortgage eligibility conditions remain tight, notwithstanding some government initiatives, and LTVs are high in many cases, both of which are impeding purchases and refinancing. However, attention to factors affecting the housing market, such as REO management, refinancing by high-LTV borrowers, and neighborhood stabilization, could help this situation.

Reports on businesses are mixed. Some firms are pessimistic and cautious about the outlook. There are continued complaints about economic and political uncertainty, including uncertainty about fiscal policy, regulatory policy, demand, and the European situation. Hiring plans are on hold, or firms are looking to use temporary or part-time workers. Capital investment to increase productivity continues, however, benefiting from low interest rates. Input

cost pressures have abated somewhat, and wage costs are low. Profits and balance sheets are healthy. Autos are seeing modest improvement in sales and production, agriculture and energy are doing well, and there were some positive anecdotes from retailers and transportation firms. Asian demand remains strong, though Europe is slowing. Low interest rates are increasing pension contributions.

Fiscal policy is becoming more restrictive, with state and local governments continuing to shed jobs. Much attention will be paid to the report of the congressional supercommittee; its importance is not just the substantive outcome, but also the demonstration of whether the government can work.

Financial conditions remain quite volatile. The recent actions taken by European leaders to address their banking and sovereign debt problems were initially well received. However, whether their actions will be successful in ending the crisis remains uncertain, as many details of the plans remain to be worked out and there are questions about whether the resources being devoted will be sufficient to provide adequate firewalls for major debtors. Sovereign spreads continue to rise, and it is questionable whether European banks can raise private capital. U.S. banks are doing relatively better, with improved capital and earnings, better asset quality, and high deposits. However, loan demand is weak, and competition for good borrowers is keeping net interest margins low. Liquidity has worsened in some markets, including wholesale funding markets. Farmland prices continue to rise with agricultural prices.

Finally, inflation appears likely to moderate as commodity price declines are passed through to the retail level. Core inflation is also slowing, though possibly more slowly than expected. Growth in wages and benefits remains subdued, although wage data are affected by skill composition and nominal downward rigidity. Inflation expectations are well anchored at

low levels. Measures of inflation trends, such as the trimmed mean or median, suggest relative stability. On the other hand, if slack is lower than believed, downward pressure on core inflation will be limited. Moreover, there is some ongoing pass-through of input costs, such as fuel surcharges. Overall, most saw the risks to inflation as roughly balanced.

Let me stop there and see if there are any comments, omissions. [No response] Okay. If not, let me make a few comments, always from the disadvantage of having to follow many good discussions.

I led off my discussion last time with a review of the European situation, and many of you have talked about it. I'm not going to go into much detail. I think there's a lot of agreement that the latest plan at least addresses the right issues, notably the Greek sustainability, the banking system, and the firewalls for the major debtors.

There's also been some attention to the longer-term solutions: How will they ultimately achieve a degree of fiscal integration that will prevent similar problems from happening in the future? I think the consensus around the table, and what appears to be in the markets, though, is that there's considerable question about the details and the firepower behind the plans that have been put forward. I can add one small observation, which is that there's a fundamental misconception in the way they're thinking about this, particularly with reference to the ECB. The function of a lender of last resort is to provide unlimited firepower, unlimited lending against collateral, and that's what the ECB is doing for the banking system by lending against sovereign debt. What's happening now, though, is that the ECB is purchasing sovereign debt, which is evidently a fiscal action and probably not appropriate for the central bank given the credit risk associated with those obligations, but political opinion is preventing it from doing what it would naturally do, which would be to lend to a bank or some facility that was using the

sovereign debt as collateral. The ECB is effectively the only institution that can provide unlimited firepower and therefore can be a completely persuasive lender of last resort, and so I think that until that intellectual confusion is sorted out, it's not clear that this is going to work. Moreover, it's going to get harder and harder, of course, because Europe is slowing, and that's not an accident. Austerity, tighter monetary policy, a credit crunch, financial volatility—all of those things are obviously not going to be good for European growth, and that makes the fiscal issues worse and worse. This is a very troubling situation, and I can only feel that while this is partly political, it's also partly a question of appropriate conception of the problem and the solution.

We are innocent bystanders, but we are very severely affected by what's happening there. In my dreams, I'd like to know what the U.S. economy could do if financial markets were in a more placid state. Given the kind of volatility we're seeing, though, that's obviously a very negative factor. So we'll continue, obviously, to watch. The G-20 meeting is coming up. I'm sure that the U.S. and other countries will press the Europeans for further action, but this is, in some sense, the key issue for us.

Turning to the U.S. economy, I think the evidence is that the near-term performance has been a little better than expected. Notably, we saw, as people have noted, good final demand in the third quarter. Consumption was relatively strong. Total nonresidential investment, including structures, grew 16 percent at an annual rate. That was fairly strong. We had good final demand, less inventory billed than expected. All that is positive for the fourth quarter. Beyond that, the September consumption reading was quite strong, putting consumption above the average of the third quarter already. The ambiguities associated with the measurement of auto production suggest that there will be less payback in autos in the fourth quarter. For a number of

technical reasons, I think the fourth quarter is likely to be a decent headline number again. So that is good.

In the longer term, I think we continue to have legitimate concerns about sustainability of the recovery. I'd note a couple of points. One is the point that was emphasized in the Tealbook about the striking discrepancy between the recent relatively stronger economic news and the continued weakness in sentiment. I think there's a very interesting question here, which research might be able to address at some point—that is, to the extent that sentiment has information in it, is it because sentiment is what economists would call a sunspot, a random thing that relates to how Lindsay Lohan is doing or something like that, which then in turn affects the economy? Or is it reflective of the fact that consumers and businesses have much more micro information, and that's being aggregated in some way through sentiment indicators, which is not showing up in the macrodata? It's not clear.

I would note again that consumer sentiment remains very low, and there are indications now that business sentiment has also weakened. President Plosser noted that the Philly FRB business outlook improved a little bit last month but is still well below where it was earlier in the year. We've seen very big declines in, say, the Business Roundtable CEO survey. We've seen analysts' expectations for capital-goods-producing firms drop quite considerably. So there is clearly a sentiment issue in business as well as in the household sector. Sentiment is like the stock market—it predicts about nine out of every five recessions. So I don't think we should overstate that, but it does remain a concern.

Another issue related to sustainability has to do with income and saving. This point was made by a couple of people. I have some sympathy for Governor Duke's view that balance sheet deleveraging factors may be running their course to some extent or may be less powerful than we

thought. We have a discussion of that planned for January, as I recall. But one indicator of that is the fact that household saving rates remain quite low, which would not be what you would expect if they were making massive efforts to rebuild their balance sheets. Instead, it feels more like consumption is being constrained by income rather than by balance sheet considerations. Notably, the September saving rate was 3½ percent. Obviously, these numbers are frequently revised, but nevertheless, we've seen relatively low saving rates, and we've seen very weak income growth. In particular, for one illustration, the NBER, in picking its business cycle dates, uses two indicators of aggregate activity. One is employment; the other is something called real income less government transfers, which is a broad measure of income being generated in the economy. That measure of real income less government transfers is basically flat since the second quarter. It declined from the second to third quarters, and if the payroll tax cut extension is not passed, then we'll see further pressure on that indicator. So the sustainability of household spending depends on continued generation of income.

That brings us, of course, to labor markets. I thought we had a very good discussion of what's going on in labor markets. It's obviously important to think about these things at the microlevel. I think I would express caution about overinterpreting anecdotes on this issue. We talked about some of the social issues that have affected labor supply. I was just checking the *Statistical Abstract* before I came in here, though, and if you check, you'll see that drug use, crime, and a number of other similar social dysfunctions surprisingly have declined in the past couple of years and certainly are on a downward trend over a longer period. So it may be that what's happening there is that rather than those things causing unemployment, unemployment is causing those behaviors, in which case that would actually be an argument for expansion rather than for nonresponse. In terms of the sectoral components, Governor Tarullo gave some

interesting observations on that. I would note that the unemployment increases are very broadly distributed between men and women, between college graduates and high school graduates, which makes it difficult to pin this on, say, construction, if women or college graduates are having the same proportional increases in unemployment as high-school-educated men, for example. So I think there are still some very open issues there. I guess the last observation I would make is the historical observation that between 1939 and 1941, after a decade of high unemployment rates and all of the social implications of that, in a society that was much less educated than we have today, unemployment dropped from 17 percent to whatever it was, 1 or 2 percent, in the war. Clearly, there is capacity for reemployment. That's, of course, an extreme situation, but sometimes demand can generate more jobs.

Again, to summarize, it looks to me as though—forecasting, of course, is always difficult—the near-term numbers ought to continue to be moderately acceptable. But I think, particularly given the uncertainties in the financial markets, there should be a very wide confidence band around our forecast for growth in 2012.

A couple of words on inflation. Generally speaking, there was a lot of agreement that inflation is under pretty good control for the moment, although perhaps not coming down as quickly as some expected. I would note, again, the absence of wage pressure. The ECI just came out for the third quarter, and the employment cost index showed total labor costs on a quarter-on-quarter basis of 0.3 percent, which was the lowest in some time. And I thought that was interesting in that among the costs included in that number are pension costs, and we had some discussion about the effects of low rates on pension underfunding and the like. It is true that pension contributions are up, according to the ECI, 9 percent on a 12-month basis. So there

has been some increase in pension funding. But if you think about that as part of the total wage bill, you're still not getting any significant increases in the cost of labor.

I would end this by offering a hypothesis I've proposed before, which is a suggestion that we do need to think about the Phillips curve in an international context, as President Fisher and the Dallas Fed have talked about before. In particular, there's an awful lot of correlation between growth rates across the world. That, in turn, drives globally traded commodities, and so moderate growth in the U.S., to the extent that it feeds through, via a variety of mechanisms, into growth in the emerging world, for example, tends to lead to higher commodity prices. It's interesting that the investment interest in commodity prices was sparked a few years ago by some papers that suggested that commodity prices were pretty uncorrelated with stock prices. That seems hardly to be the case anymore. Commodity prices have become a very sensitive indicator of global growth expectations, the result being that even if growth in the U.S. remains subpar, increases in growth expectations or even monetary policy ease can generate some inflation pressure indirectly through this global commodity price nexus. So that, I think, probably explains part of the reason why inflation has been less sensitive to domestic slack than our traditional models would suggest and why there's more sensitivity to global conditions than is traditionally the case. The effect of that is going to make inflation more volatile and more difficult to predict, more linked to global conditions, and that's going to complicate our lives going forward as we seek to manage both inflation and inflation expectations.

But again, near term, we've seen a little bit better data, and that's good, but going forward, I think we still face very significant uncertainties, not least those in the financial markets. Any final observations or comments on the outlook? [No response] If not, let me turn to Bill English to introduce the monetary policy go-round.

MR. ENGLISH.⁶ Thank you, Mr. Chairman. I'll be referring to the handout labeled "Material for FOMC Briefing on Monetary Policy Alternatives," which was distributed earlier. The handout contains the policy alternatives as well as the associated draft directives. There's only one change, which is shown in blue in alternative B, from what you saw in the Tealbook; I'll come to that in a minute. Including the various toggle switches, the staff provided a total of nine statement options in the Tealbook this round—I'm told by the Secretariat staff that this is easily our new all-time record. So staff productivity is high at least. [Laughter] To help guide you through the options, I've reproduced the summary table that was included in the Tealbook on the first page of your handout.

Turning first to alternative B, on page 7, the Committee may see the somewhat stronger-than-expected economic data received over the period as having reduced the odds of a new recession but may continue to view the still-modest underlying pace of economic growth and the continued downside risks as warranting the accommodation provided at your previous two meetings. If so, members may wish to adopt a statement like alternative B, which contains no new policy action and uses language similar to that of the September statement.

The first paragraph of the statement for alternative B would be updated to reflect the recent economic data. The second paragraph would note the expected "moderate pace of economic growth over coming quarters" and might indicate "downside risks to the economic outlook" rather than "significant downside risks to the economic outlook." Dropping the word "significant" might seem appropriate if you see the economy as more likely to be on a sustainable track than was the case in September and think that the European leadership, on balance, has made progress in addressing their banking and fiscal strains. The third paragraph would indicate that the Committee was continuing the maturity extension program (MEP) announced in September and maintaining the existing reinvestment policies.

In the fourth paragraph, the statement offers two options for the forward guidance. On the one hand, the Committee could retain the reference to "exceptionally low levels for the federal funds rate at least through mid-2013" from the September statement. On the other hand, some participants might feel that a better way to communicate the Committee's expectations would be to indicate that the federal funds rate was expected to remain exceptionally low "for the next six to seven quarters." The latter approach might be seen as desirable because leaving those words unchanged from one meeting to the next would, all else being equal, maintain a constant degree of monetary accommodation. However, if the economy evolves about as expected, the Committee would need over time to reduce incrementally the number of quarters specified in the statement, while a fixed date such as "mid-2013" could remain unchanged in that case.

The statement would end by indicating that the Committee "is prepared to employ its tools to promote a stronger economic recovery in a context of price stability."

⁶ The materials used by Mr. English are appended to this transcript (appendix 6).

A statement along the lines of alternative B would be roughly consistent with the market expectations captured by the Desk's survey of primary dealers last week and would likely have only modest effects on asset prices. Market participants would probably note the deletion of "significant" from the reference to "downside risks."

Alternatively, participants' assessments of the economic outlook may suggest that additional policy accommodation would be appropriate to promote outcomes that are more consistent with the Federal Reserve's dual mandate. Even after the monetary policy steps taken in August and September, your SEP forecasts for the unemployment rate at the end of 2013 are generally about $\frac{3}{4}$ of 1 percentage point higher than in the June SEP, while your inflation projections for 2013 are little changed and mostly at or below your estimates of the mandate-consistent inflation rate. Moreover, as discussed yesterday, many of you see downside risks to economic growth going forward.

Thus, the Committee might want to provide additional monetary policy accommodation at this meeting. The Tealbook provided two ways of doing so—by making a change to the forward guidance, as in alternative A1, or by implementing a new balance sheet program, as in alternative A2. Participants may prefer alternative A1 if they judge that greater clarity about the Committee's policy intentions is likely to provide additional accommodation at relatively low cost and risk. In particular, policymakers may see a further increase in the size of the Federal Reserve's balance sheet as potentially making the timely removal of policy accommodation more difficult, or as increasing the possibility that the value of the Federal Reserve's holdings of securities could fall significantly when interest rates move higher. However, policymakers might prefer alternative A2 if, for example, they were concerned that providing additional forward guidance about the federal funds rate path a few years hence might not be seen by investors as credible given the likely turnover on the Committee over time, and so might not have meaningful economic benefits.

Turning first to alternative A1, on page 3, the first, second, and third paragraphs of the statement would be similar to those under alternative B, though paragraph 1 would put more emphasis on the reversal of temporary factors in explaining the somewhat stronger growth in the third quarter. Paragraph 2 would reiterate that there are "significant" downside risks to the economic outlook.

The variants of paragraph 4 would reinforce the forward guidance provided in the September statement in one of three ways. First, it could simply push back the date through which the Committee anticipates that economic conditions will warrant exceptionally low levels for the federal funds rate at least through mid-2014. Second, as in 4', it could indicate that low funds rates are anticipated through the end of 2014 and provide projections of the inflation and unemployment rates at that time to give investors a sense of what economic conditions were likely to be associated with an initial move toward tighter policy. Finally, as in 4'', it could provide clearer guidance about the economic conditions that could lead the Committee to tighten policy by giving numerical threshold values for the unemployment rate and projected inflation.

On the other hand, participants may prefer to provide additional accommodation by further increasing the size of the Federal Reserve's securities holdings, as in alternative A2, on page 5. Paragraphs 1, 2, 4, and 5 under alternative A2 are quite similar to those for alternative A1. However, under A2, the second paragraph would indicate that the Committee expected only "relatively modest" growth rather than "a moderate pace of economic growth" over coming quarters as a way to justify taking an additional balance sheet action.

In paragraph 3, the Committee could choose to announce either the purchase of \$600 billion of longer-term Treasury securities by the end of next September or the purchase of \$300 billion of longer-term Treasury securities and \$300 billion of agency MBS by the end of next June. Participants may prefer to purchase only Treasury securities because they see MBS purchases as risking an undesirable distortion in the allocation of credit and as delaying the Committee's return to an all-Treasury portfolio. However, the mixed option might be seen as attractive if the Committee thought that the ongoing weakness in the housing sector was a critical contributor to the slow economic recovery and so wanted to purchase additional MBS as a way of providing support more directly to that sector. In addition, some participants may be concerned that purchasing another \$600 billion of Treasury securities would potentially have adverse effects on Treasury market functioning.

The staff also included in alternative A2 the possibility of a reduction in the interest rate paid on reserve balances. As was discussed at your last meeting, such a decision would need to balance the benefits of a modest reduction in money market rates against the risk that lower rates could lead to disruptions in short-term credit intermediation that could adversely affect the economy, for example, by accelerating the decline in the size of the money fund sector. If participants thought that this policy would be helpful, on balance, the Board could adopt such a reduction, and that step could be noted in the press release containing the FOMC statement.

Market participants would be surprised by the adoption of either alternative A1 or alternative A2. Longer-term yields would likely decline, equity prices would probably rise, and the foreign exchange value of the dollar fall.

Alternative C, on page 9, would be appropriate if participants believed that the monetary policy steps taken at the past two meetings risked boosting inflation to undesirable levels without providing a substantial reduction in unemployment. For example, some participants may think that the current level of potential output is significantly below the level in the staff's baseline scenario and may thus view the accommodation currently in place as more likely to result in inflationary pressures than in significant improvements in output and employment. Those members might note that measures of overall inflation have eased only somewhat since earlier in the year despite declines in the prices of energy and other commodities, and they may be concerned that inflation, over the medium term, could persist at levels above those consistent with the dual mandate unless action is taken fairly soon to reduce monetary accommodation. They may also conclude that the current stance of monetary policy,

including the MEP, poses an unacceptably large risk to the stability of inflation expectations.

Much of the statement under alternative C would be close to the draft for alternative B. However, the first paragraph of alternative C would suggest greater confidence about the recent improvement in economic growth and less confidence about the moderation in inflation. The outlook for unemployment in the second paragraph would be slightly more upbeat, and the reference to downside risks would be dropped.

In paragraph 3, the statement would note that “in light of the recent improvement in the economic outlook,” the Committee decided to reduce the size of the MEP to \$200 billion of purchases and sales, and that the MEP would be completed by the end of March 2012. In paragraph 4, the statement would shorten the period during which the Committee expected economic conditions to warrant an exceptionally low federal funds rate by about two quarters, by indicating that the period runs either “at least through 2012” or “at least for the next four quarters.”

The adoption of alternative C would greatly surprise investors and would likely have outsized effects in financial markets.

The draft directives for the four alternatives are presented on pages 12 through 16 of your handout. Thank you, Mr. Chairman. That completes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. Are there questions for Bill? President Fisher.

MR. FISHER. Mr. Chairman, can I ask Brian a question? Yesterday in his presentation, he said that it was our description of the economy that you felt was a little harsher than markets expected. I’m interpolating your words. The operative word here is “significant.” Is that what you were referring to in terms of statement B as it’s drafted?

MR. SACK. I think that’s what received a lot of attention in markets. Just to be clear, I had thought the first two paragraphs of that statement were essentially marking to market in a way that was pretty obvious. But market participants actually took a more negative signal from it than I had anticipated.

MR. FISHER. Well, have they digested that word “significant” by now in your opinion?

MR. SACK. Yes, I would imagine their expectation is that that clause would be repeated. We didn’t ask that explicitly, but certainly given the volatility in markets and the

uncertainties that they see, I think they wouldn't be surprised to have that sentence repeated with the word "significant."

MR. FISHER. Thank you. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Any other questions for Bill? [No response]

All right. Let's begin our go-round with President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. I support alternative B. I also favor maintaining the "at least through mid-2013" forward guidance and including the word "significant" in describing the downside risks. I think that's accurate. In my view, appropriate policy entails liftoff of the funds rate from its current level around mid-2014. This is similar to the median of market participants' expectations, so I don't see a compelling need at this time to try to move market expectations by changing our policy guidance.

In thinking about the appropriate stance of monetary policy, I find it useful to consider a variety of simple estimated and calibrated monetary policy rules. I'm less swayed by the optimal control simulations, which are highly sensitive to the model and underlying forecasts, and I don't think they're as reliable a guide for policy. But currently, with considerable slack, slow growth, and fairly low inflation, the central tendency of these policy rules is completely consistent with the current very accommodative stance of monetary policy. Furthermore, the central tendency of these policy rules doesn't predict lifting off from the zero lower bound until around mid-2014.

Of course, simple rules are only partial guides to our policy decisions, and there are three key reasons why we may want to adjust the prescriptions from these rules. First, because of the zero lower bound, we haven't been able to follow the prescriptions of the policy rules into negative territory. So there's no reason to think that we should follow them regarding the policy liftoff. Indeed, much research, including work I've done with Dave Reifschneider, suggests that

policy should stay at zero longer than standard policy rules would suggest following an episode at the zero bound. A policy rule based on our analysis suggests liftoff in early 2015.

Furthermore, the normal channels of monetary transmission remain unusually clogged. Many businesses and households are unable to take on new debt or want to shed existing debt, muting the effects of monetary policy stimulus. If this reduced effectiveness persists, additional policy accommodation is needed, and liftoff should be delayed relative to the simple rules' prescription. However, working in the opposite direction, the simple rules ignore the sizable additional accommodation from our unconventional monetary policies. The additional stimulus from lower term premiums and longer-term yields suggests that our short-term policy could lift off somewhat earlier than the simple rules suggest.

I view these and other arguments that deviate from the policy rules as roughly canceling out. So I remain fairly comfortable with the rules-based prescription of a mid-2014 liftoff as a modal forecast. Importantly, I foresee a relatively modest pace of increases after liftoff, with the funds rate ending 2014 at only 75 basis points.

Finally, there are significant downside risks to the outlook for the economy, as we discussed yesterday, and I therefore recognize that the date of liftoff could be significantly later than mid-2014. And obviously, depending on the actual evolution of the forecast for economic activity and inflation, we may need to change our policy guidance and use further large-scale asset purchases or lower the reserve rates as needed, but right now I see alternative B as appropriate.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I wasn't ready, but here we go. I am willing to support alternative B. I proposed the language of "for the next six to seven

quarters” in alternative B. So let me explain why I did that. In the frameworks go-round, I described a rule, which I could alternatively describe as a reaction function, as a mapping from changes in economic conditions to the changes in the level of accommodation. And when I did that, I didn’t mention calendar time. That’s because reaction functions really should be intrinsically dateless. They should work exactly the same in 2011 as in 2012. This formulation of a dateless rule-based approach to policy argues in favor of our communicating our level of accommodation in a way that is just as dateless. And I believe that we should make it easy for the public to understand how the level of accommodation is evolving over time, and that would mean we should describe our policy stance in a dateless fashion so that it is readily comparable from one meeting to the next or, indeed, from one year to the next.

Now, I’ll talk about the impact on the public, and then I’ll talk about the impact on our own thinking. This issue is not an academic one to the public. I read several news stories that predicted the Fed would leave its policy statement unchanged and concluded from that that the Fed is also leaving its policy stance unchanged. This inference is a logical one, but it is actually incorrect given the current form of the statement, which would involve actually, the Fed reducing the level of accommodation in place by leaving the date “mid-2013” in place with the passage of six to seven weeks.

I’ll come back to this point about using the duration as opposed to a date as our lever of changing accommodation now, because I want to talk about something I feel is very important. We talk a lot about policy uncertainty, and I believe that we are right now, unfortunately, a source of that policy uncertainty. What I mean by that is that I think that we really have to be more systematic in our thinking about how to build a reaction function. This is not just about what triggers to pick or anything like that, which is really more about what level of

accommodation we want in place today—an important question and one that we should be thinking about all the time—but we also want to be thinking about how that level of accommodation is going to be changing over time in response to changes in conditions. For example, suppose next year, a year from now, unemployment is at 9 percent and inflation is running around 1.6 percent. What are we going to do in those circumstances? I'm including only inflation and unemployment, but basically my idea is, the outlook is remaining the same as now. We're in a sort of stasis, which is not my modal forecast by any means, but it's certainly, I think, a relatively likely outcome. Taking a dateless reaction function approach to thinking about policy would argue for doing the same, having the same level of accommodation. It wouldn't mean having this year, "mid-2013," in there, of course, but it would mean arguing for the same level of accommodation in terms of how long we're going to be to liftoff.

Some of my concerns about Committee decisionmaking over the past two meetings have been that I don't think this discipline of dateless decisionmaking has carried through, and it's not a hawkish or a dovish comment. It's basically, if you want to add accommodation a year from now when the conditions are the same as today, you should be asking yourself, why didn't you put that accommodation in place now when actually there is a year that will go by in which you could be helping people with it? So it's really about consistency, and failure to be consistent over time adds to policy uncertainty in the current environment. It's very important for us to be more structured and more deliberate in our thinking about how we're going to react to changes in conditions. Now, I'm merely channeling the words that President Bullard has uttered on many occasions. So I'm probably scooping some of the things he's—yes. But even though that's true, that doesn't mean that what I'm saying isn't right. [Laughter]

Having said all of that, it's not going to be true at all times that you would never, ever deviate from your reaction function. It's not as though you want to commit to something and leave it there and go home for the rest of all time. Governor Raskin has offered some real reasons that right now we might be thinking that maybe we should change our reaction function. Why is that? Well, maybe monetary policy is not as effective as it once was. Maybe we're more worried about unemployment because we might be more on the verge of triggering more social unrest than we thought a year ago. So there might be reasons to change, but we should have in place the structure from which to change before we change. We should have in place a structured, disciplined approach to thinking about reacting to change in the economy. We might come to that point and say, "Look. The way we'd been thinking about monetary policy a year ago wasn't right. It's just not as effective as we thought it was." Or we might get to that point a year from now when unemployment is still at 9, and we could have much more Depression-like civil unrest. We might have a different way of weighting inflation and unemployment at that point. These will be good reasons to be revisiting the situation. But I think it's important for us to have something to deviate from and so to have a reaction function in place.

Those are words for the future. Right now, as I said, Mr. Chairman, I'm happy to support—willing to support, I should say—alternative B.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. Yesterday I discussed the Boston forecast and talked about inflation being at 1½ percent, roughly where the Tealbook was, by mid-2013. Both the Boston forecast and the Board forecast come from a particular econometric tradition, so I thought it was noteworthy to at least look at the memos on DSGE models. And interestingly, from all four of those banks, they came up with roughly the same estimate that both

the Tealbook and the Boston Fed forecast, which was roughly 1½ percent. In fact, I think 1½ is a high rather than a low for both those four banks and those coming from a different econometric tradition.

What that would seem to say is that there is some flexibility, if we are going to have an inflation rate below 2 percent two to three years out, to do more accommodation in order to get a better result on the unemployment rate. The reason you wouldn't do that is, one, you might think that we couldn't affect the interest rate, or, two, if we did affect interest rates, it would have no impact. Brian yesterday showed the percent of Treasuries that we're buying, and showed that in a number of issues, we're buying a very significant amount. I have no doubt that if we're willing to buy a very significant amount, we have the ability to move down both Treasury rates and mortgage-backed securities rates. It's a question of will, not whether we can do it or not. It isn't a question of whether we can move those interest rates.

So then the question is, if we can move those interest rates, what is the likelihood it would have any impact? Some analysts have argued that pushing long rates down through quantitative easing would have no effect. No effect is a very restrictive assumption, but it has been cited by a wide number of analysts. That assumption means that housing is unresponsive to lower rates; that consumption, including autos and durables, is unresponsive to interest rates; that exchange rates in the foreign sector are unresponsive despite the complaints by many of our foreign trading partners about the quantitative easing; and that investment is unresponsive to lower rates.

I asked the people who do our model to test the assumption of whether the interest responsiveness of each of these components is really zero. Not surprisingly, my prior was that they wouldn't find that zero was the right answer. And when they did that, they did find that in

housing, the coefficient was much lower, but they didn't find that the coefficient was 0—which is, housing is responsive; it's not as responsive as it would be without all of the various headwinds. But in those other sectors, they couldn't reject the assumption that in the past several years, interest rates have affected those sectors in the same way that they did prior to the past several years. So it is interesting that it does seem, from at least the econometric analysis done at the Boston Fed, that in using the model that we use for the forecast, we actually do find that if we chose to push interest rates lower, it would have an impact on the economy, contrary to what at least some analysts have argued.

When I look at alternative B, which maintains the exceptionally low rates “at least through mid-2013,” our forecast implies that the language in alternative A would actually be more appropriate. Should we leave policy unchanged when both elements of the mandate are missed in the medium term? We're not at full employment, and we're lower than 2 percent for the inflation rate. My preference would be to use this meeting to clearly communicate that rates will remain exceptionally low until unemployment is 7 percent or the inflation rate exceeds 2½ percent in the medium term. At our next meeting, if the outlook once again envisions unacceptable progress toward our primary goals, we need to consider taking more forceful action.

Were we to have a shock from a large bank failure here or abroad, a European crisis, or the inability to reach agreement on our debt problems, aggressive monetary actions, perhaps coupled with a move to nominal GDP targeting to signal a regime change, would clearly be appropriate. But even our baseline forecast implies a lost decade for many people in the workforce. We should consider soon whether more vigorous policies are necessary. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Today I support further actions by the Committee to provide additional significant monetary accommodation. I am not arguing that economic conditions have deteriorated further and thus require this additional action. I am arguing that the progression of adding stimulus needs to continue. In my assessment, there are significant benefits to credibly solidifying expectations that policy will continue to be extraordinarily accommodative as long as conditions warrant. I spoke about the risk-management benefits at length yesterday, and I hope that the record properly reflects those comments here as well in the interest of time.

As I've stated here and in public, I interpret our dual-mandate responsibilities to be closely associated with minimizing a quadratic policy loss function, which puts equal weights on price stability and maximum employment as captured by unemployment deviations from a pretty conservative and time-varying natural rate. Given such a loss function, the staff analysis shows clear value in strengthening our forward guidance. I agree with President Rosengren very much.

There are also considerations not captured by the staff analysis that I think add to the case for further accommodation. Some of this came up yesterday. The longer we go with very high unemployment and output far below its potential, the more we risk actually eroding that potential. President Williams mentioned the supply effects the Japanese perceive. Some of the reductions that we have already made to our estimates of potential are due to decreased capital deepening that is actually a fallout of weak demand suppressing capital investment.

Mr. Chairman, your speeches have highlighted the corrosive effects of long-term unemployment, and Governor Tarullo did a great job of explaining how we may be on the cusp

of finally significantly raising the natural rate of unemployment. I think those considerations add some urgency to this situation.

In favoring more policy accommodation in the form of certain variations of alternative A, I expect that I will be outside the consensus policy decision today. Since July 2010, I've advocated aggressive forms of additional policy accommodation. I argued for state-contingent price-level targeting in the fall of 2010. I was pleased to support QE2 as a further substantial step along the way, and I hoped that that would be enough. In August of this year, I argued for a version of the trigger threshold strategy similar to the language in alt A1, paragraph 4". Yesterday's discussion clearly indicates that, at least for now, I'm outside of the Committee's consensus regarding such policy clarifications of our "mid-2013" forward guidance—that is, in fact there is a consensus regarding interpreting and clarifying "mid-2013." We're going to have to deal with that soon. It's not really optional.

In any event, it's my judgment that we need another substantial step toward additional accommodation in order to solidify expectations. Accordingly, I favor alternative A1, with a variation of paragraph 4" included. I think that our exceptionally low range for the federal funds rate will be appropriate, at least as long as the unemployment rate exceeds 7 percent or unless medium-term PCE inflation exceeds 3 percent and longer-term inflation expectations become unanchored. Just to be clear, my preferred strategy for delivering additional accommodation in the most credible fashion would be to pursue additional asset purchases regularly at subsequent meetings until the outlook for hitting either of these thresholds increased commensurately with these additional actions.

As I said, Mr. Chairman, on the basis of yesterday's commentaries, I expect that my policy position is simply too far outside the consensus, and I cannot support alternative B today.

Thank you.

VICE CHAIRMAN DUDLEY. Can I ask a clarifying question?

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. President Evans, in buying more assets, do you have a preference in terms of what you would buy?

MR. EVANS. I would clearly support MBS. I think that that would be very helpful for the housing market. And I also would say that if a consensus was to emerge—which I am not anticipating—that some sort of asset purchasing today could be adopted, then I could be prepared to support that.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I'm going to support alternative B. I do not support alternative A2 because I don't favor additional asset purchases at this time. But I do have to express some sympathy for alternative A1, with its policy thrust of pushing the funds rate guidance further out to 2014.

My own forecast projects a funds rate near zero at least through mid-2014. Considering the language options for paragraph 4 of alternative A1, I am sympathetic to the first option because, as I said, it reflects my forecast. I'm also sympathetic to the second option for paragraph 4 because, in my view, it makes sense to move in the direction of policy conditionality in terms of projected economic outcomes, versus guidance based only on a calendar date. I am less sympathetic to the third option in paragraph 4 because I think its introduction of an explicit unemployment threshold could prove to be a step too far. For reasons that I expressed yesterday,

I am concerned that the unemployment problem is multifaceted, not well understood, and quite possibly not as responsive as we might hope to a sustained accommodative monetary policy stance. I am reluctant to connect the path of policy so concretely to what might show itself as time passes to be a problematic number that is taken as a trigger. Despite my sympathy for alternative A1, paragraphs 4 and 4', I lean to alternative B at this meeting. I would prefer a “stay the course” approach for the time being. The economy is improving, and I think we would be prudent to take a breather and see how the European and congressional fiscal stories play out and the economy evolves.

I think it would be best to avoid the impression of a policy change, and the easiest way to do that is to stick with our previous language. I say this because I do not really think the presumption of a very low funds rate through mid-2014 is a change from the consensus view that has prevailed since August. Because alternative A1, with the first paragraph 4 option, does reflect this reality, I do not strongly object to it in substance but advise against it at this meeting as a matter of tactics. If the Committee goes in that direction, I would hope we might convey that pushing the horizon of the current funds rate policy to mid-2014 is more an extension and continuation of the August policy decision than a change in the implied degree of stimulus relative to September. This could perhaps be done through the Chairman's comments on the SEP.

As regards the language of alternative B, I prefer no change at this meeting. As I already implied, I do not object strenuously to the change that comes off a date and allows a rolling approach. It does suggest an extension, as I said, which is consistent with my forecast, but that may be too narrow a point. It's early enough, it seems to me, to treat this tactically at this

meeting. So all things considered, I prefer the existing “mid-2013” language. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Did you want to say anything about “significant”? Were your comments meant to encompass that or not?

MR. LOCKHART. The dropping of “significant” is okay with me, I think, at this time because of the slight improvement in the economy.

CHAIRMAN BERNANKE. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I support alternative B today. Since our last meeting, we received some good news on the economy that signals a reduced chance of recession. But as I said yesterday, the news hasn’t been sufficient to change my view of the most likely path of the economy, which is for slow growth in the 2½ to 2¾ percent range through 2014. We also had a bit of good news on inflation, although not enough to be certain that we are seeing a reduction in the underlying trend of prices. Nonetheless, I continue, as I said yesterday, to expect inflation of about 2 percent for the next few years. With my outlook little changed since we eased policy at our last meeting, it makes sense to me to keep policy unchanged at this meeting.

As we move forward, I think the course of policy is going to be highly dependent on how the considerable risks to the outlook play out. While the risks don’t look as dire today as they did at our last meeting, they may yet pose some challenges for policy. For example, we could easily face circumstances in which risks to price stability prevent us from easing in response to a faltering recovery or circumstances in which rising inflation prevents us from maintaining the current degree of policy accommodation in response to a still-weak recovery.

In terms of the language, I wouldn't change the "mid-2013" date at this meeting. In paragraphs 1 and 2 of alternative B, we are making comments that show somewhat improved economic conditions, and we didn't really change our economic outlook very much since our last meeting. Drawing on yesterday's discussion of policy frameworks, though, I would prefer to use the SEP to clarify the forward guidance in alternative B by referring to our forecast for unemployment and inflation in mid-2013. Adding some form of the language in the last sentence in paragraph 4' in alternative A1, I think, could help the public better understand our reaction function.

Mr. Chairman, because you're going to have a press conference after this meeting, I would encourage you to use that opportunity to draw the public's attention to what we expect economic conditions are going to be in 2013, if we don't use that language in our statement today. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, I support alternative B, with maintaining the language "through mid-2013." Mr. Evans may be surprised that I agree with him completely—that the longer we go with high unemployment, the more we undermine potential. I just don't believe that our monetary accommodation has been all that useful in assisting the reduction of joblessness, given the uncertainty that is posed by the fiscal and regulatory morass that we see on Capitol Hill. And I believe we're pushing on a string on that front.

I have been outspoken on this publicly and within this room. I did not support the extension to mid-2013. I voted against it. I still—despite, I think, Brian's very good briefings—view Operation Twist as incomplete. I suspect it was good for the rich. As a former trader, having learned very well to operate on "buying on the rumor and selling on the news," I think we

did end up enriching certain swift and capable money operators. It's not clear to me that in the end it will benefit the cost of business borrowing. I do believe very firmly that we have significant liquidity in the economy.

I found all the interventions yesterday to be quite brilliant, but I was particularly struck by Governor Duke's, in terms of some of the improvements that have been made regarding balance sheets and the potential that exists out there. I wouldn't say that I want to completely embrace the "Tigger" scenario, nor am I willing to embrace the "Eeyore" scenario, but I found that to be a sobering assessment in contrast to what everybody else was talking about at the table, and it's something we should bear in mind.

I continue to believe that we should harbor our ammunition. We have few bullets left. I referred to them in the last meeting—in reference to your initials, Mr. Chairman—as BBs. But whatever we have left we need to use under dire circumstances. I am still of the belief that we could see an S&P 500 trading at 600 under very easy circumstances if we have the horrific scenario that some fear obtained in Europe and just because of the nature of the skittishness of markets.

I continue to worry about the impact of what we have wrought on those who played by the rules, saved their money, and are being hurt by low interest rates. I do believe this is not constructive from the standpoint of the 6,000-plus community banks we have in this country in terms of squeezing their profitability.

I do believe that this has a negative impact related to the resetting of pension fund liabilities, which takes away from investment that might otherwise go into job-creating capital, and I worry about the consequence of our low-interest-rate policy.

These are costs that are involved. There are certainly benefits that accrue. But I don't think one of the benefits is that we impact the too-high unemployment levels in this country if we just act as a substitute for fiscal policy.

We'll have more information by December in terms of knowing what the supercommittee is likely to do, and in my book, as long as we provide accommodative monetary policy, we give them an excuse not to act. It is time for them to act, and I would urge you, in your press briefing, to underscore what you have said publicly—and Mr. Dudley, the Vice Chairman of this Committee, mentioned yesterday—that we should stress regarding the need for fiscal policy to get its act together.

Mr. Chairman, I would support statement B. With regard to the word “significant,” I am somewhat indifferent. I would prefer not to use it, but if the Desk tells us that it's been digested by the market, then I could swallow it. I didn't think it was in blue, by the way—I thought it was in purple, Mr. Lockhart, just to satisfy you. And I would suggest that those who are seeing purple squirrels may be taking the drugs that Mr. Lockhart and Mr. Lacker have been talking about. [Laughter] So that's it, Mr. Chairman. I support statement B as drafted, with “through mid-2013.” Thank you.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. My preference is to take no further action at this meeting. Since September, the moderate recovery has continued, and although far from robust, GDP growth has been resilient, and the third-quarter reading came in slightly better than I had previously expected, thanks to strong business investment.

While I understand the desire to do something to address high unemployment, I don't think our current problems can fundamentally be solved with monetary policy alone.

Deleveraging and rebalancing take time to achieve, and monetary policy has only a limited ability to speed these processes without risking low and stable inflation, which we have worked hard to achieve. Moreover, we normally believe it takes some time for monetary policy decisions to affect economic activity. The Committee has taken action at each of the past two meetings, partly in response to a deteriorating outlook and downside risk, but conditions have not worsened, and in fact have improved a bit, since then.

So I favor no further action. I would like to leave the language unchanged and to eliminate the word “significant” from “downside.”

CHAIRMAN BERNANKE. Okay. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I’ll be brief. I support alternative B. The data have been somewhat stronger than expected. The recession scare that was around during the August time frame has been mitigated, at least for now.

It’s true that sentiment is down at both the household level and the firm level. I consider this a headline phenomenon for right now. There is very real risk to the U.S. from Europe, but it’s only a risk at this point, and it’s not enough to change household behavior or business behavior for a couple of reasons. The households, I think, see themselves as too far removed from Europe to actually change behavior, despite the fact that they’re reporting bad feelings. For the large businesses, they’re also worried about developments in Europe, but they are also profitable and cash rich. Their business growth strategies are not centered in Europe but in Asia, and Asian growth is projected to continue unabated. These are two good reasons to think that the sentiment numbers are not affecting actual household and business behavior in the U.S. at this point, and so I think that that helps explain why we’re not getting significant downturn based on sentiment alone.

The Committee has taken easing actions at the August and September meetings, strengthening the commitment to maintain the policy rate near zero and undertaking Operation Twist. Both of these are operating today. Given the improved hard data on the economy, I counsel patience at this point.

I also counsel against the use of the word “significant” in paragraph 2 of alternative B. The tradition of central bankers is to be appropriately fair but understated to avoid frightening the financial markets. It’s a serious problem. They think that we know something that they don’t know, and we have to be very careful about sending any signals of that nature. I think it’s fine as originally written: “Moreover, there are downside risks to the economic outlook, including strains in global financial markets.” Certainly there are. Everyone knows what we’re talking about. Putting “significant” in there may otherwise create more problems than it solves. So I would use the original wording in paragraph 2.

If the Committee wishes to ease aggressively at future meetings, I suggest that asset purchases are the most potent tool available to the Committee. Partly based on the discussion yesterday, I would recommend the incremental balance sheet policies, such as those described in the excellent memo of October 24 by Dave Reifschneider, John Roberts, and Jae Sim. We haven’t discussed that memo very much at this meeting, but I thought it was very good, and I recommend that we take a look at it. I’ve also described my own views on this issue in previous discussions with the Committee. An incremental approach would have a great advantage of allowing the Committee to make decisions in a manner analogous to interest rate decisions in ordinary times. Also, the open-ended nature of this approach potentially promises substantial additional easing while still giving the Committee the ability to pause or reverse the policy as the macroeconomic situation changes. I counsel purchasing Treasuries versus MBS.

Other methods of easing did not strike me as being nearly as effective as they are sometimes portrayed, partly for the reasons I outlined yesterday. The trigger strategy approach seems questionable to me. I do not see why this is a good way to commit to longer periods of zero rates relative to other methods of committing to longer periods of zero rates. I do not think much would happen initially if we took this approach, and it might complicate our strategies down the line if either or both of the thresholds were violated. Furthermore, trying to tie monetary policy directly to unemployment strikes me as very questionable given the state of knowledge of hysteresis in unemployment as experienced in Europe in recent decades. It's not that we shouldn't think about unemployment—we should think about unemployment. The question is, should you tie the policy lever directly to a number that we probably don't understand as well as we would like to understand? Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. KOCHERLAKOTA. Mr. Chairman? Sorry.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. I want to clarify something in my own mind. The word “significant” was in the September FOMC statement, right?

CHAIRMAN BERNANKE. Right.

MR. KOCHERLAKOTA. So taking it out is a change from the September FOMC statement.

CHAIRMAN BERNANKE. That's correct.

MR. KOCHERLAKOTA. Okay. Just to be clear.

CHAIRMAN BERNANKE. The sentence is reoriented a little bit so that it's not quite so obvious, but yes, it is in fact the case, and the September statement is, of course, at the beginning of your handout.

MR. KOCHERLAKOTA. Thanks.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. This Committee has been aggressive and creative at fulfilling its dual mandate. Over the past three and a half years, we have reduced the policy rate from 5¼ percent to 0, where it's been now for three years. We have purchased nearly \$2 trillion worth of assets on our balance sheet, including MBS. We have targeted spreads. We have targeted risk premiums. We have targeted assets for moving their prices around. It is hard for me to imagine that this Committee could be accused of not making every effort in its power to fulfill our dual mandate.

The fact of the matter is that we are all frustrated and disappointed that unemployment rates remain stubbornly high, and we're all deeply concerned about that. I think we have to keep in mind, though, that policy actions by this Committee are not free. They carry costs as well as benefits, and it is our duty to keep evaluating those costs and benefits of our actions. And I think, as President Lockhart said yesterday and repeated today, it is troubling that despite our best efforts and very aggressive efforts, the labor market hasn't responded in ways that we normally think it might. That should give us some pause regarding how we think about proceeding going forward.

In thinking about the costs of aggressive action, we need to be concerned that it's about the future—it's not about today. Low interest rates for three years and longer—President Bullard has expressed concerns about that. But distorting interest rates, twisting curves, and

targeting asset prices of different classes of assets risk creating distortions, inefficiencies, and potentially, bubbles down the road that we have no control over or no ability to foresee with great foresight. That is a risk that we must take as real. President Hoenig for all of last year cautioned us about those risks—the unknowns that they may carry with them and therefore the risks for the future. As President Fisher just said, low interest rates punish savers as another form of distortion.

Our policy actions also have risks for the future as well in undermining our own credibility. I've raised this point before. We continue to take actions in an environment where our actions will not help the unemployment rate or will have very de minimis effects on the unemployment rate. We undermine our credibility as an institution, and when we need that credibility, perhaps in the exit, we may suffer from it.

And finally, of course, there is the potential risk of inflation down the road. Inflation may not be in our future in the near term or even maybe in the medium term, but we put ourselves in a position where managing that future inflation could be extremely difficult. And undermining our credibility by taking actions that don't work makes managing that inflation exit that much more difficult. So these are real costs to our actions today, and we have to place judgments on how to balance those future costs that are not knowable completely. But we have to make judgments about those.

I am worried that we continue to take actions in ways that have no real coherence to them. I fully support our conversations yesterday about inflation targeting. I put myself in the camp of President Kocherlakota—his discussions about systematic policy—and even President Williams with respect to thinking about more systematic ways of guiding our policy decisions. I made a suggestion yesterday that this Committee work over time in developing what the

arguments of that systematic policy ought to be and using those arguments to explain to the public what our actions are in terms of how those arguments evolve. So I'm very much in favor of that approach, and I'm very much in favor of not only inflation targeting in articulating our framework, but also using that framework and potentially the SEPs as a way to provide more information, more transparency about forward guidance, as opposed to using the calendar. Those would all be steps forward. I was encouraged by our conversation yesterday about that, and I think those steps will help us mitigate some of the risks that I pointed to—the risks of our policies down the road.

To me, the economy looks, if anything, slightly better, as many people have said, than it did in August and September when we undertook those actions. The dire prognoses of a lot of people that we were about to fall off a cliff have not come to pass. That's not to say they might not at some future date, but clearly, there's a little more confidence, I think, that that will not happen at least in the near term.

From my perspective, given our actions in the past two meetings, I am hard pressed to figure out a justification for further accommodation at this point. I do not believe the maturity extension program is very effective. I didn't think it was going to be effective. I was opposed to it, and I was opposed to the dates. However, the progress we made yesterday and the prospects that we can strengthen our framework, improve the way we do forward guidance, and push toward a more systematic approach to policy give me hope that we can manage our way through this.

At this meeting, Mr. Chairman, I'm willing to go along with alternative B. I would prefer that the word "significant" be dropped. I don't feel terribly strongly about that. Obviously, there's a part of me that very much would like to see alternative C, but I am hopeful that some of

the conversations and progress we made yesterday can translate into a way that will make our policymaking better and more transparent and help us avoid the kinds of risks that I see of our policies undertaken in the future. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I'm willing to support following through on our maturity extension program, which I opposed at the last meeting, but I'm willing to support that.

As I said in the economic go-round, I think the forecast for inflation—people's around this table and my own—is good, one that I'm very pleased with. The risks around inflation are heightened. If you look at a picture of inflation over the past several years, you'll notice the significant increase in volatility this past decade over the decade before, and I think that volatility is likely to be with us for some time. It is possible that the broader inflation trend could moderate a bit, as in the Tealbook and many of your forecasts, but I worry that a forecast of moderating inflation relies overly much on the effect of slack, whose downward effect on inflation has disappointed us several times in the recent past. I think inflation could accelerate, and it could do so rapidly. I don't see that on the horizon right away, but it's well within the realm of possibility. I'd note the continuing buildup of bank balances and the huge amount of reserves, and I'd question whether two-year Treasuries are any less effective as inflationary tinder than bank balances. So it's conceivable that with the spark of a commodity price increase or an oil price increase of a substantial magnitude, we could get a broader acceleration of inflation.

Growth is certainly extremely disappointing, but as I've said and many others have said around here, it's a fairly nonmonetary phenomenon. I think the natural rate, thinking in those

terms, is fairly high and fairly close to the unemployment rate we have. Further stimulus on our part could well affect growth, but I can't see it affecting growth without also pushing inflation up. It's one thing, when inflation is running below where we'd like it to average, to be willing to run that risk for the sake of stimulating employment, but it's entirely different when inflation is where we want it. And it's one thing to tolerate shocks that temporarily push headline inflation well above where we'd like it, in a situation where we have good reason to believe that that effect will reverse shortly and we'll get back down to where we want it; it's quite another thing to attempt to deliberately engineer an increase in inflation trends. I just don't think that our ability to manage the movement upward in inflation and a controlled movement downward warrants as much confidence as I'd require to get over the hump to support that. It would be a terribly risky maneuver to attempt.

Looking forward, I think the more stimulus we provide, the quicker we're going to have to be ready to take it out. The deeper we get into this, the quicker we're going to have to move to take it out. So I worry that we'll face a situation with rising inflation and terribly disappointing growth still, or growth picking up but still disappointing on the labor market side—a dilemma that will be tough for this Committee to grapple with, that will really expose a lot of differences of opinion in this Committee.

On the statements, I think “significant downside risks” was a mistake, in hindsight. I believe that markets already thought there were significant downside risks, they read our statement as gloomier than they already were, and they read it as gloomier than we really were. So I'd favor dropping the word “significant.” I realize that the past few days' events in Europe may make that a discordant, dissonant move; therefore, I could support leaving it in as well.

Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you, President Lacker. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. We've taken a number of important steps to ease monetary policy in recent meetings. Even so, absent further accommodation, the outlook is unacceptably weak. Under current policy settings, the Tealbook forecast and the Committee's central tendency projections show unemployment remaining exceptionally high for years to come and inflation running below the 2 percent level that most Committee members consider consistent with our dual mandate. A central bank that practices flexible inflation targeting would be looking for ways to provide further accommodation.

In my view, it would be feasible to foster a more satisfactory recovery, without pushing inflation above 2½ percent, by using communication strategies like those illustrated in alternative A1—namely, strategies that would convey the Committee's intention to exit from the zero lower bound at a somewhat later date, and to firm policy at a somewhat more gradual pace, than financial markets currently anticipate. Such a strategy is embedded in the projection that I submitted for this meeting, and hence my forecasts for both of the dual objectives are more appealing than in the extended Tealbook baseline. In particular, my preferred policy path is associated with a faster pace of economic growth over the next few years, a significantly lower rate of unemployment by late 2014, and a trajectory for inflation that stays very close to its mandate-consistent rate. Among the specific variants of paragraph 4 in alternative A1, the thresholds in version 4" are very appealing to me as a way of conveying quantitative information about the conditionality of forward guidance, and I agree with the comments and discussion that President Evans has given of why this is a good approach. The formulation in version 4' based on projections, however, could also be workable.

Nonetheless, as we have discussed, it makes eminent sense to make adjustments to our forward guidance in the context of a clear expression of our overarching goals and strategy. I'm hopeful that we can reach a broad consensus on a statement of principles over the next couple of months. I look forward to working with the subcommittee on communications to find a formulation that fully respects our dual mandate. I also hope we'll be able to move forward with incorporating policy projections into the SEP. As a matter of fact, I became even more persuaded of the merits of publishing our funds rate projections as I filled out my survey for this round and discovered that my rosy economic forecasts could easily be misinterpreted in the absence of information on my judgment about appropriate policy.

Regarding alternative A2, I'm also open to additional LSAPs, especially as a complement to providing additional accommodation through our forward guidance. I would be particularly supportive of MBS purchases to help foster recovery in the housing sector, especially since dysfunction in mortgage markets is attenuating the effectiveness of monetary policy accommodation. A pickup in the housing sector could make a substantial contribution to the recovery if starts were to rebound toward more normal levels. Moreover, house prices have significant effects on spending via wealth, cash flow, and collateral effects, and a stronger housing market would also improve the health of the banking system. So initiatives along these lines certainly deserve further consideration.

In summary, rather than changing our forward guidance or engaging in further LSAPs at the current meeting, I'm supportive of adopting alternative B today. With respect to the specific language, I strongly prefer to stick with the current wording of "at least through mid-2013" rather than substituting the phrase "for the next six to seven quarters." The phrase "at least" conveys that policy firming might not commence until significantly later than mid-2013, and this

phrasing has already been helpful in guiding financial markets, as Brian noted in his briefing yesterday. The Desk survey suggests that investors now see liftoff as most likely in early 2014. Moreover, from the standpoint of effective communications, I consider it preferable to formulate our forward guidance in terms that can be reiterated at each meeting as long as there isn't any substantial change in the economic outlook. In effect, we should lay out the anticipated path of policy as clearly as possible based on our economic forecast, and we should follow that path unless there's a good reason to change it. Finally, on the language concerning "significant," I could, frankly, go either way on this. The current language, the language that was incorporated initially in B, seemed acceptable to me based on the data suggesting less risk of inflation and the fact that there has been some progress on Europe, but I could certainly live also with including "significant," especially if, as Brian says, it's been digested by markets at this point.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I support alternative B with the language "at least through mid-2013," not because I think that's optimal, but because, as I said yesterday, if we made a change to it this time, it might be considered, given all the discussion about communication in the intermeeting period, our final choice, and I don't think we've made a final choice. In making a final choice, I could support one that referenced time, such as the six to seven quarters. I could support one that was formulated as a prime or a double prime as long as we all agreed that that's how we were going to do it going forward. I do have some preference for referring it to the projections, the SEP, in some way and tying it to those.

With regard to the word "significant," I think the risks are significant, and taking that word out, it seems to me, would be a standing down from that position. So I would prefer to leave it in.

As to additional asset purchases, and specifically MBS, I would very much be in favor of weighting any purchases we were going to do toward MBS, but that goes only part of the way. That affects the spread between Treasuries and the MBS securities. It's not as effective at this point in affecting the spread between Treasuries and the rates that are actually offered to homeowners, and paying more attention to that piece also makes sense. We have within this System probably the largest collection—certainly of economic research resources that are available to the government, and I think making our assets available as technical assistance to parts of the government that can actually make changes that will improve the housing market and the ability of borrowers to access the low rates that we're working on is something that we can do. And certainly, anywhere that our regulatory supervisory policies can be supportive, that's an important thing to do as well. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. A week and a half ago, I gave a speech in which I suggested that additional purchases of mortgage-backed securities should be put back on the top of our agenda. I carefully phrased that speech and that particular suggestion so as to say that if things did not improve over the next couple of months, I thought we should consider it. I qualified the formulation, really out of respect for the decisionmaking process of the Committee. In fact, I think that there is a good case to be made right now for additional MBS purchases.

Before I get to that reasoning, though, I wanted to say a couple of things about the general environment in which we're making this decision today. First, we're not just talking about unemployment here. Had it been a circumstance in which the economy was growing 3½ percent a year but unemployment was remaining stubbornly high, it would have been one thing. But that is not the circumstance that we confront. We have now had a several-year

pattern of growth that has little spurts and then reverts back to a very tepid pace. So the failure to create more jobs seems quite logically tied to the performance of the economy as a whole. Of course, there are some uncertainties about exactly how some sectors of the labor market would or would not react to improved growth. But if one looks at the data, the importance of aggregate demand and of cyclical unemployment as explanatory variables is as strong as virtually anything that we look at in this Committee. So I do think it's a red herring to talk about structural unemployment or drug problems or something of the sort when we're talking about what impact may be had by further monetary stimulus. I appreciate Jeff's formulation, which was basically saying, "Yes, of course there's room for more stimulus." But Jeff assesses the risks of inflation versus the stimulus, and I think that's a legitimate conversation. I would come out on the other side, but it does seem to me that's the conversation we should be having.

I think the case is actually quite strong, and it's quite strong right now. Why MBS? Well, people have already mentioned several of the reasons. The spreads are obviously one of those reasons and the fact that we're getting to the point where there may be some impact on market functioning of further Treasury purchases. But I would also point to something that has been reflected in a number of your comments over the past couple of days—that the suboptimal, subexpected performance of the economy over the past few years, with the very disappointing trajectory of the recovery, seems in retrospect pretty obviously tied to debt overhang, the Reinhart–Rogoff kinds of factors that people have been citing for a while now. And the housing sector is clearly at the center of all of that. As Betsy was indicating, in other areas there's been a good bit of working down of debt. Housing is what has continued to be dysfunctional. That's where the debt is; that's where the failure of markets to clear is. Again, as Betsy was just mentioning, that's where prices and quantities don't quite seem to be in the kind of equilibrium

that we would expect. So I think action we would take in the housing area with MBS purchases would not only be efficacious in the way that all large-scale, long-term asset purchases would be, but could also have a particular impact on the major impediment to the kind of recovery that would more resemble past recoveries out of recessions.

I know that a lot of people, myself included, are frustrated with the failure of the political branches of government to take appropriate action to provide more clarity and stimulus for the economy. But this is an instance in which there could be some synergy. Some modest steps have already been taken to make refinancing more readily available. If we were to act by announcing a large-scale asset purchase, I think both the public sector and the banks themselves would see more opportunities again to leverage what we were doing to have a greater economic impact.

So the case is actually quite strong, and thus I'm very much tempted to join President Evans in dissenting from alternative B, because I think alternative B does not accurately reflect the state of the economy. Having said that, I believe there are a couple of reasons not to move right now. One is the point that Narayana and John made earlier, and which Bill Dudley has made, I think, on a number of occasions in the past several meetings—that we do need to get the communications and the framework and the sense that we think in terms of multiple meetings (and not just one meeting) more clear than we have. And there are some reasonable grounds for arguing that an action by us today, whether it was A1 or A2, would once again be difficult for markets and other observers fully to comprehend. They wouldn't quite know how it was that we were making decisions and why.

Second, and someone alluded to this earlier also, I do think that the risks of a significant adverse event in Europe are as high as they have been since May 2010. The risks are not just significant—whatever the adjective above “significant” is, that’s the one we should have.

MR. KOCHERLAKOTA. “Very significant.”

PARTICIPANT. “Humongous.” [Laughter]

MR. TARULLO. “Humongous”—that’s the one that belongs in the statement as an actual reflection of reality. Because of the increased possibility of something seriously adverse happening, it might be prudent to withhold for now a significant additional policy initiative, which is what I might otherwise favor, and then to assess the state of our communications, the state of the economy, and the state of Europe over the next couple of meetings.

So with considerable reluctance, I can support alternative B today. Mr. Chairman, one probably shouldn’t make one’s support or nonsupport based on any single word, except maybe the insertion or omission of “not” in certain places. [Laughter] But I do think that omitting “significant,” given that it’s in the statement now and given what I regard as the increase in financial risk since the last meeting, would be a mistake. Thanks.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. Some of the incoming data indicate that the downside risks have receded somewhat. But unemployment is still projected to decline only gradually, and inflation is still projected to settle at or below mandate-consistent levels. The economy is still in dire straits, with sentiment highly pessimistic. Again, I am not optimistic that households, many of which have lower levels of disposable income, are yet ready to be an engine of growth for this economy. We have not fallen off the cliff, but the margin of safety is not wide. Downside risk is significant.

First, I think that early cessation of the maturity extension program, as suggested in alternative C, would be premature. It also would challenge the credibility of the Committee to reverse a decision so quickly when economic indicators have not materially changed. In my view, early cessation of the maturity extension program requires more-definitive data confirming that the recovery has strengthened and that unemployment has begun to decline.

I'm instinctively drawn to alternative A1 because, with the federal funds rate constrained by the zero lower bound and with elevated downside risks to output, stronger forward guidance seems prudent. But stronger forward guidance of any type requires a communication strategy in order to be effective. In order to maximize the benefits of accommodation promised by such stronger forward guidance, I'd like to understand what communication efforts would accompany such an action. Once these communication plans are developed and considered, the option in alternative A1 will be more credible to the public. Until then, staying the course, as in alternative B, seems appropriate. But I am drawn to the need to update our reaction function in paragraph 4 by reflecting the "six to seven quarters" language, which I think is more commensurate with at least my economic outlook. I'm sensitive to President Kocherlakota's argument that keeping the "through mid-2013" language reduces the level of accommodation. So I look forward to the work of the subcommittee on communications to create for the full Committee's consideration a framework for enhanced forward guidance. Thank you.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you. First, I want to talk a little bit about the "significant" point. I feel really strongly that it has to stay in, because if you take it out, you're basically saying that you now think the downside risks are insignificant. Does anyone around the room think that the downside risks are now insignificant? I agree that we were surprised by

the reaction of the markets last time to putting “significant” in. But it’s very different keeping it in as opposed to taking it out. If you’re taking it out, you’re trying to make a statement that you think the risks have really declined significantly.

I just don’t see any evidence that the downside risks have declined significantly—in fact, at all. The European situation is probably at the worst place that it’s been. It’s also completely inconsistent with what we’re saying in the SEPs. If you look at the SEP results, uncertainty about GDP growth went up compared with June; downside risks to GDP growth are the same as June—11 versus 6. If you look at the risks to unemployment, they have gone up since June. So how do you reconcile taking “significant” out here, and then you have all of this uncertainty that you’re going to discuss in the SEP results? I just don’t see the benefit. I think it could be really embarrassing for the Committee if you take it out, Europe falls apart, and people go back and say, “Well, what were you thinking? Didn’t you see what was going on in Europe as you were going into the meeting?”

Now, in terms of other things, obviously I’m going to support alternative B. I prefer to stick with the date rather than move to the quarters. I understand the argument for the quarters, but we’re on a trajectory here where we’re hoping—at least some of us around the table are hoping—that by January we can arrive at a framework where we actually specify triggers or thresholds. And in that case, the thresholds will be the key thing, and then the date will follow from that. I don’t think it really makes sense to go to quarters and then go to this new thing—you’re going in a zigzag pattern. So I don’t really oppose the idea of the quarters conceptually, but I don’t think it really fits in, in terms of the trajectory of how we might like to move through the meetings.

MR. KOCHERLAKOTA. Could I just say one thing to that, Bill? For this meeting, I understand the arguments for staying the same as we were, and I appreciate that. But even if you're thinking about alternative A1 down the road, in December or January, we will have to communicate information about timing in some way. And I think saying something about the duration, as opposed to a date, would be a better way, even in that context. So I don't think of them as being inconsistent. That's all I would say.

VICE CHAIRMAN DUDLEY. Okay. Well, let me continue. The other thing I want to talk about is, we need to really think clearly through what our escalation options are in the near term, because there are significant downside risks. So I think we could actually not have the luxury of getting all the way to January to pursue the thresholds approach. Regarding the near-term escalation option, there are really two things that I would favor if we had to go down this path. One is that I much prefer MBS over Treasuries at this point, subject to the capacity constraints in terms of how much we can do without disrupting market function. And the reason why I favor MBS over Treasuries is, it's easier to make the case that this is more directly tied to one of the key issues that we're facing, which is housing. It's easier to tie it more directly to private-sector financial market conditions, and it also would have less political noise associated with it. I don't think that we should pay that much attention to the political noise per se, but the political noise can make policies less effective. So to the extent that there's less political noise of doing MBS versus Treasuries, I think it is significant in terms of the efficacy of the policy choice.

Regarding where we're heading over the next couple of meetings, I very much hope that we can get to the point where we can actually turn the date into thresholds, with the date actually following from the thresholds rather than just standing out there in space. As I said yesterday,

I'm very uncertain about what the date is. I'm considerably less uncertain about the thresholds, so I think the thresholds are, in some way, a better metric to give the markets. The second thing with thresholds is that they give the market the ability to update its view of how long policy is going to stay accommodative dynamically as it gets new information and the outlook changes. So that's something that I'm hoping we can work toward. Obviously, I think it's going to be difficult.

The second thing I think we need to think about—and this is something that we talked about; we got a briefing from the staff at the videoconference—was that we may need to think about bringing back a better liquidity backstop for our financial system if Europe really gets into great difficulty. The very rapid failure of MF Global underscores the fact that the broker-dealers in the United States do not have a credible lender-of-last-resort backstop. And so it's very possible that we may have to do something very quickly on the liquidity front to backstop the financial system. One thing I think that it's very important for us to stress in our public remarks is that despite the Dodd–Frank Act, we still have both the ability and the will to perform our lender-of-last-resort function, because I think there's a little bit of confusion in the market about whether we would actually be willing to act. Obviously, we didn't have a discussion at that videoconference, but my reading of the body language is that there's quite a bit of support on the Committee that lender of last resort is a legitimate central banking function. I think we should make it clear to people where the Committee stands on that in our public commentary. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. Thank you, all, for your comments. We are still at a difficult juncture. There is certainly a case, I think, for further action. The best way to say it is that our medium-term forecasts have inflation below target or at target and

unemployment well above what most people consider to be the long-run equilibrium level. And I think it's pretty straightforward to show that that can't be a feature of optimal policy. That said—well, there are responses to that, of course. One can argue that the actions that we could take at this stage are ineffective or have unintended side effects. So it's a complex debate and one that's been going on in this room for some time.

For this meeting, I would propose that we not take new action, and that's based more on trying to get our framework clarified than on a clear decision on the need for or efficacy of further action. We took important actions at each of the past two meetings. Both of these, I think, were well grounded in theory. But President Kocherlakota and others have a point that there was some ad hoc feel to those actions, and probably their impact is somewhat less than it could have been if they had been better cast in the context of a framework and better prepared for the markets.

For those who are advocating more expansionary policy, I would just point out that our toolkit is not infinite, that our capacity is not infinite, and that we'll be more effective if we can use the ammunition we have left in the most focused way. And the best way to do that is to have a strong communication program that will help people understand what we're doing, why we're doing it, and help guide expectations in both the markets and the public.

So I would propose not to take new action today. I leave aside the question of whether new action is justified. I see a case for new action. But whatever we choose to do, it'll be more effective if we are able to provide a more coherent framework for communication. Again, I think that we should not introduce yet additional policy actions today. We have several things already in play. Therefore, I do support alternative B, which most people around the table were comfortable with. I think the majority of people in that statement were in favor of retaining the

“through mid-2013” language. Whatever the merits may be of the alternative, there’s a case for waiting until we get to a new communication strategy before making changes, and then we can consider how to incorporate different considerations into that. So I propose that. “Significant” is—I got a very divided response on that. Bill.

MR. ENGLISH. I’m sorry, but I wanted to suggest one possibility because the response was so divided, which was to use exactly the words from last time rather than changing the structure of the sentence. It might be that the market would be less likely to notice and think about the word “significant” if it’s in the context of exactly the same words as used before.

CHAIRMAN BERNANKE. I think that’s right. I would say the two options are, in alternative B, either striking the bracketed word “significant” and leaving the sentence as it is: “Moreover, downside risks to the economic outlook remain, including strains in global financial markets”—I think the case for doing that is, first, there’s this mysterious overinterpretation of the word in the markets, and we’re not quite sure what all that means. But more substantively, even though Europe remains very troubled, there has been at least a little reduction in downside risk in the near-term U.S. economic data. The case on the other side is that we have already used this language. And as the Vice Chairman and Governor Tarullo and others point out, we are facing downside risks that could be significant or worse from European developments. Frankly, I’m willing to go either way. I think if we do retain “significant,” we ought to go back just to the language of September, so there’s no need to change.

PARTICIPANT. I agree with that.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. I found Vice Chairman Dudley compelling, so I agree we should leave it in. Going back to the old language makes sense.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Yes, I agree—we could just keep it the way it was. Let me just say, though, that as a matter of style, you always want to be understated as a central bank. People are imputing that we have some really detailed knowledge about what’s going to happen or that we have a special crystal ball, and they’re imputing the probability of disaster to be higher than it otherwise is.

MR. LACKER. You could say “somewhat significant.” [Laughter]

MR. BULLARD. I’m happy to leave the sentence the way it is, but let me just say, the *Wall Street Journal* is a master of understatement. They have the small headlines. It says, “Nixon Resigns; Ford Takes the Oath of Office.” They don’t blare it at you the way the other newspapers do. I think that’s the style that we should have in describing the situation.

MR. FISHER. So you would caution against “humongous”?

MR. BULLARD. I would caution against “humongous.”

CHAIRMAN BERNANKE. Now, on the other side of that, “significant” is not exactly a word that would blow most people away. [Laughter] It is significant, certainly.

MR. LACKER. “Notable”?

CHAIRMAN BERNANKE. “Significant.” [Laughter] I’m not suggesting any change. All right. President Plosser.

MR. PLOSSER. Just a comment. It’s fine to leave as in the original sentence. However, in listening to what people said about “significant,” in some sense, the significant risk domestically, as you point out, has actually mitigated somewhat. What is really true about the risk is what’s going to happen in Europe. Being more specific—that is the source of the significant risk, rather than being something else—would be clearer in some way about what

we're saying. So that's just a thought, maybe, for the future. Or maybe instead of saying "including global financial," we could say "particularly from global financial markets." But I don't want to gum up the works.

VICE CHAIRMAN DUDLEY. I think this is a really great question. You really don't want to point fingers.

MR. FISHER. It's implicit in what we're saying.

CHAIRMAN BERNANKE. Right, I guess. President Pinalto.

MS. PIANALTO. Just a question, though. When you say we're going to keep it the same as the last meeting, does that mean the word "remain" comes out?

CHAIRMAN BERNANKE. No. Replace the sentence that currently has the word "significant" in it with—

MS. PIANALTO. The exact same statement from last—

CHAIRMAN BERNANKE. Exact same: "Moreover, there are significant downside risks to the economic outlook, including strains in global financial markets."

MS. PIANALTO. So "remain" comes out.

CHAIRMAN BERNANKE. Yes, it's exactly identical to the last—in September. All right. I think I'm getting agreement. President Lockhart agrees. Okay, good. So we're ready to take a vote.

MS. DANKER. Okay. This vote covers alternative B as in the handout, with the substitution of the "Moreover" sentence from the September statement: "Moreover, there are significant downside risks to the economic outlook, including strains in global financial markets." And in paragraph 4, it retains "through mid-2013." It encompasses the associated directive as well.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes
Governor Duke	Yes
President Evans	No
President Fisher	Yes
President Kocherlakota	Yes
President Plosser	Yes
Governor Raskin	Yes
Governor Tarullo	Yes
Governor Yellen	Yes

CHAIRMAN BERNANKE. Okay. Thank you very much. A few announcements.

First, I do have a press conference at 2:15. It will be the usual format. It'll be screened in the Special Library, if anybody has nothing better to do. [Laughter] As has been the case, I will focus on our projections and talk about our policy stance in the context of those projections. I'm going to say that we discussed communications frameworks today. I will say we didn't come to any conclusions. I was thinking of saying that there was a sense that there was no need for a fundamental change in framework, that we were looking within the context of our current framework to try to find ways to better explain our policy expectations and outlook. Any concern about that? [No response] Okay. So that's at 2:15.

Coffee is available for those who would like to have some coffee, and there will be lunch served in the anteroom at 11:30. The next meeting is on December 13. Thank you.

END OF MEETING