Meeting of the Federal Open Market Committee on March 13, 2012

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, March 13, 2012, at 8:30 a.m. Those present were the following:

Ben Bernanke, Chairman
William C. Dudley, Vice Chairman
Elizabeth Duke
Jeffrey M. Lacker
Dennis P. Lockhart
Sandra Pianalto
Sarah Bloom Raskin
Daniel K. Tarullo
John C. Williams
Janet L. Yellen

James Bullard, Christine Cumming, Charles L. Evans, Esther L. George, and Eric Rosengren, Alternate Members of the Federal Open Market Committee

Richard W. Fisher, Narayana Kocherlakota, and Charles I. Plosser, Presidents of the Federal Reserve Banks of Dallas, Minneapolis, and Philadelphia, 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
Thomas C. Baxter, Deputy General Counsel
Steven B. Kamin, Economist
David W. Wilcox, Economist

David Altig, Thomas A. Connors, Michael P. Leahy, David Reifschneider, Glenn D. Rudebusch, William Wascher, and John A. Weinberg, Associate Economists

Brian Sack, Manager, System Open Market Account

Michael S. Gibson, Director, Division of Banking Supervision and Regulation, Board of Governors

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

Jon W. Faust and Andrew T. Levin, Special Advisors to the Board, Office of Board Members, Board of Governors

James A. Clouse, Deputy Director, Division of Monetary Affairs, Board of Governors

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

Seth B. Carpenter, Senior Associate Director, Division of Monetary Affairs, Board of Governors

Thomas Laubach, Senior Adviser, Division of Research and Statistics, Board of Governors; Ellen E. Meade, Stephen A. Meyer, and Joyce K. Zickler, Senior Advisers, Division of Monetary Affairs, Board of Governors

Eric M. Engen, Michael T. Kiley, and Michael G. Palumbo, Associate Directors, Division of Research and Statistics, Board of Governors

Edward Nelson, Section Chief, Division of Monetary Affairs, Board of Governors

Harvey Rosenblum and Daniel G. Sullivan, Executive Vice Presidents, Federal Reserve Banks of Dallas and Chicago, respectively

Craig S. Hakkio, Geoffrey Tootell, and Kei-Mu Yi, Senior Vice Presidents, Federal Reserve Banks of Kansas City, Boston, and Minneapolis, respectively

Michael Dotsey, Joseph G. Haubrich, Lorie K. Logan, and David C. Wheelock, Vice Presidents, Federal Reserve Banks of Philadelphia, Cleveland, New York, and St. Louis, respectively

Marc Giannoni, Senior Economist, Federal Reserve Bank of New York

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CHAIRMAN BERNANKE. Good morning, and let me turn to Brian Sack for the presentation.

MR. SACK.[1] Thank you, Mr. Chairman. Investors continued to become more optimistic about the economic outlook and less concerned about the risks associated with the European situation, leading to sizable gains in risky asset prices over the intermeeting period. This optimism was driven in part by the incoming economic data, which were somewhat stronger than investors had expected. In addition, investors grew increasingly confident that a disorderly outcome from the European bank and sovereign debt problems would be avoided due to the aggressive liquidity policies of the ECB and the completion of the debt exchange in Greece.

In response to these developments, equity prices increased notably since the last FOMC meeting, with the S&P 500 index advancing more than 4 percent, as shown in the upper-left panel of your first exhibit. Other risky assets also performed strongly, with yield spreads on corporate bonds and some structured credit products narrowing.

Despite this shift in sentiment toward riskier assets, the 10-year Treasury yield was little changed over the intermeeting period, as can be seen in the chart. In fact, the 10-year yield has held relatively steady since last fall, even though the S&P index has risen about 15 percent over that period. The low level of yields reflects that investors expect monetary policy to remain accommodative for a long period and see some chance that the FOMC could take additional policy actions.

Over the current intermeeting period, the most important development in this regard was the strengthening of the forward guidance about the federal funds rate in the January FOMC statement. Many investors had been expecting a change to this guidance, but the extension to "at least through late 2014" went beyond those expectations. In response, as shown to the right, primary dealers pushed back the expected timing of the first increase in the federal funds target rate, with the highest probability now placed on it occurring in the second half of 2014. Consistent with this shift, market-implied expectations for the federal funds rate beyond mid-2014 shifted down slightly over the intermeeting period.

Market participants generally understand that the policy guidance is not an absolute commitment, but instead is tied to the evolution of economic conditions. To get a sense of how this conditionality is viewed, the dealer survey asked for the combinations of the unemployment rate and inflation rate that would prompt the first increase in the federal funds target rate. The results, shown in the middle-left panel, indicate that respondents see the type of tradeoff between these variables that would be present under a Taylor-type policy rule, with the FOMC expected to wait for lower

[1] The materials used by Mr. Sack are appended to this transcript (appendix 1).

levels of the unemployment rate if inflation were running lower. The median response from the survey has the first increase in the federal funds target rate occurring with the unemployment rate around 7 percent and the inflation rate around 2 percent.

The chart also shows that this schedule has moved lower since last September, when the Desk first asked this question. This shift suggests that the change in the forward guidance caused market participants to reevaluate their assessment of the Committee's policy reaction function, with the FOMC now expected to wait for a lower level of the unemployment rate for a given level of inflation compared with the September survey.

Even though the commitment is viewed as conditional, the policy guidance had a meaningful effect on the amount of uncertainty perceived around the path of interest rates. As shown to the right, the implied volatility of short-term interest rates three years ahead—the horizon roughly consistent with the "late 2014" guidance at the time of the FOMC statement—moved down on the announcement, as investors saw higher chances that short-term interest rates would remain unchanged. It has since moved higher, presumably because the incoming data have raised the probability that economic conditions would warrant an earlier liftoff, although it remains very low by historical standards.

The prospect that the federal funds rate could remain at its current levels through late 2014 is clearly helping to hold down Treasury yields. In addition, the balance sheet policies implemented by the FOMC are also playing a role by keeping the term premium very low. As shown in the bottom-left panel, the 10-year term premium measured by the Kim–Wright model stands at minus 50 basis points, which is about 125 basis points below its average level since the late 1990s.

Analysis by the Board staff suggests that the FOMC's balance sheet actions have kept this term premium about 60 basis points lower than it would otherwise be, explaining about half of the deviation from its longer-run average. Of course, that estimate implies that the term premium would still be unusually low even in the absence of the FOMC's balance sheet actions. These patterns suggest that there is some risk that yields could move up meaningfully at some point, particularly as investors come to see the balance sheet as a less active policy instrument or anticipate a return of more-normal interest rate uncertainty. Perhaps reflecting such risk, the premium on options that provide protection against a rise in interest rates has been increasing in recent months.

The panel to the right focuses on the inflation prospects priced into the Treasury market. As can be seen, the five-year breakeven inflation rate has moved higher, driven by increases in energy prices and greater optimism about the growth outlook. However, the five-year, five-year-forward measure edged down, as longer-term inflation expectations remain well contained.

Your next exhibit turns to recent actions by the ECB and related developments in financial markets. As noted earlier, gains in risky asset prices have been driven in part by a perception that the risks related to the European situation have been reduced. While several factors have likely contributed to this perception, the most important development has been the three-year liquidity operations (the LTROs) offered by the ECB.

As shown in the upper-left panel, the three-year LTRO offered on February 29 was again met with substantial demand. This operation, in combination with the first LTRO back in December, boosted excess liquidity in the euro area to about €800 billion. At this point, the total amount of funding operations offered by the ECB stands at €1.1 trillion, with about 90 percent of that funding having a maturity of three years.

These liquidity operations helped improve funding conditions for European banks, as the LTROs all but eliminated the risk that banks would not be able to meet the substantial borrowing needs that they face over the first half of this year. Reflecting this improvement, the spread of three-month euro-denominated LIBOR over the OIS rate, shown to the right, has narrowed dramatically since the introduction of the LTROs. Moreover, European banks have been able to tap longer-term credit markets in larger size, issuing more debt over the past two months than they had over the entire second half of 2011.

Improvements have also been notable in dollar-denominated funding markets. As shown in the chart, the dollar-denominated LIBOR–OIS spread is now well off its peak, and anecdotal evidence indicates that some European financial institutions have been able to extend their unsecured funding in dollars to longer maturities. Similar improvements have been realized in the FX swap market, with the implied cost of dollar funding down sharply from last year's levels. Reflecting these positive developments, the total outstanding balance for the dollar liquidity swap lines with foreign central banks has declined from a peak of $110 billion to its current level of $65 billion.

In addition to its effects on bank funding conditions, the LTROs have helped bring down the sovereign debt spreads for peripheral European countries, in part because the availability of this funding has allowed banks to hold larger amounts of that debt than they otherwise would have maintained. The effect on sovereign yields has been more powerful than we had anticipated, with two-year Spanish and Italian spreads, shown in the middle-left panel, now having returned to levels observed last summer. As shown to the right, data for January show that Spanish and Italian banks did in fact increase their holdings of European debt following the first LTRO.

The improvement in European sovereign debt markets occurred despite the realization of a default event on Greek debt. Greek authorities executed a sizable debt exchange under which investors accepted a significant reduction in the principal value of their debt holdings. To achieve sufficient participation in this exchange, the Greek authorities last Friday exercised collective action clauses on those securities—

clauses that they had retroactively inserted just a few weeks earlier. As expected, this development led ISDA's Determinations Committee to decide that a credit event had occurred, triggering CDS contracts written on Greek sovereign debt. The CDS contracts will be settled following an auction process that will take place on March 19. At this point, market participants appear confident that the settlement process will proceed without any significant problems, with about $3 billion of net notional CDS to be settled.

Despite the passing of these key events, a number of important risks surround the European situation going forward, as Steve Kamin will discuss. These ongoing risks may be contributing to the cautious attitude that investors have regarding the U.S. financial sector. This sector also faces a range of questions about firms' business prospects and the ultimate effects of regulatory reform efforts. These concerns appear to be reflected in the CDS spreads for major U.S. financial firms, shown in the bottom-left panel. Although these spreads have improved since late last year, they remain well above the levels observed in the middle of 2011. This week, market participants are intently focused on the CCAR results that will be released, given the information that the results will provide about the strength of firms' balance sheets and the implications that might be drawn about their capital distribution plans.

The improvement in risk sentiment among investors, and the associated reduction in safe-haven asset demands, put modest downward pressure on the broad dollar index, as shown in the bottom-right panel. One currency that has bucked this trend is the Japanese yen, which depreciated about 6 percent against the dollar over the intermeeting period. This movement in part reflected the recent policy decision by the Bank of Japan to increase the amount of its asset purchases and to introduce a 1 percent inflation goal. Market participants have also focused to a greater degree on the erosion in Japan's trade balance, which has moved into deficit, perhaps contributing to the weakness of the yen.

Your final exhibit summarizes recent Desk operations and their effects on financial markets.

As summarized in the upper-left panel, the Desk has completed about $240 billion of the purchases and sales associated with the maturity extension program. These operations have generally been met with decent demand. However, as I noted in my last briefing, our purchases of long-term bonds had seen a trend toward lower coverage ratios and worse prices relative to market benchmarks. To address this issue, the Desk made a minor modification to its purchase schedule to operate more frequently and in smaller size in the bond sector, while achieving the same aggregate amount of purchases. So far, this change appears to have improved the performance of those operations.

As shown to the right, the transactions for the maturity extension program have been lengthening the average duration of our Treasury holdings, with this measure expected to reach seven years by the end of the program. However, the average

duration of the overall portfolio is about unchanged over the past year, as the duration of our MBS holdings has fallen with the decline in longer-term interest rates.

Some recent market commentary has argued that the Desk's sales of Treasury securities have contributed to an increase in shorter-term Treasury yields so far this year. Reinforcing this pattern, the seasonal increase in Treasury bill issuance has been more substantial than expected. As shown in the middle-left panel, the three-month Treasury bill rate has increased nearly 10 basis points since the beginning of the year, and the two-year yield has edged higher as well.

Overnight interest rates have also come under some upward pressure. Given the increase in supply, dealers have accumulated an unusually large stock of Treasury securities with maturities less than three years. Since dealers fund almost all of this collateral in the repo market, this pattern may have put upward pressure on the Treasury GC repo rate. However, only a small portion of this upward pressure has fed through to the federal funds rate, with that rate most recently trading at 11 or 12 basis points. Of course, it is possible that factors other than supply, such as a reversal of safe-haven flows, may also be contributing to the rise in shorter-term yields.

Other Desk operations have been focused on the reinvestment of principal payments on SOMA holdings of agency debt and MBS into MBS. The middle-right panel shows the distribution of coupons that the Desk has purchased as well as the distribution of principal paydowns that led to those purchases. Not surprisingly, the portfolio continues to evolve toward lower-coupon securities, reflecting the decision to concentrate purchases in newly produced securities. The Desk's purchases have constituted about 25 percent of the gross issuance of TBA-eligible securities since the reinvestments began in October.

These purchases have helped put downward pressure on the MBS option-adjusted spread to Treasuries, shown in the bottom-left panel. Another factor contributing to the narrowing of the MBS basis in recent months has been the increased expectations that the FOMC would implement a new asset purchase program concentrated in MBS. Some of the very recent widening from low levels may reflect diminished expectations for such a program in light of the improved sentiment about the economy.

As shown to the right, the Desk's primary dealer survey indicates that the median probability of an asset purchase program being enacted over the next year is currently 50 percent. This reading is a touch lower than that from our previous survey but remains substantial. Market participants see very little chance of such a policy action taking place at the current meeting, though.

It should also be noted that discussions among market participants have increasingly covered policy options beyond the type of LSAP that appears in the Tealbook. In particular, market participants have discussed the possibility of an expansion in the size of the maturity extension program that would have it continue

beyond the June end date, or the possibility of an asset purchase program that would be sterilized using the temporary reserve draining tools rather than sales of short-term Treasuries. Thank you.

CHAIRMAN BERNANKE. Thank you very much. Are there questions for Brian? President Lacker.

MR. LACKER. Thank you. Brian, in your discussion of exhibit 1, you said that survey participants understand that our forward guidance is not an absolute commitment. Complete absolute commitment suggests a polar case of an entirely noncontingent exit date and one that represents a commitment; at the other extreme is something that's merely a forecast. And it seems as though there would be something in between. So do they think it's something of a commitment?

MR. SACK. My best guess is that market participants regard it as somewhat of a commitment, if you mean by having made the statement that there's a slightly higher threshold to deviating from it. There's clear recognition that if economic conditions move sufficiently, the Committee will not be bound by that language. But I'm not sure it's regarded as purely a forecast. It may be seen, as I said, as raising the threshold for deviating, at least a touch.

MR. LACKER. I think we've tried to communicate clearly that it's a forecast, merely a forecast. So we're not getting through to them somehow? They view this as likely to inhibit our future action?

MR. SACK. Well, that's my best interpretation of the reading. It's hard, exactly, to determine just how much higher that threshold is. And they clearly see risk around the policy path. You can see that because the futures curve bends up to well above the current target range well before late 2014, and the implied volatility of that shown in chart 4 is obviously well above zero, so they clearly see meaningful risk that the funds rate could increase before late 2014.

MR. LACKER. As do we.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. I interpret it as not a commitment, but you need to have evidence to change your mind. So the data have to be definitive enough to change your view.

MR. LACKER. And that's a different characterization than we'd characterize it if we hadn't made the forward guidance?

VICE CHAIRMAN DUDLEY. Well, it says that the Committee has a prior, and to change the prior, they need evidence that suggests that that prior is incorrect. That's all.

CHAIRMAN BERNANKE. Let me just observe that we'll be getting into this in some depth later on today. President Fisher.

MR. FISHER. First, I want to thank Brian for his work. You've been under enormous pressure for a long time, and every one of your reports is outstanding. I know this is way premature, and we talked about what market expectations appear to be, given the presentation you made of further actions we might take. My question has to do with—again, very prematurely—what market expectations are for how we might go about draining when we want to drain. And I've heard, at least in terms of the presentations made by the New York Desk staff, that the focus would be on reverse repos and the Term Deposit Facility. I have a question about that, but do you have a sense of what markets are looking for? Most investors don't just look at one scenario; they look way down the road if they're good, particularly the sophisticated folks that analyze us. What do you sense they expect us to do once we get to this position that we've articulated? Assuming, and it may be too big an assumption, that we decide we might want to start draining rather than just keep adding on—we get to that point in the economy—what would you say is their expectation?

MR. SACK. I think market expectations on this question have been shaped mainly by the June 2011 exit principles that were in the FOMC minutes—

MR. FISHER. Still out there in the ether.

MR. SACK. —which stated that temporary draining tools may be used, essentially, right before beginning to increase the target federal funds rate. So I think market participants anticipate that tools will be used, but they'll be used in that sequence stated in those exit principles. Now, that leaves a lot of questions that aren't clear—for example, how the tools will be used, just how much draining will be done, and so on. So at this point, it's hard to judge; I think they anticipate that tools will be used in some size, but that the System will still have a lot of reserves, even at the time that the target funds rate is lifted.

MR. FISHER. Mr. Chairman, at some point I'd like us to have a fulsome discussion of this. I don't want to be cheeky, but I think of Professor Harold Hill in *The Music Man*; it's the "Think System." No need to practice playing the instrument—if you just think through the tune, you will play the tune. And of course, if you remember that movie, it ends up well. The River City Boys' Band marches into the room and plays Minuet in G. It's not perfectly tuned, but it works. We've never done this before. We have a substantially sized balance sheet. And I hope we can have—the timing is not right now—a very fulsome discussion of this because executing this is going to be quite an exercise.

I do have one suggestion, as we go through time, in terms of looking at the effect of the outcomes here on our balance sheet and our income statement. Most of the discussions and the articulations I've seen are on the baseline scenario. It might be helpful now to provide for a view on the balance sheet and income statement according to the alternative scenarios we have that have been laid out by the staff. I don't believe that's been done—at least I have not seen it. I

think that would be very helpful, just with respect to what the sensitivities are going forward. And then eventually, think through aloud how this might actually happen—working with you all, because you have all of the information or most of the information. Again, I hope that we all can march into that room and at least play a decent tune, and it works out beautifully, and we end up with Marian, because she was the star. But I am concerned that we can do a great deal of academic work here. I don't know how we're going to test the system. I know you've been tweaking a little bit to try to see how it responds. I want to express my concern that, having not done this before, we're going to have to think through very carefully, using the expertise of the Desk, which, again, I would argue is unparalleled. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Was your question about the balance sheet in reference to income and capital losses?

MR. FISHER. There are two points. One is in terms of how we execute a draining strategy when we are ready, and we're not there. The second point is understanding better, under alternative scenarios, what the impact is on our balance sheet and income statement of those scenarios obtaining, because right now, I believe, we base everything on the baseline scenario.

CHAIRMAN BERNANKE. No, that's not correct. We've done lots of alternative scenarios with much higher interest rates.

MR. FISHER. Have we shared it with the group?

CHAIRMAN BERNANKE. Yes, I think so.

MR. SACK. Yes, it was in an FOMC memo. We actually update those projections every round for our own internal purposes.

MR. FISHER. If you could share those, I would be grateful.

MR. SACK. Could I make a few comments about the reserve draining part of your question? I think it is important to realize that we face a considerable amount of uncertainty about how markets will behave as we drain and what the right strategy should be. And that uncertainty comes because we've never observed how markets act with our ability to pay interest on reserves, except for when we've been pinned against the zero bound. So we don't know the strength of that magnet for other short-term interest rates, and we've never used these tools in large size before. And not only that—I would add to the list that there are many regulatory reform efforts under way that could substantially affect the structure and functioning of money markets. So I agree that we face many areas of uncertainty, and I think in some sense, those uncertainties are going to require us to learn along the way and to figure this out. That's not to say that we shouldn't do as much advance planning as possible, but some of this is going to be inherently unpredictable in terms of how markets react, and we'll have to make adjustments.

MR. FISHER. And if I recall correctly, we were starting to test a little bit the reverse repos, fleshing out our muscle, developing that capability. I was just making the simple point that you obviously realize, but we're going to have to do a little bit more testing because right now, it's mostly theoretical, and yet we're going to have to exercise it at some point.

CHAIRMAN BERNANKE. Let me observe a couple of things. First, we have three distinct approaches to exiting. We have the various tools for draining reserves, including the time deposits and the reverse repos. We have the interest rate on excess reserves, which, in theory, should work all by itself. And then, third, of course, we have asset sales, which will always work. So we know we've got a set of different tools that are complementary, and we can use them in different combinations.

The other observation is, while we haven't done this in the United States—and, obviously, there are institutional differences and so on—these are very widely used around the world. The Bank of Japan, the ECB, and others, of course, use tools like this quite successfully. So, again, there may be institutional factors we have to take into account, but I don't want to overstate the uncertainty about whether we can drain, even if there is some bumpiness at some point.

MR. FISHER. That was one of the reasons I was curious as to what the market seems to be expecting us to do, too, because we have to deal with that factor as well.

CHAIRMAN BERNANKE. Sure.

MR. FISHER. And perhaps provide—maybe "guidance" is too strong a word—at least some orientation for fleshing out those expectations.

CHAIRMAN BERNANKE. Yes. The signaling problem is very difficult. I note that when we put out last summer the principles of exit, which we intended just to reassure—

MR. FISHER. Provide a framework.

CHAIRMAN BERNANKE. —the general view is that we were basically ready to exit at that point. And so we have to be very careful about how we communicate. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Brian, as usual, a crisp and excellent presentation here. I have a couple of questions on exhibit 1, panel 3, "Macroeconomic Conditions That Would Prompt First Rate Hike." I'm looking at this lower-left corner here, which says that the market, I guess, thinks that we would raise rates if headline inflation was 1 percent and unemployment was 6½ percent. I'm not sure how to interpret that.

MR. SACK. I think you interpreted it correctly. As I said in my remarks, the slope of this line could be seen as reflecting the type of tradeoff you would have in a Taylor rule. And

actually, in terms of magnitude, the slope is not that different from what you would get if you apply the Taylor (1999) rule to this. So I think that just reflects the tradeoff that the FOMC would wait until the unemployment rate got relatively low if inflation were running at that low level.

MR. BULLARD. All right. It just strikes me as a bit of a mismatch between, maybe, market expectations and what I think the Committee would actually do in that circumstance, because we have talked a lot about disinflation pressures or deflationary pressures. When we've gotten close to 1 percent in the past, that's made everybody nervous, including me. And so I don't know if it's a mismatch or not.

MR. SACK. Well, to state the obvious, this is a very oversimplified version of the reaction function, which was noted in the written comments. So, clearly, market participants see a number of other factors affecting the timing, not just these two variables.

MR. BULLARD. Okay. On exhibit 1, panel 6, "Breakeven Inflation Rates," five-year rates have gone up. You cited energy prices in part. I think that over a five-year time horizon, like us, they would see through energy price movements that are perceived to be transitory. So I'm not sure you can cite energy prices over a five-year time horizon as driving those inflation expectations.

MR. SACK. Well, if you just mechanically measure the effects on headline CPI from the rise in futures prices, and don't assume a full reversal of those energy prices, then you get some effect.

MR. BULLARD. So you'd say, to the extent that energy price increases are very persistent or permanent, that would feed through.

MR. SACK. Right—and have some persistence. Correct.

CHAIRMAN BERNANKE. What's happened to the forward prices for one to five years?

MR. SACK. Of breakevens?

CHAIRMAN BERNANKE. Of the breakevens.

MR. SACK. Clearly, the biggest effects are at the very short end of the breakeven curve, the first year or two, which is consistent with that story.

MR. BULLARD. Okay. And then my third quick question here—exhibit 3, panel 15, "Shorter-Term Interest Rates." We've got the three-month Treasury bill rate coming off zero, which is the first time that's happened in a while. What's the potential for that to go higher? Or I guess the question would be, what's the future of that?

MR. SACK. Well, it's hard to say. I wouldn't anticipate that it will continue to drift up substantially from here. And especially if it is, in part, a supply-related story, we would expect those supply effects not to continue to work in this direction. Both the sales from our portfolio and the bulge in the issuance of bills will come to an end by the middle of the year.

VICE CHAIRMAN DUDLEY. Brian, isn't there a slightly seasonal effect as you go into the tax season?

MR. SACK. Yes. The increase in bill supply is—I didn't say that—a seasonal effect, so it should—

MR. BULLARD. Did that happen last year as well?

VICE CHAIRMAN DUDLEY. It typically happens as you're going into the tax season.

MR. SACK. Yes, it's just a bit more aggressive and earlier this year than the market estimated.

MR. BULLARD. Okay. Thank you.

CHAIRMAN BERNANKE. President Williams.

MR. WILLIAMS. Yes, I have a question on exhibit 1, panel 5—on the term premium on the 10-year Treasury. Brian, I think you said that currently, your staff estimate is that the LSAPs are pushing down the term premium on the 10-year Treasury by 60 basis points. So my question, then, is, given our baseline scenario for what our balance sheet is going to look like over the next several years, with exit at, say, late 2014 for the funds rate, how do you see the path for this effect of the LSAPs over the next couple of years? Or specifically, what do you think the effect of the LSAPs will be on the 10-year Treasury yield, say, at the end of 2014?

MR. SACK. The staff model will have a trajectory of these effects, and without further balance sheet actions, they would gradually diminish from this point. I don't know exactly how much is unwound by the end of 2014, but I would guess about half or so.

MR. ENGLISH. Your question was about the end of 2014?

MR. WILLIAMS. Yes.

MR. ENGLISH. The staff estimates have, at the end of 2014, an effect under the Tealbook assumptions of about 25 basis points, down from about 60.

MR. WILLIAMS. Okay. Thank you.

CHAIRMAN BERNANKE. Other questions? [No response] Okay. Seeing no further questions, let's turn to the economic situation. Oh, I'm sorry. Without Debbie, I don't know what would happen to this place. Could I have a motion to ratify domestic open market operations?

MS. YELLEN. So moved.

CHAIRMAN BERNANKE. Without objection. Thank you. Item 2, "Economic Situation." Let me turn to Bill Wascher.

MR. WASCHER.[2] Thank you, Mr. Chairman. I'll be referring to the one exhibit in the packet labeled "Forecast Summary." In putting together our forecast this round, we've had to grapple with some unusual tensions in the current macroeconomic situation as portrayed by the available data—notably, that the information on the labor market seems to point to a stronger recovery than portrayed by the information on spending. Those tensions were only underscored by the recent data. The indicators of spending received since the January Tealbook have been something of a mixed bag, with the news on housing markets and business investment a little stronger than we expected, and the news on consumer spending somewhat weaker on net. In contrast, the data on the labor market and manufacturing production were much more favorable. Thus, a key question we faced was how much signal we should take from the nonspending indicators in setting our projection.

Starting with the labor market, last Friday's report showed employment as measured by the payroll survey posting a gain of 227,000 last month. The February increase, together with some small upward revisions to December and January, brought the average monthly pace of job growth over the past three months to nearly 250,000, about 100,000 higher than we had projected in the January Tealbook. Meanwhile, in the household survey, the unemployment rate was unchanged at 8.3 percent, holding last month's decline. Thus, while last Friday's labor report was not materially stronger than we had expected in the March Tealbook, the tone of the reports for January and February taken together was noticeably better than in the forecast we provided you in January. In addition, manufacturing IP in December and January came in well above our expectations.

With regard to the spending data, sales of motor vehicles moved up in January and February, near-term indicators of business fixed investment have been more upbeat than we anticipated, and even the housing sector managed to show a few faint signs of life. However, this moderately good news was more than offset by unexpected weakness in consumer spending. Apart from motor vehicles, real personal consumption expenditures looked to be coming in well below our expectations, leading us to mark down our projection for real PCE growth this quarter to an annual rate of just 1¼ percent. I would note, however, that this morning's retail sales report looks to be stronger than we were expecting and would probably lead us to revise the PCE forecast up somewhat.

In the Tealbook, we gave some weight to the apparent strength in the labor market, especially in promoting a recovery from the weak pace of consumer spending in recent months, and nudged up our near-term forecast a bit. But given the still relatively downbeat consumer sentiment figures and the likelihood that rising gasoline prices will restrain household spending in coming months, we kept our adjustment pretty small. In particular, our Tealbook forecast has real GDP growth moving up from an annual rate of 1¾ percent in the first quarter to 2¼ percent in the second, leaving growth over the first half of this year as a whole about ¼ percentage point higher than in the January Tealbook.

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[2] The materials used by Mr. Wascher are appended to this transcript (appendix 2).

However, it could be that we should have taken more signal from the labor market data. One way to illustrate this risk is with our factor model, which we highlighted in a box in the Tealbook. The forecast of the model is shown in the bottom-left panel of the exhibit, and I've updated it to include information from Friday's employment and merchandise trade reports (although not this morning's retail sales data).

This factor model extracts in a purely statistical fashion information about the state of the business cycle from a large and diverse set of economic indicators, most of them at higher frequency than the quarterly GDP data. As you can see, relative to the predictions made at the time of the January Tealbook, the first-quarter prediction of GDP growth from the factor model has changed little, mainly because it places a large weight on the incoming spending data. Going forward, however, the model takes substantially more signal from production and employment data, and, as a result, the model's prediction for GDP growth in the second quarter has revised up to 4 percent.

Turning to the medium-term projection, as illustrated in the upper-left panel, we marked up our forecast for real GDP growth by roughly ¼ percentage point in the second half of this year and in 2013. Along with the somewhat brighter tone of the incoming labor market data, these upward revisions incorporate the positive effects of a lower foreign exchange value of the dollar and a stronger projection for economic growth in our trading partners, which Steve will talk about shortly. In addition, we revised up our forecast for the stock market. The increase in oil prices since the last projection provides a partial offset.

Despite the upward revisions we made to our GDP forecast, we continue to anticipate a recovery that is subpar by historical standards. As in recent Tealbooks, we continue to see significant headwinds facing the economy, including ongoing worries about the European situation, a slow pace of improvement in credit availability and in the housing market, and a substantial drag from fiscal policy next year. In our projection, these factors combine to hold real GDP growth down to about 2½ percent in 2012 and 2¾ percent in 2013, not much above the assumed rate of growth in potential output.

Accordingly, as indicated in the upper-right panel, we see the unemployment rate as likely to decline only gradually this year and next. Nevertheless, with the jump-off point for unemployment noticeably lower than it was in the January Tealbook and our projection for GDP growth a little stronger, our forecast for the jobless rate has been revised down. In particular, we are projecting the unemployment rate to move down to about 7¾ percent by the end of 2013, about ½ percentage point below our previous projection. About ¼ percentage point of the decline over the forecast period is accounted for by the assumed expiration of emergency unemployment compensation at the end of this year.

As Bruce Fallick highlighted in his briefing for the Board yesterday, the persistent downtrend in the unemployment rate since last summer prompted us to confront another tension that has been building for some time—how to explain the sizable

decline in the unemployment rate since late 2010 in the context of relatively modest growth in real GDP. The basic puzzle is illustrated in a very simple way by the chart in the lower-right panel, which plots four-quarter changes in the unemployment rate against four-quarter percent changes in real GDP over the past 20 years. Clearly, this relationship isn't a tight one, but the error in 2011 looks to be especially large.

We can think of a number of potential explanations for this puzzle. But the one that we find most compelling relates to the dynamics of employment and productivity during the recession and recovery periods. In particular, in the depths of the financial crisis and deep recession, firms may have been so alarmed by ongoing and prospective declines in demand that they cut payrolls by considerably more than they ordinarily would have given the declines in output. This interpretation of the data is consistent with the observation on the chart for 2009, which shows that there was an unusually large rise in the unemployment rate that year relative to the change in real GDP.

This interpretation also suggests that, in parsing the changes in labor productivity over the past few years into their cyclical and structural components, we may have previously assigned too much permanence to the large productivity gains observed in 2009. Indeed, based on the substantial deceleration in productivity that occurred in 2011, it now appears that a smaller fraction of the gains in those earlier years was sustainable. Accordingly, our current view of the decline in the unemployment rate since late 2010 is that firms have been reversing part of their earlier workforce reductions in order to bring productivity back to more sustainable levels.

From the perspective of our supply-side projection, one implication is that the level of structural productivity—and hence potential output—was lower in recent years than we had previously assumed. The specific adjustments we made resulted in an output gap that is ½ percentage point narrower than in the January projection, thereby bringing it roughly into alignment with our estimate of the unemployment gap by the end of last year.

Of course, as I noted earlier, there are other potential explanations as well, including the possibility that the decline in unemployment is overstating the improvement in the labor market or that real GDP growth last year will eventually be revised up. However, we have no real basis for discounting the drop in the unemployment rate, as it lines up reasonably well with the improvement shown by other labor market indicators. And, at present, the information on gross domestic income, to which we have looked in the past for clues about the direction of future GDP revisions, does not suggest any substantial mismeasurement, although I would add that GDI has not always been a reliable guide. Finally, I would caution that even if the qualitative story we are telling is the right one, our ability to calibrate the size and timing of these dynamics is far from perfect, and we cannot be certain that we have the alignment right at the end of last year. Indeed, the continued decline in unemployment this quarter may suggest that the "catch-up" in hiring persisted into this year.

Turning to prices, the two middle panels of the exhibit summarize our projection for headline and core PCE inflation. The biggest news here, of course, has been the rise in crude oil prices and the accompanying run-up in gasoline prices in recent weeks. But we've also received incoming data on core prices that were a little above our expectations. As shown to the left, this combination is anticipated to boost total PCE inflation to slightly above 2 percent over the first half of this year, more than ½ percentage point higher than our forecast in January.

Over the medium-term, however, we see the effects of higher energy prices as playing out much as they did in 2011, when commodity prices also rose sharply early in the year. In particular, with the run-up in energy prices expected to end by early summer, we anticipate pressures on inflation to ease through the second half of this year and into next year. As shown in the middle-right panel, with inflation expectations remaining well anchored, resource utilization remaining well below normal, and the transitory upward pressures on inflation easing, we have core PCE price inflation drifting down to 1½ percent in the second half of this year and remaining at that pace in 2013; overall PCE inflation is projected to follow a similar trajectory. That said, our projection for inflation both this year and next is a little higher than in the January Tealbook, reflecting some pass-through from higher energy prices to core, the lower dollar, and the reduced amount of slack in the current projection.

The path of the federal funds rate implied by the Tealbook projection in combination with the outcome-based policy rule remains at the effective lower bound in 2012 and 2013. However, the upward revisions to PCE inflation and the narrower GDP gap in the current projection bring forward the date of the federal funds rate's liftoff from the effective lower bound by two quarters to the second quarter of 2014. Of course, other policy rules imply both earlier and later liftoff dates.

Steve will now continue our presentation.

MR. KAMIN. As I prepared my remarks for you today, I toyed with whether I could start my report with anything other than Europe. In the end, I was forced to conclude that, even though prospects for the region had improved, the European crisis remains the key driver of the foreign economic outlook. Nevertheless, it is remotely conceivable that, thanks to the ECB's three-year LTROs and the successful Greek debt restructuring, by later this year I could begin with a discussion of soaring oil prices, a hard landing in China, or perhaps even a currency bubble in Brazil.

At the time of your January meeting, European financial stresses had already eased notably. But we had been "head faked" by short-lived market rallies before, so we maintained our view that financial conditions would resume their deterioration until a more durable solution to the crisis was put in place. In the event, as Brian has described, peripheral sovereign spreads have continued to decline, and European banks made further progress in regaining access to dollar and euro funding. We now assume that the financial situation in Europe will show further, albeit likely halting, improvement over the forecast period.

Our more benign outlook is not just a case of extrapolating recent developments. The experience of the last several months suggests that banks' funding pressures were likely a more important driver of Europe's crisis than we had previously understood. With banks having borrowed around €1 trillion in three-year money from the ECB to cover future redemptions, and with the markets more comfortable that the ECB will intervene to allay future bank funding difficulties, a major source of risk has been alleviated. Additionally, a virtuous circle may be playing out as declines in yields on Italian and Spanish debt reduce these governments' cost of debt service, improve their fiscal situation, and thus allow these yields to decline still further.

Finally, European leaders are making progress on the policy front. Last week, Greece's privately held government debt was successfully reduced by about half its value, thereby averting a disorderly default and unlocking the door to an EU and IMF €130 billion rescue package. Later this month, European leaders will discuss lifting the cap on the combined resources of the temporary rescue fund, the EFSF, and its permanent replacement, the ESM, which would enlarge the EU and IMF financial backstop enough to fund peripheral governments for two years should market financing dry up. And Europeans are moving forward on a fiscal compact requiring them to limit structural fiscal deficits to ½ percent of GDP.

To be sure, European financial stresses remain quite elevated. Moreover, many of the risks that we've been worrying about for so long haven't gone away. Neither the enlargement of the European financial backstop nor the ratification of the fiscal compact is a done deal, and they could still fall through. By this summer, a failure of Greece to meet its targets under its new EU and IMF rescue program could once again raise the risk of a cutoff of funding, Greece's withdrawal from the euro area, and renewed market turbulence. In September, the IMF and EU could face the politically difficult decision of lending additional funds to Portugal, which no longer appears likely to regain market access anytime soon. And over the longer term, peripheral European governments face the daunting challenge of achieving ambitious budget targets while attempting to rebuild competitiveness and restart their moribund economies.

We take all of these risks very seriously. Nevertheless, we still judge the baseline outlook for Europe's financial situation to have improved. Accordingly, we are now projecting a euro-area recession that is shorter and shallower than in the January forecast. This revision also reflects better data than we had anticipated earlier. Although euro-area GDP fell 1¼ percent at an annual rate in the fourth quarter, both PMIs and measures of business and consumer confidence have moved back up since then. We are now projecting euro-area GDP to fall just another ½ percent in 2012 before edging up 1 percent next year, a dismal—but not horrific—performance.

The outlook for the global economy outside of Europe looks more solid. Admittedly, aggregate foreign economic growth plunged to only 1¼ percent in the fourth quarter, the lowest reading since early 2009. And the weakness wasn't all in Europe. Thailand's floods pushed its GDP down at about a 35 percent annual rate, and disruptions to supply chains lowered growth in many of its trading partners.

Partly for this reason, Japanese GDP contracted nearly 1 percent. And a severe drought helped pushed down growth in Mexico.

But most of these developments should prove transitory, and we expect total foreign growth to bounce back to 3 percent in the current quarter. Growth should maintain at about that pace the rest of this year before edging up to 3¼ percent in 2013. All told, our projection over the next two years is about ¼ percentage point higher than in the January Tealbook, reflecting the more benign outlook for Europe as well as the stronger forecast for the U.S. economy.

Notably, we have not taken much signal from China's recent announcement that it was lowering its growth target from 8 percent to 7½ percent. Since the 8 percent target was established in 2005, China's growth has averaged a much higher 11 percent. Moreover, we had already been predicting a slowdown to a steady 8 percent over the next two years, even before China's announcement.

In putting together our forecast, we also had to consider the effects of a factor that had receded in importance in the past half-year—oil prices. Since the time of the January Tealbook, spot prices for Brent crude—which recently have become a more reliable benchmark for oil prices than WTI—have risen about 14 percent. The run-up appears to primarily reflect concerns about the risk to global oil supply posed by the situation with Iran, as well as actual production disruptions in several countries. But higher oil prices also reflect expectations of stronger global growth—notably, nonfuel commodity prices have also moved up recently, albeit by less than for oil.

So far, the rise in oil prices we've seen to date should have only modest effects on foreign growth. Higher energy costs should put some upward pressure on foreign inflation in the near term. However, we expect this boost to recede as oil and other commodity prices flatten out, consistent with futures markets, so that later this year, inflation rates should stabilize near target levels in most of the major foreign economies. But, obviously, much larger shocks to oil prices are possible and pose an important risk to the outlook.

Amid contained inflation and lingering concerns about the strength of the global economy, foreign monetary policymakers are continuing to ease policy. The Bank of England and Bank of Japan both expanded their asset purchase programs over the intermeeting period. Moreover, the Bank of Japan, perhaps inspired by your own action in January, announced a 1 percent goal for inflation, although we give it little chance of reaching that goal anytime soon. The People's Bank of China further lowered reserve requirement ratios, and a raft of other central banks in emerging markets cut policy rates—most notably, Brazil, which lowered its rate 75 basis points to 9¾ percent.

Although many foreign policymakers remain concerned about growth, the improved global outlook and associated reversals of flight-to-safety flows, which have lowered the dollar, should be helpful for the U.S. economy. Folding in Friday's release of the January exports data, we project that U.S. real exports will grow in the

neighborhood of 6 percent this year and next. This is nearly 1 percentage point higher than in the January Tealbook, reflecting the stronger foreign growth in the current forecast, as well as a roughly 1 percent decline in the value of the dollar. Real imports should grow at a more subdued 4 percent over the next two years, similar to the January Tealbook, as the lower dollar about offsets the effect of higher U.S. GDP growth. Taken together, we now project net exports to make a slight positive contribution to GDP growth this year and next compared with the neutral contribution we wrote down in January.

Thank you. Bill and I will be happy to take your questions.

CHAIRMAN BERNANKE. Thank you very much. Questions? President Lockhart.

MR. LOCKHART. We have some, I think, good research about the sensitivity of the U.S. economy to spikes in oil prices. Jim Hamilton has done good work. Do you have an equivalent sense of the sensitivity of the European economy to strong spikes coming from geopolitical events?

MR. KAMIN. We have indeed done some analysis on that. And I should say that there are some different crosscurrents in terms of the effects that make it difficult to be very certain about these effects. On the one hand, the United States' economy is more oil-dependent than is Europe's in terms of efficiency of oil use. It's also true that the United States has lower specific taxes on oil use, so a given increment to oil prices results in a smaller percentage increase in retail gasoline prices in Europe than in the United States. On the other hand, the United States has less import dependence than Europe. Europe imports just about all of its oil, while in the U.S., it's not a full 100 percent. So these factors offset each other. I guess the analysis that we've done to date suggests that the U.S. economy is probably more vulnerable to an oil price shock than the advanced foreign economies, in general. And that likely applies to Europe, too. We'll probably need to do more analysis on that.

CHAIRMAN BERNANKE. Other questions? President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. On the forecast summary, the bottom-right panel, "Q4/Q4 Changes in Real GDP and Unemployment since 1990"—this is a statement of Okun's law. I'm going to do some ocular regression here. One thing that has struck me about the data is that unemployment obviously goes very high during recessions and drifts down slowly during expansions. And you can see that in this picture to some degree because the two dots that are far up in the left part of this panel, plus probably the three black dots that are not labeled, are likely all recession years in this picture. So one hypothesis that you might have is just that a lot of the fit of this regression is coming from a few data points that are really the recession data points. And if you throw those five points out, you'd probably get a horizontal line that would say that there's not much of a relationship for the expansion periods. So I would see recessions as a time when labor market relationships are disturbed a lot, and things break down, and then they just slowly recover during the expansion periods. But it doesn't matter too much whether you're growing at 2 percent or 3 percent or 4 percent. What do you think of that? Probably not much.

MR. WASCHER. I think your observation that, obviously, unemployment goes up a lot during recessions and has come down more slowly is certainly true. Over the last three recessions, we saw the jobless recovery in the early 1990s, the jobless recovery after the 2001 recession, and then again this time as well. And that contrasts with earlier recessions, where you saw unemployment come down much more quickly. So there is a question of whether there's been some sort of regime change in this Okun's law relationship since, say, the late 1980s or the 1990s. And that's something we're thinking about and working on.

At this point, the other thing I'd note is that for each of those recessions, we can point to idiosyncratic factors that may have resulted in that kind of pattern. For example, in the 2001

period, running up to that, there was this big high-tech boom, and it looked as though there were some adjustment costs for firms putting that high-tech equipment in place. And so the productivity gains that went along with it came later, and that contributed to a big boost in productivity and a slower rise in employment that period. It's not as obvious in the early 1990s, but there are stories of something similar, when firms reorganized their management and organizational systems to eliminate some middle management. And in this period, obviously—regardless of what you think about whether there's a regime change or not, I think the most recent period, clearly, is an extraordinary event. And even if there is a regime change, the story we're telling about firms becoming so frightened about the prospects that they really slashed employment quite sharply during the recession is probably still there.

So, again, we're thinking about these issues. Those are good observations that you make. I would say that this is a work in progress, and we're still thinking about how we should be modeling our Okun's law relationship.

CHAIRMAN BERNANKE. It seems as though it goes the other way, because we've seen in recent recessions pretty strong GDP recoveries but surprisingly slow declines in unemployment. Is that fair? But in this case, we're getting a weak GDP growth and a sharper decline in unemployment.

MR. WASCHER. Yes, that's right. That's the extraordinary aspect of this piece that I think is different from the shallow recessions of the 1990 and 2001 piece—that we are seeing some gradual improvement in economic activity, and we're seeing the reversal of the extreme job cuts that took place in late 2008 and 2009; they're reversing themselves both in terms of the unemployment rate and in terms of productivity.

MR. BULLARD. But Mr. Chairman, my point is just that if you take out the recession years, you won't have much of a fit in this regression here. The fit is coming mostly from those recession years, and because economic growth is slow and unemployment goes way up, in the regression, that contributes a lot.

MR. EVANS. Could I ask what this looked like when the unemployment rate fell from, say, 5¼ down to 4.4 percent during those periods of relatively strong expansion? Wouldn't the relationship hold up? It's not in the data that you're looking at, but it's a regularity.

MR. REIFSCHNEIDER. It tracks reasonably well through it.

MR. EVANS. I don't think it's just recessions and downturns.

MR. LACKER. There's that research paper by Jon Hilsenrath in yesterday's *Wall Street Journal*. That scatterplot suggests a more robust relationship.

MR. EVANS. We bring more than just our knowledge of the picture to the question.

MR. REIFSCHNEIDER. Well, in estimating these things, you can estimate it over the last 30 years, or you can estimate it over a longer period, and as Bill was alluding to and as you were alluding to, you can get hints in the more recent episodes that the cyclical dynamics may have changed some. But in any event, you can go back over, say, the last 30 years and the relationship fits reasonably well—as President Evans was saying—in those periods when it wasn't a recession but the unemployment rate was going down to 4½ percent. That said, your observation that a lot of the identification is given by recessions—well, that's true for 95 percent of all estimates of cyclical dynamics we get. The recessions are where you get a lot of identification, as the unemployment rate moves.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Yes, the same theme but going in a little different direction. I may not ask this question quite right, so maybe you'll interpret it correctly and in a sensible way. You posed the issue about, well, we've gotten stronger employment than we thought but continued weak growth—the issue we've been talking about. So over the last several months—actually, most of the fall—we kept having revisions up in employment data. They come out with an initial number, and there's been this string of upward revisions. When the GDP data come out, we see an upward revision in both income and unit labor costs. We continue to get the pretty strong employment numbers into the first of the year. I guess there will be another revision of GDP coming up later this month for the fourth quarter. I understand the risks that you point out. What I'm trying to ask is, at what point in your thinking about how the economy is evolving do you begin to shift your view about the forecast into a somewhat more positive framework? Is it going to take until we get final revisions of GDP to convince you that maybe growth was underestimated? How much longer would you need of 250,000 jobs being created every month? I'm trying to understand where the staff's tipping point is to begin to take a stronger path on board in your forecast, because right now, you seem to be inching it up, but with some reluctance. So at what point, and how do you think about taking it on board more?

MR. WASCHER. Right. I think we see the tensions as pretty wide this time, and we are fairly uncertain. What we haven't seen that we'd like to see is a little more strength on the spending side, the incoming spending data. The big GDP revisions we'll get will be in late July when they do the annual revision, and then we'll know more about 2011 and whether that ends up getting revised up more or not. But I think we've been reluctant to move up the forecast very much just because we haven't seen the strength in consumer spending, in particular, and in final demand, in general, that we feel we need to justify a stronger growth forecast going forward.

MR. PLOSSER. So in that context, you’re really going to be focusing on the spending side?

MR. WASCHER. I think that’s right. Again, as I noted, we’re really uncertain if our story is right in terms of firms doing some catch-up hiring to make up for the big job cuts earlier. That could still be going on, and I would think we’re weighing that as a possible risk. That itself will generate some income gains and some additional consumption, but we’d like to see more support from the spending data in terms of our baseline forecast. We have, obviously, put in an upside-risk forecast in the Tealbook as an alternative simulation, which I think could be something that’s going on and that we just haven’t picked up yet. But from the perspective of our baseline forecast, we’ve basically been reluctant to move up a lot because of the lack of supporting information on the spending side.

MR. REIFSCHNEIDER. Just to build on what Bill said, when we put the forecast together and we were deciding how much to revise down potential output to try to make the story hang together more, we could have gone further to try to better align what we saw on the employment side with the spending side, but we didn’t, in part because we were implicitly putting weight on the idea that we could get data revisions. But, say, come this summer when the BEA does its annual benchmark, we could easily find ourselves having higher output in 2011 than we saw. So we definitely did not dismiss that possibility. We’re putting some sort of probability on that event. We would not be shocked to find out that GDP did grow more strongly in 2011 than the published data now show. If we had dismissed that entirely, we probably would have had to revise down potential GDP even more. So we were trying, I think, to do that filtering exercise that you’re describing.

MR. WASCHER. Just one more thing, Dave. I think we still also see significant headwinds facing the economy.

MR. REIFSCHNEIDER. Yes.

MR. WASCHER. So, again, as I mentioned, the uncertainty about Europe, the problems in the housing market, only slow improvement in credit markets, the big fiscal restraint that looks as though it's going to come on next year—that suggests to us that a moderate pace of recovery is our best baseline forecast.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Yes, I wanted to follow up on this line of questioning, which I think is quite interesting. In some sense, what you're trying to do is to figure out how much is supply, how much is demand. That's a very loose way of characterizing things. My question is, to what extent do you think about the performance of your inflation forecast relative to actual inflation when you're thinking about your revisions for potential output? As I look at page 34 of the Tealbook A, which tracks the evolution of the staff's forecast, unemployment doesn't look that bad. On real GDP, the economy has underperformed relative to what the staff forecast, and inflation has been higher than what the staff forecast. So, to make my question sharp, to what extent does the behavior of inflation enter into your thinking about what potential output is?

MR. WASCHER. It does enter in. I think the problem is that taking much signal from inflation is difficult because the Phillips curve that we use is so flat.

MR. KOCHERLAKOTA. It's very flat, isn't it? Yes.

MR. WASCHER. It's hard to know. There are other things that are affecting inflation as well. I think it's just hard to know how much signal to take from that. So we do look at it; it is part of our system in terms of estimating potential output.

MR. KOCHERLAKOTA. Bill, how flat is it? You've probably told me this before. On page 30, you have the box "Framework for Board Staff Inflation Projections." What's the beta in that regression?

MR. WASCHER. The beta in the regression that was actually used to do the simulations is 0.065.

MR. KOCHERLAKOTA. Okay.

MR. WASCHER. But I think that's a little bit hard to interpret. It depends on the lag structure. In a model that has longer lags of inflation, it's something closer to 0.2.

MR. REIFSCHNEIDER. There's another point, I think, worth mentioning on page 34, which shows the evolution of the change in our forecast over time. I think it's fair to say that if you went back to the forecasts that were made in 2010, the weights we were putting on different models have evolved since then. And so the model that we are putting the most weight on now is the one that's described in the box, which I would describe as saying, look, longer-run inflation expectations are very well anchored. If you go back to 2010, we allowed much more scope to the idea that longer-run inflation expectations would get dragged down in the course of this deep recession. As we went through the course of 2010, we didn't see that happen. We go into 2011, and expectations just stayed remarkably flat no matter what. And so we've implicitly shifted our weight. If you look at that picture, I think that's a major effect on our thinking. Plus, there were also incoming data at the time and that sort of stuff. But at that time, we were thinking that we would end up at 1 percent, as opposed to, once we were in 2011 and today, thinking that it's just remarkable how well anchored expectations are and that we will tend to—I won't call it levitate up—just gravitate back to 2 percent as the economy comes out of the slump. We really upped our weight on that view of the world.

MR. KOCHERLAKOTA. Thanks.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. I'd like to follow up on this, if I could, Mr. Chairman. So despite the evolution you just described, you still are forecasting inflation to return to 1½ pretty soon and stay there a while. From this box, this analysis on pages 30 and 31, I take it that's because the size of the gap trumps the stability of expectations still. Is that correct?

MR. WASCHER. I think that over the 2012–13 period, it's partly that the gap is still so very large. It's also the fact that any pass-through from imported energy prices is expected to fade, and so that pushes core inflation back down. If you look at the extension going out farther, it drifts up toward 2 percent as the gap continues to close.

MR. LACKER. Is expected inflation around 2?

MR. WASCHER. Yes.

MR. REIFSCHNEIDER. Yes.

MR. LACKER. So I would expect that the fading of those things leads it to go to 2, not to something below 2. Something is pushing it below 2, right?

MR. REIFSCHNEIDER. Right, it's because of the high level of the gap. So that's holding down compensation and marginal costs and so on and so forth, and that's keeping inflation subdued. But as that fades, you go back to 2 percent.

In terms of thinking about the forecast, if you thought that there was less slack than we estimate in the forecast, or alternatively, if you thought the unemployment rate was going to come down a lot faster, you would have a different inflation forecast, assuming that you had our model. If you had a different model, you'd have another, different inflation forecast.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. It doesn't seem like an unreasonable forecast to me because if you look at labor compensation costs, they're very subdued. Average hourly earnings is about 2 percent year over year. The employment cost index is running about 2¼ percent year over year. Put in any reasonable productivity number—1, 1½ percent—and you're going to get labor costs rising at 1 percent a year. So it seems completely reasonable that if the oil price pressures were to abate, you could see inflation somewhat below 2 percent for a while.

MR. PLOSSER. Just a quick clarification.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Your assumptions about the behavior of oil prices and commodity prices—you're forecasting core and not headline, in some sense. I have two questions. One is, how do you then construct your headline forecast? And, two, in the Phillips curve model that you have here, regarding the shocks to oil and commodities that may enter into this as special factors, do you assume they are zero-mean shocks, or do they have a mean that's different than zero? In principle, if your inflation forecast was 2 percent and that was your target, and you treated the inflation movements as a zero-mean-distribution variable, you may have the wrong mean for the distribution of those shocks. So I'm wondering how those two things interact and then, ultimately, how you construct your headline PCE forecast.

MR. WASCHER. To start at the latter question, the headline forecast is, basically, we make a projection of consumer food prices and consumer energy prices.

MR. PLOSSER. And then add it to your forecast?

MR. WASCHER. And then we add it to the core figures.

MR. PLOSSER. Okay.

MR. WASCHER. In terms of the pass-through of commodity price shocks or energy price shocks, we use relative price shocks—that is, changes in energy prices relative to core.

MR. PLOSSER. Great—thank you.

CHAIRMAN BERNANKE. Are we ready to start our go-round? Why don't we start with the Vice Chairman?

VICE CHAIRMAN DUDLEY. Thank you. I certainly agree that the outlook has improved. On the growth side, I think I would cite three things. First, the employment–confidence nexus is now evolving in a more positive way. Second, as Steve Kamin mentioned, regarding the European situation, it seems that we've taken the worst case at least temporarily off the table. That was the situation where the banks and sovereigns were interrelated in a very bad way, and there was a real risk that they were going to spiral down and have a really massive credit crunch on Europe. The LTROs of the ECB seem to have taken that off the table, at least for now. And third, financial conditions have eased, and I view that as significant and supportive of economic growth.

But having said all that, I wouldn't get very excited about it. U.S. growth is still pretty disappointing. The average of GDP growth in Q4 and Q1 looks to be around 2½ percent. On employment gains that we're getting, as the staff has made clear, the rise in hours worked is mainly due to very weak productivity growth, not because GDP growth is very strong. So if we return to trend productivity without faster forward momentum on the demand side, then the labor market improvement that we're seeing is going to abate on its own accord.

The second thing I would mention is that growth may be being boosted temporarily by unseasonably mild weather. The population-weighted heating degree days were minus 14 percent in January and minus 14 percent in February compared with the long-term

average, and looking outside today, it seems as though March is shaping up to be very similar. And it's true that this depresses consumption of utility services, natural gas, and heating oil, but I think this is offset by a number of other channels that work in the opposite direction: higher construction activity, greater industrial production, and probably some firmness in other consumer spending, as it's easier for people to go out or they want to go out more often when the weather is better. We've looked at how these factors actually work, and if you look at the deviation of real GDP from its underlying trend when you get unusually warm winter weather, it looks as though the kinds of effects we've had this winter would add about ½ percentage point or so to GDP growth. There's a lot of dispersion around that, so I wouldn't want to take this too literally, but it seems that the boosting effects offset the depressing effects. So this is actually probably lifting growth rather than depressing growth.

The third thing I would note is that the impact of higher gasoline prices that we've talked about on real disposable personal income growth lies ahead of us. It hasn't really happened yet, and the reason why is, while gasoline prices have gone up, up to now that's been offset by lower natural gas prices, lower electricity rates, and the mild winter weather. So in terms of the amount of disposable income people have had for their total energy bill, they haven't really had any negative effect yet from the gasoline prices. I think the Iran oil sanctions do create the risk of a further increase in oil prices through a number of channels: one, an increase in precautionary demand for oil; two, the potential for supply disruptions. And the supply disruption may just be that there would be less demand for Iranian oil as the sanctions bite, which pushes other countries to buy other oil so that the amount of oil left over for us goes down. So we could see significantly higher oil prices. Jim Hamilton's work on oil suggests that we're not that far from a point where you start to get concerned. His work suggested that if Brent oil prices were going to

go to $150 a barrel—that's up about 20 percent from here—it would cut about 2½ percentage points off GDP growth through 2013. I think this risk is a more meaningful one than what we're generally giving some credence to.

Fourth, there are still plenty of other sources of downside risk. Europe: The bank deleveraging continues. Portugal: Interest rates are in the double digits for 10-year rates. We still have a lot of elections coming up in Greece and France and elsewhere. So there's a lot of political risk. In addition, on the downside-risk side, the banking system's stability, I think, remains at risk. Moody's has threatened to do up to three-notch downgrades for some of the major U.S. financial firms, and if that were to happen, most of the major U.S. dealers would be P-2 rated in terms of their short-term credit rating. We're not sure exactly how negative an effect that is, but it is interesting that there have really been very few securities dealers that have actually been viable over the long term with P-2 short-term credit ratings.

Finally, I want to touch on one other topic that's come up over time in this venue: The question is, did the housing boom essentially generate employment opportunities in construction that will never exist again? The idea here is that we're actually going to see a structural increase in unemployment going forward, compared with where we were in the last cycle, and a higher NAIRU, because people in the housing boom who were employed during the boom period aren't going to get reabsorbed back into the labor market and aren't going to be able to find jobs.

So we actually looked at the construction industry in some detail and asked ourselves the question, are there any signs that this industry is different in terms of difficulties of construction workers finding employment? And the bottom line: We found that construction workers have fared no worse, and often better, than other occupations. So let me just give you a couple of data points. First, we looked at the job-finding rate, and we found that the job-finding rate for people

in the construction area was very similar to those for other occupations until late 2010. Since then, there's actually been a greater improvement in construction than in other occupations into which construction workers move if they can't find work in construction. Second, we looked at exit from the labor force. Is there more exit from construction workers who are just leaving the labor force because they're discouraged? And we found that it was actually less than other occupations, such as food preparation, transportation, and production, which are the kinds of occupations that construction workers move into if they can't find employment.

And then finally, we looked at the displaced worker survey, which basically looks at people who have lost their jobs and at what's actually happening to those workers. We found that in construction, a slightly higher proportion than average was unemployed in construction, but a lower proportion had actually dropped out of the labor force altogether. If you look at the displaced worker survey, you find that 48.8 percent are employed overall, and for construction, 46.9 percent of the people are currently employed. So it's about the same. The bottom line is that there doesn't seem to be any evidence that construction workers are somehow unemployable, that they're stuck, that they're never going to get jobs again. At least based on our analysis, the idea that the structural unemployment rate has somehow climbed because these construction workers aren't going to get jobs—there's really very little support for that in the data currently. Thank you.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. The data since the last meeting are consistent with improved financial market conditions and continued progress in labor markets. On the other hand, the spending data have been very weak. How should we reconcile these differences? Focusing on financial and labor market conditions, one might conclude that the

recovery is gaining traction and that spending will improve as higher personal income and wealth lead to a virtuous cycle that propels us more quickly than the Tealbook forecast to full employment. Alternatively, a focus on the weak spending data would imply that the improvement in incoming data is temporary and the recent improvements in labor and financial market data are not sustainable if the economy continues to grow at only a 2 percent rate. It may take several quarters before we know which perspective better reflects the current economy. I am certainly hopeful that we are finally beginning to see a more robust recovery.

Financial market conditions are clearly improving. Some of the recent improvements reflect the removal of significant imminent downside tail risk. At least for now, Europe seems to have reduced the risk of a Lehman moment that had seriously hampered investors' willingness to commit to a better outlook. The S&P 500 has risen roughly 8 percent since the beginning of the year. Bond spreads and CDS spreads have improved. Bond issuance has been strong. The financial market recovery has gathered steam and reflects increased optimism about the likely economic outcomes. However, my enthusiasm is tempered by the fragility of some of the financial pillars, particularly the outlook for Europe. Peripheral European countries seem to be consistently missing deficit projections, rising unemployment in many European countries threatens both economic and political stability, and there is significant concern that the improvement in financial fundamentals is primarily due to special central bank actions, not changes in the fundamentals of these economies.

Labor market conditions have also improved. Firms seem more confident that the domestic economy is on the mend, which is reflected in the improved payroll employment numbers over the past three months. Again, however, there are reasons to be cautious. While residential investment seems to be improving, construction employment declined in February.

Government employment in February declined by only 6,000 jobs, but future government cuts remain quite likely and raise the possibility of looming additional cuts in government employment. Furthermore, the employment-to-population ratio for those aged 25 to 34 in February was 74.7, still more than 4 percentage points lower than it was four years ago. Finally, these employment figures can turn around quickly if demand doesn't follow suit soon. Just witness the beginning of last year.

And the spending data have been disappointing. Since the start of the recovery, real final sales have been growing at only a 1.7 percent rate, not much different than what I expect for this quarter. However, there are reasons to be optimistic. Housing and state and local spending, two sectors that have been unusually weak during this recovery, are showing some tentative signs of life. The improved employment growth and increased equity prices should, I hope, help support consumption, which, outside of the purchase of autos, has remained quite weak. Furthermore, if firms start hiring, it may be that we will see more business fixed investment than I currently expect.

In summary, financial markets and recent employment numbers make me hopeful, but I would be more convinced once we see more evidence of a robust recovery in spending. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. I'm going to, first, make a comment about my District; second, report, as I always do, on what I'm hearing from operators in the field; and, third, make a comment on inflation, bearing in mind the two previous interlocutors, who I thought gave a very good report, and also bearing in mind, before he leaves the room, Governor Tarullo's warning and yours that we must beware of "false dawns."

Against that background, I've tried to restrain my—I wouldn't say enthusiasm—interest in the fact that we are picking up in the pace of economic growth. I'll start with my own District and point out that payroll employment rose at a robust rate of 6.7 percent annualized in January. You have to take the BLS data—and it takes about a month after the labor report, as you know—and we also have our own seasonal adjustments at the Dallas Fed. This is the best employment period we've seen since October of 1996, the third-largest single-month employment gain in our 45-year history of this series. It's across all sectors except for government, as was pointed out earlier—mostly schoolteachers, by the way—which is the one sector that still is struggling. Our unemployment rate is at a 32-month low of 7.3 percent. That's a big number. Still, we're being flooded with job seekers coming into our District. It could be that unusual seasonal factors played a role in January's numbers. I've asked our staff to look at this very hard again. But our surveys that we conduct—the manufacturing survey, the retail survey, and the service-sector survey—and our Beige Book soundings for February are pointing to a strengthening labor market. I might add that our Manufacturing Outlook Survey has the highest correlation of all with the national numbers, followed by the Empire State and others. So at least from the standpoint of an unusual District, we're lucky, but it's broad based. And if my numbers are right, we accounted for about 20 percent of the nation's job growth in January. We'll see what happens in February.

In the "for what it's worth" category, and after listening very carefully to your comment about retail sales, which I didn't see this morning, and then the concerns that were expressed by Vice Chairman Dudley and by President Rosengren, this is what I'm hearing from the operators in the field. This consists of 32 pretty deep dives that I took over the last two weeks with big and small, public and private. I like to look at the MasterCard SpendingPulse because it's

comprehensive, and then see what I can deduce from that. But they've had, in terms of their numbers in the 11 sectors that they report, the best January and February in two years. Eleven out of the 11 retail sectors that are followed had increases that ranged from 14 percent for gasoline sales, which I'll come back to, to 9.6 percent for furnishings, 9.3 percent for apparel—those surprise me—down to 0.7 percent for department stores, which does not surprise me. That seems to be the area that's weakest.

Now, regarding the restaurant industry guest count, the restaurateurs that I talked to who represent the industry—not the restaurants I like to go to—have seen, for the first time, their guest count increase marginally, 0.5 percent year to date, but their revenues are up 3.2 percent. So there's a little bit of food inflation in there. The big food distributors have actually managed to push through a price increase of 3 to 4 percent. But this is done mainly through weighting. I noticed recently—having learned from Bush 41 that one should know the prices of things themselves—in looking at what is now considered to be a half-gallon of orange juice by the major distributor Minute Maid, it's no longer 64 ounces; it's now 59 ounces, but it's the same price. This is done through what they call weighting in the business. It certainly is bifurcated math at work in retail. The higher-income stores are moving forward—or at least their retail sales. Those at the lower end are, of course, having a more difficult time, although the largest distributor in the country in terms of retail sales is reporting that they're running at a much better pace—above 2 to 3 percent. To quote that CEO, "If you're looking for a bottom," according to his observation, "we have found it."

Regarding the truckers, it's interesting to me that if you talk to the very large truckers—I'll use an example, but it's not the only one I talked to—like Swift, they're running 5 million miles over plan. Their plan was to be up 5 to 7 percent for the year in 2012. To quote their

CEO, “We’re pedaling right along. It’s not robust” —I think he’s learned that word from economists—“but it is showing steady growth.” The railroads, all sectors other than coal—and that’s due to natural gas, which I’ll come back to in a minute—are picking up, including lumber shipments for the housing markets. There is a question of the seasonality, which I think Bill introduced here. We’ve had warmer weather than is typical, and I’m going to come back to real estate in a second as well. In terms of the airlines, mixed reports. But business travel is stronger. Leisure travel seems to be falling off a little bit.

In terms of telecommunications, to quote the CEO of one of the largest firms, “I’d be hard-pressed to find a sector anywhere in my business that isn’t doing well.” Prices at the retail level—that is, those affecting cell phones and so on—were raised 20 percent effective February 1. It stuck. Part of it has to do with the new gizmos that are coming out, particularly the Apple sales, which still are not being inhibited by price. In terms of business price increases, 4 to 5 percent has been put through as of February 1, and that has stuck. In all business sectors, including small businesses, to quote one of the CEOs of the major telcos, “It has legs, so they’re seeing in every single sector some improvement.”

My favorite indicator, beer—the volume did decrease by 3 percent in 2011. It is now back up. Typically, beer grows at 2½ percent annual volume. It’s a slow-growth business. But they just pushed through the “highest price increase ever,” which was up to 4 percent, and that seems to be sticking. So we’re seeing an increase in demand there, which is usually at the middle- to lower-income levels.

We talked a great deal about oil at this table. What I’m hearing from the large oil operators—and I think this is an important point—is that the Chinese have negotiated with the Persians for discount volumes. Oil is fungible. The supply side has not changed. Vice

Chairman Dudley made a very important point, which is that, in terms of the total cost of energy, we do have incredibly low natural gas prices. Now that, by the way, feeds in to our petrochemical production. And if you look, for example, at ethane costs, they're down 50 percent for the petrochemical producers, so we're seeing a boom in natural-gas-produced petrochemicals, which is our comparative advantage as a country relative to Europe. We see in the numbers from Texas that we had about $248 billion in total exports last year. A significant part was petrochemicals. I think there is an offset, and what I understand from listening to the large operators that do business across the energy sector is that, as Vice Chairman Dudley pointed out, the net energy cost is flat for the United States at this juncture, though it varies region by region depending on what they use for heating and air conditioning.

In terms of manufacturing, I think we've heard plenty about that.

Regarding housing, Mr. Chairman, you and I talked about this a little bit offline. I had a very good conversation with Chip Case in terms of the reliability of the Case-Shiller index. He has a very interesting perspective. It's driven by household formation. And roughly 6 to 7 million new households since 2004 have rented instead of buying. He sees some reversal taking place on that side, and it's not clear what kind of price or construction activity impact that will have. Let me add that there are a lot of unknowns there, with respect to tax reform and GSE reform and so on, that are very difficult to analyze and to forecast based upon. But in summary, I would say, in terms of construction and housing starts, I think it is important that home sales and housing starts have firmed by roughly 10 percent, with the pickup largely confined to the South, notably our part of the South. There was a modest recovery in train prior to the last two months. I don't think you can argue, Bill, that unusually warm weather is the only factor—although I think it has been helpful—because there was already some momentum building, as I

reported in the penultimate FOMC that we had. Simultaneous pickup in housing starts and payroll employment suggests that job growth may be starting to spur increased household formation, which is important as a variable, and could be the beginning of a virtuous job–homebuilding cycle, still limited by very tight mortgage availability. This suggests that housing construction might add a little more to the pace of recovery than forecast in the Tealbook.

Lastly, on inflation, we continue to analyze our trimmed mean data to see the underlying trend in PCE inflation, which looks to be between 1½ percent and 2 percent, probably now closer to the upper end of the range. With regard to gasoline prices, which I mentioned or threatened to come back to, I think it's important to realize that, given the seasonality factor that was applied using the Department of Energy data, we haven't seen the effect yet. February is where we'll see the impact. I think we should just be prepared from a presentational standpoint to see a pretty big effect evident in the February CPI and PCE numbers when they're released.

So that's the extent of my report, Mr. Chairman. I would add also, with regard to the impact of Europe, we hear about it when we talk to people in the field—that is, the operators of business; it's still amorphous. One thing that's pretty clear is that the European banks have drawn back. DNB Nor Bank, for example, which any shipper anywhere in the world throughout my lifetime could go to and borrow from, has made it clear that they're not lending to anybody but Norwegians. You see the same kind of pullback taking place among the French banks. You see it in BBVA, for example, which expanded dramatically outside of Spain. Still, their largest profit market happens to be Mexico. They're going to stay there. But when it comes to their U.S. customers, they've been pulling back, and they're getting closer to their customer base. I think that's where the impact is.

MR. KAMIN. We've heard complaints from Mexican officials about that, too.

MR. FISHER. Yes. It's not just from Mexico, though, if you talk to the shippers, for example, which I find interesting.

And then, lastly, I think we should probably drill further down in terms of the real effects outside the financial contagion aspect because it's still not clear to me how much, in terms of trade of goods and services, is with the PIIGS. Our numbers show it's a very small amount. And of course, you have to take into account Rotterdam as a distribution point. But mainly U.S. exports to Europe, which are 13 percent or so of our exports or whatever the number may be—roughly five-sixths of that goes to the core countries and not to the peripherals. So I would like to spend some more time on those data. I don't wish to discuss it now, but I think we still have an amorphous concern. You hear less about it with the CEOs and business operators. It's very ill defined. And I don't want to hang too much of my hat on the downside risk of Europe. It's a risk, but we can't quite put our fingers on exactly what that risk is. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. In the Sixth District, grassroots intelligence suggests more upside potential than is evident in the accumulating data, which themselves have been, on balance, positive and encouraging. In our most recent cycle of contacts, we heard quite upbeat statements on current conditions and expectations. Most reports on consumer spending were positive, certainly stronger than the January data indicated. Sales of home appliances, furniture, and autos were described as especially strong. Reports by firms of rising order books were consistent with improving measured manufacturing activity in the Southeast. We heard reports of an uptick in corporate interest and business fixed investment projects, and more of this activity seems to be capital expansion aimed at growth opportunities as opposed to replacement. Lending activities by banks, while still soft, are growing, and especially

lending by larger regional banks to larger companies. Bankers reported that credit quality of applicants is improving, and businesses noted that availability of credit has improved. While there is growing optimism, we heard expressions of continuing caution, especially from small and mid-sized businesses. The reports we heard suggest that businesses continue to carefully weigh all decisions that add to the cost base. So even though performance and outlook may be improving, we heard that this may not translate into new hiring in the near term for many firms.

Turning to the national outlook and the comparison of my forecast to that of the Tealbook, Atlanta's economic growth projection and the Board staff's are now essentially the same after the modest upward revision in this meeting's Tealbook. We differ from the Tealbook outlook as regarding inflation. We in Atlanta are more confident of measures of inflation rising to the Committee's target. We see less influence of economic slack as a restraint on the underlying price trend. My outlook projects headline and core inflation near our 2 percent objective over the near and medium terms. In support of this view, it's worth noting that we heard mention of potential bottlenecks in a number of industries from our pre-meeting business contacts. We heard growing expectations of price increases coming soon if the upside potential to economic activity materializes. One of my directors said that prices can be characterized as a coiled spring. The idea is that businesses that have heretofore been suffering margin squeeze will react quickly to raise prices if the recovery accelerates and demand picks up noticeably. That said, most do not feel they have much pricing power in the current environment.

As regards the balance of risks to both economic growth and inflation, I am inclined not to provide a single view that nets the upside and downside factors. Rather, I am thinking in terms of risk around a base-case scenario and then an additional assessment incorporating tail risk. In my base case, the evidence that economic activity appears to be gaining strength and

scope leads me to a view that there is upside potential over and above my current growth outlook. As suggested earlier, I also see some upside risk in the inflation outlook. As regards tail risk, I see less possibility of a financial event emanating from Europe, triggering instability here with a knock-on effect on the real economy. But the potential for an oil price spike and other disruptive effects tied to geopolitical developments in the Middle East represents a significant and intensifying risk to my outlook. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. The reports from my nonfinancial business contacts continue to be positive. Much of their commentary began with the statement, "It's like I discussed last time." The reports were good, but they generally were not yet of the kind we'd expect if we were in the midst of a truly significant acceleration in activity. The possible exception was those comments from the automakers, though, where the recent increases in sales and production were better than the improvements they had been expecting. Their sales forecasts for 2012 have been up to about 14.5 million units, and they have visions of reaching, before too long, the trend line in sales, which they now estimate at about 15½ million units. And the equipment manufacturers also continue to do very well. Global demand for agricultural, mining, and simply dirt-moving equipment remains strong, although there are signs of nervousness about markets in Latin America and China. Until this round, whenever I asked business contacts if they saw Europe slowing, they generally responded that they were nervous, but they had not yet experienced any slowing in their demand there. However, this time, most contacts with a presence in Europe cited some deterioration in those business lines. But they were not seeing anything dramatic, and everyone was hopeful that the most recent European policy actions would prove effective.

Our Chicago financial market contacts were quite upbeat this round. Concerns about a financial crisis emanating from Europe have abated. Conditions have improved in corporate credit markets, especially for high-yield bonds and in the secondary market for leveraged loans. In general, financial participants reported a greater appetite for risk-taking. So far, however, the risk-taking seems reasonably well controlled, and markets do not appear to be especially frothy.

Turning to the outlook, the continued improvements in labor markets are extremely welcome. More-upbeat consumer sentiment and a greater degree of optimism in financial markets also help. However, as the Tealbook describes quite well, the good news does not seem to be translating into robust GDP growth over the next few quarters, and I share the concerns of Vice Chairman Dudley and President Rosengren on that count. In my opinion, we should avoid complacency and the trap of lower expectations. Growth rates that are simply trend-like, or a little better, are nowhere near satisfactory. Our policy hole continues to be enormous. The Tealbook's rather conservative analysis now puts the output gap at 5 percent 33 months after the trough of the Great Recession. The outlook is seriously inconsistent with our mandate, in my opinion. GDP growth at 2 percent in the first half of this year makes no progress in closing the output gap, and the pickup in growth that we are projecting after that is so modest that the gap is still 3 percent at the end of 2014. The Tealbook analysis works hard to provide a fair and balanced approach to estimating the output gap. Yes, there is uncertainty, but that doesn't mean the gap is zero. Uncertainty also means it could be larger. The Tealbook's potential output analysis is supported by the lack of inflation projections above our long-run objective; I share that view of projected inflation. Putting all of this together, it seems like a pretty heavy burden to convincingly demonstrate that the output gap today is much smaller than 5 percentage points, and that it will be acceptably small by late 2014. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I just have a few brief remarks on the District and the national economy. The Eighth District economy continues to expand at a modest pace. Contacts report increased optimism concerning the remainder of 2012. Increased gasoline prices are causing some concern but, so far, do not seem to be altering household behavior. District agricultural businesses are buoyant and expect another good year. Both used and new equipment sales remain very strong, and land prices continue to show double-digit increases from one year earlier. Auto sales and manufacturing in the District remain strong. Firms wishing to hire often state that available workers do not have the appropriate skills. I agree with Vice Chairman Dudley that unseasonably warm weather seems to have touched nearly all businesses, and it does give me some pause in interpreting the recent data. I've often wondered if we could improve our seasonal adjustment; the wealth of data that we now have on weather wasn't available in past decades. I don't have a good idea about how to proceed on that, but I've often wondered why we continue to talk about weather when the data are supposed to be seasonally adjusted already. However, I do think it's a factor in this very warm winter here. Housing in the District is showing a few signs of improvement but seems unlikely to rebound in the near term. District bankers report intense competition for high-quality credits. Retailers report that price increases definitely stick in the current environment.

Nationally, I continue to interpret the data as generally better than expected. The improved situation in Europe has, at least for now, been very helpful for global financial markets and for the United States in particular. I am encouraged by improvements in U.S. labor markets, and I hope that we'll see further progress on that dimension during the remaining months of 2012. I think a key risk going forward for the U.S. economy is the strength of the Chinese

economy. The United States can prosper with the EU in recession, but I'm less sanguine if there is a sharper-than-expected slowdown in China and emerging Asia more generally. Some contacts have cited puzzlingly weak data from China in recent weeks, even before the recent trade report. However, for now, I remain reasonably confident that economic growth in emerging Asia will continue apace and that any implications for the United States will be minimal.

One area that I do not expect to recover quickly is residential housing. Households are overly indebted, and it will take many years to work off this debt. This is not a matter of business cycle dynamics, but of medium- and even longer-term adjustment. There were about 50 million homeowners as of the third quarter of 2011 in the United States carrying some amount of mortgage debt. From 1970 to 2005, the aggregate loan-to-value ratio for this group was about 60 percent. Today, the loan-to-value ratio is in excess of 90 percent. If we consider the 60 percent loan-to-value ratio to be the desired level or the steady-state level, households would have to pay off about $3 trillion in mortgage debt. That's about one-fourth of one year's U.S. GDP. That type of adjustment will take a very long time. This is absolutely a collapsed housing bubble. Thank you.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. While the improved economic data are encouraging, I'm reluctant to extrapolate this improvement all the way through the forecast horizon. I have bumped up my GDP growth projection to 2.8 percent for this year, but my projections for 2013 and 2014 are largely unchanged at around 3 percent. Given the January and February employment reports, I edged down my unemployment rate path, and the revisions to PCE prices and rising gasoline prices have led me to shift up my inflation projection a little.

While the incoming data have been encouraging, my business contacts remain cautious about the trajectory for growth. Here's how I would sum up their comments. Earlier in the recovery, they expected things to get better quickly because, from past experience, the economy usually bounces back after a recession. As this recovery has progressed, they learned not to take the recovery process for granted. My contacts tell me that only now, in 2012, does a sustainable expansion seem to be taking hold. Their orders are growing, and they are finally confident enough to resume some hiring. Still, some have commented that despite the general improvement in business conditions, their customers are still cautious. Overall, my business contacts have become more confident that the economy is on a stable expansion path, but they don't anticipate vigorous growth and they remain cautious. So while the strengthening of incoming data invites some optimism, my projection for the economy is still considerably less robust than it was last year at this time, when we were all forecasting much stronger growth for this year. On a more hopeful note, I am encouraged that my contacts suggest that economic growth is on firmer footing this time around, even if they expect the trajectory to be lower.

The labor market is hinting at the potential for greater resilience in the economy. Indeed, the employment gains of the last few months have lowered my unemployment rate projection by almost ½ percentage point this year and next, but again, compared with our projections last spring, unemployment still remains high. For some time, I have also been concerned that the unemployment rate could decline more slowly than I had projected, in light of the larger numbers of people out of the labor force who might reenter the labor force as the economy recovers. To assess this concern, my staff conducted some analysis, including labor force participation and its trend in a standard vector autoregression forecasting model. The interesting result was that, based on past recovery patterns, better GDP growth would likely foster a pickup in labor force

participation, but that the more rapid rate of GDP growth would be sufficient to keep the unemployment rate declining gradually. That finding would be an attractive possibility, and it helped address my concern about the unemployment rate path, but unfortunately I don't have this faster GDP growth in my baseline forecast.

On my outlook for inflation, the near-term momentum in price data led me to edge up my near-term projection. Importantly, following upward revisions to the fourth-quarter data and a 2 percent reading for January, the current year-over-year core PCE inflation rate stands at 1.9 percent. The trimmed mean CPI-based inflation measures have also been drifting up. Unlike my economic growth projections, when compared with March of last year, I'm expecting slightly higher inflation rates throughout the forecast horizon. For example, last March, I had expected 2012 core PCE inflation of roughly 1.3 percent, but now I'm projecting 1.8 percent for this year, very close to our stated objective. As for the recent jump in oil and gasoline prices, so far I've seen very little evidence of a repeat of the last big spike that we saw in energy prices in 2008. Unlike during that period of time, other commodity prices have been near flat, and household energy prices have also been flat. They have been influenced by an ample supply of natural gas and coal, as President Fisher reported, and they are actually down 1.2 percent over the last six months. Given that household energy and motor fuel have almost equal weights in the consumer's market basket, the softness in household energy prices should significantly mitigate the pressures from gasoline prices. Despite the recent pickup in the inflation rate, financial markets don't seem to expect rising inflation. Financial market inflation expectations are well below the levels of a year ago.

In assessing the risks to my outlook, I still see risk factors for economic growth being primarily to the downside, while risks to the unemployment rate remain primarily to the upside.

On my inflation outlook, I continue to see the risks as broadly balanced. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Economic activity in the Third District continues to improve. Our state-coincident indicators show increased activity in each of our three states, and our leading indexes convey an accelerating pace for future activity. Benchmark revisions have slightly improved the labor market picture in Pennsylvania and have significantly improved it in Delaware, whereas New Jersey has been more neutral. Further, many of our contacts in the District appear to be noticeably more optimistic. Manufacturing activity in the Third District as captured by our Business Outlook Survey continued to expand in March following a string of positive values that began in October after the summer retrenchment. The March data to be released on Thursday—which, by the way, are not final yet—are likely to show a number similar to, or maybe slightly less than, the February data. Indexes for new orders will be close to zero after very strong numbers in February, indicating that activity in March was similar to that in February. The employment index suggests further expansion of employment activity. Also, we are heartened that we continue to see strong readings on our future indexes. These indexes remain at levels consistent with historically strong growth in our region. General activity, shipments, and new orders are all expected to grow over the next six months. The improved sentiment we hear among manufacturers is also present more generally. I've been surprised by the more upbeat expectations of many of our business contacts, including, believe it or not, some builders. Building permits have recently shown a small uptick in our region, but the industry remains very depressed. Some of the optimism in this sector is due to increased activity in January, but, as many people have pointed out, that may be somewhat weather related. In any

event, I'm getting a very different reading from contacts concerning expectations of future activity. Whether that sentiment is just wishful thinking or a general response to real indicators is not entirely clear, but it is worthy of note that it is quite different from what we've seen over the past year.

The latest data on U.S. labor markets have led me to be more confident concerning my outlook for the economy. My January forecast in the SEP was for 3 percent GDP growth in 2012 and the unemployment rate declining about ½ percent to 7.8 percent by the end of the year, one-half of the decline that we experienced this past year, while the Tealbook sees virtually no improvement in unemployment at all this year. Job growth is solid, and I'm more confident that labor markets will continue to exhibit some strength going forward. Indeed, my unemployment rate forecast may prove to be too pessimistic, but even if growth in the labor force partially offsets stronger growth in employment and the unemployment metric, the employment numbers themselves, both in the household survey and establishment survey, have been strong and broad based in recent months. Combined with the current growth in unit labor costs that we heard about for the last quarter of last year, and reinforced by steady upward revisions we have seen in both employment figures and measures of personal income, it appears that the necessary foundations for a stronger consumption growth are improving. The recent strength in automobile purchases, I think, is just one ramification of the improved household economic fundamentals. Thus, I remain more optimistic than the Tealbook, which seems to me unduly pessimistic. Even after their what I would call imperceptible upward revisions in the outlook since January, it remains near the bottom of the projections of FOMC participants. Even so, the staff's evolving view has led them to bring forward the beginning of monetary tightening by about six months.

Regarding inflation, I am growing more concerned that it will begin to accelerate at some point rather than decline as the Tealbook continues to indicate in its projections. As I said, unit labor costs have grown, and the staff has reduced its forecast for labor productivity. Taken together, these two features imply a rising marginal cost and increasing price pressures in the standard New Keynesian paradigm. I am, therefore, increasingly uncomfortable with the idea that accommodative policy will have little or no consequences for the inflation outlook.

To summarize, I've been more optimistic than the Tealbook about the strength of the economy and a little more worried about price pressures going forward for a while, but that discrepancy may be widening as the staff forecast continues to downplay recent improvements. We have been misled before with a "false dawn," and we can't be entirely certain it won't happen again if the world slips into recession because of events in Europe or some other unanticipated shock. And, by the way, with respect to Europe, I do believe that while there remain risks in Europe, the likelihood of the financial meltdown scenario seems to have been substantially reduced. Broadly, I think the tail risks of a weakening world economy and a blowing up of Europe, in general, are much lower now than they were in our last two meetings. In general, then, I think that the staff forecast actually poses a risk that we could fall substantially behind the curve in the adjustment of policy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. As many have already mentioned, the news since our last meeting suggests modestly better prospects for near-term growth. The favorable news has mainly come from financial markets. In contrast, the message from incoming economic data, as President Rosengren and others noted, has actually been more mixed. And I actually found the factor model analysis in the Tealbook this time very helpful in

decomposing where the news was and the implication for the near-term outlook. So I hope that's something we can see more regularly.

Financial markets appear to have downweighted tail outcomes in Europe, as President Plosser mentioned, and so risk premiums declined and equity valuations have risen. Of course, the European problems have not been resolved, but they've merely been put off. Over the next few years, the total euro-area debt load will have grown even larger. So I'm not sure whether they're kicking the can down the road or whether they're rolling a snowball down a hill. [Laughter]

Now, the economic data are certainly open to alternative interpretations, and normally I'm a "glass half-full" kind of guy, but I think we must remember that there's still a long way to go to fill the economy to the top. For example, we need another couple of years of employment growth like we've seen in the last few months—and those have been very good months—just to recover the employment losses from the recession.

There are a variety of factors holding back the economy, and clearly housing is a big part of the story. My staff has examined the correlation between home prices and economic activity on a state-by-state level. Of course, we have three of the hardest-hit states in terms of the housing crash. It's not surprising that the states with the largest declines in house prices are also the ones that were hit hardest by the recession. These states have posted the largest drops in employment and the biggest increases in unemployment, and such results are consistent with academic studies that find clear links at the state level and at the local level between the housing bust and the severity of the recession. But what's interesting is that what held during the recession actually hasn't held during the recovery. So far in this upswing, the state-by-state correlation between house price declines and economic growth has largely disappeared. Last

year, for example, job growth was about the same in those states that had large house price declines and those that did not. More generally, recent indicators of economic recovery do not show unusual dispersion across states. In fact, today, more than two and a half years since the recovery began, the unemployment rate is higher in every single state than it was before the recession. The meager pace of recovery across all the states points to obstacles to economic growth that are largely nationwide in nature. Some of these obstacles are clearly related to housing and household balance sheets, but others are only indirectly related, including tight credit and pervasive economic uncertainty. This indicates that economic growth is likely to be restricted by national factors, not only by troubled local housing markets. So in terms of monetary policy, this evidence addresses one concern—that monetary policy has no traction in areas where households cannot refinance or are otherwise constrained by their balance sheets, but lots of traction elsewhere. If that were true, then stimulative monetary policy could fuel regional imbalances by overheating some local markets. But instead, given the common headwinds and widespread output shortfalls across the country, monetary policy appears well suited to try to promote general recovery across the country.

So, all in all, nothing has really altered my view that we are still in the midst of a fragile economic recovery. My forecast for real GDP growth remains at 2.4 percent for this year and 2.8 percent in 2013. Furthermore, the risks to this forecast lie predominantly to the downside. These risks are primarily ones that emanate from beyond our shores—they've already been mentioned—and there's no shortage of global threats to growth. As Steve mentioned, the list includes Middle East oil supply vulnerabilities, European financial stresses, and the possibility of a hard landing in China.

Let me conclude by talking about slack and the inflation outlook. Estimating the level of potential output, like many macro exercises, is always an uncertain exercise, and estimates evolve based on new information. So I thought it would be useful to look back and to see to what extent our estimates of potential output have changed since the recession began. This also provides a perspective on the extent to which we think the shocks to the economy have been to supply or demand. Our own calculations at the San Francisco Fed, constructed from a bottom-up production function accounting similar to that in the Tealbook, suggest that there have been significant downward supply-side revisions relative to our pre-crisis expectations. Indeed, we attribute about half of the current shortfall of real GDP from its pre-crisis trend to a downward revision of aggregate supply and about half to a shortfall in aggregate demand. Now, just to be clear, our estimate of the output gap currently is about 4 percent. The still-sizable demand shortfall is consistent with a wide variety of other alternative measures of resource utilization that also point to high levels of slack remaining, which should restrain the price pressures going forward. Unquestionably, the recent jump in crude oil prices is temporarily boosting headline inflation and will continue to do so in coming months. So I foresee PCE price inflation around 2 percent this year. However, oil prices are likely to level out or even edge down a bit next year, and given the high degree of slack, I expect PCE inflation to fall to about 1½ percent next year.

In summary, we've seen some welcome rays of sunlight in the economy lately, and that's good news, but we have yet to see clear evidence of a sustained increase in momentum in the economy. And developments abroad, including rising oil prices, cast shadows on the outlook. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Recent data and reports from the Fifth Federal Reserve District point to continued improvement this year. For manufacturing firms, business activities picked up pace despite some headwinds, and revenue growth in the service sector continued in February, although slightly less broadly than in previous months. According to our surveys, job growth is also broadening in both manufacturing and services. Our contacts have increasingly reported adding net new workers in recent weeks, particularly in the IT sector but also for other professional jobs and skilled manufacturing positions. I'm not sure how many of these were formerly construction workers. We'll have to ask in a future survey. As an aside, I found Vice Chairman Dudley's report on the data fascinating, but I'm not sure that if a lack of skills was restraining employment growth, there'd be a differential effect on different occupations in terms of their unemployment experience. So I need to think about these data some more.

Construction of new residential housing showed signs of improvement. The mild weather reportedly has allowed for building that normally would await the arrival of spring, but the overall levels of residential activity in our District remained very weak by historical standards. Contacts also have reported somewhat better conditions for commercial real estate leasing, particularly for office space. So, on balance, in the Fifth District we're seeing signs of improvement across a broadening array of sectors, and I'd characterize the reports as similar in tenor to what President Lockhart reported for the Sixth District.

The firming we've seen in the Fifth District is also apparent in the national data, I think—more than 1.2 million net new jobs added over the last six months. That should lay a foundation for resumption of consumption growth. Overall consumer spending may have been flat over the last few months, but consumer confidence must be reasonably decent because we're now seeing

car and truck sales at the highest level in almost four years, higher even than during the Cash for Clunkers splurge. Business investment and exports are continuing to support overall activity, and even residential investment is contributing to growth. All told, real growth prospects have clearly improved in recent weeks, and downside risks have diminished noticeably.

The staff was wise to raise the projection for core inflation over the forecast horizon, although, personally, I think they should have gone further. While core inflation did subside following the string of firm readings in the first half of 2011, the monthly numbers have been steadily increasing since September, and in fact, the latest reading was a shade above 2 percent at an annual rate, in line with the three-month and the year-over-year measures. Despite that, the staff persists in forecasting a decline in core inflation to around 1½ percent, as we discussed earlier. Personally, I'd be surprised if we actually get such a decline this year and next. Both the survey- and the market-based measures of inflation expectations seem to me more aligned with 2 percent inflation than with rates below that. Moreover, we know that overall inflation will move higher this spring, if only because of the gasoline prices that we've already seen at the pump and that are in train. And the broad pattern over the last couple of decades has been for energy prices to bleed into core, as the staff noted in their special box. So I suspect that core inflation is more likely to rise than fall in coming quarters, in which case we may find it challenging to keep inflation expectations anchored near 2 percent. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. The Tenth District economy continues to expand moderately. Although consumer spending growth was modest in the post-holiday period, retailers anticipate rising sales in coming months. District manufacturing activity rebounded in January and February from a soft December, and factory operators expect solid growth in

production, hiring, and capital spending plans. Activity in the commodities-producing regions of the District remain solid, and farmland continues to sell at record highs despite a gradual decline in crop prices. Residential and commercial real estate activity edged up in January and early February. Existing-home inventories declined as lower prices spurred a modest increase in sales, and new commercial construction increased and was expected to rise further with more projects in the pipeline. District bankers are reporting increased loan demand, although some readily admit that pricing and underwriting standards suffer from intense competition. Fourth-quarter data and anecdotal information also suggest banks are extending the maturity of their portfolios, some admitting their reliance on the FOMC's "late 2014" language.

Turning to the national outlook, several spending indicators from consumers and businesses have been a bit weaker than I anticipated at the start of the first quarter, and the recent surge in oil prices is likely to cut into real disposable income and weigh on consumer spending over the next few months. Longer term, however, signs of a strengthening economy are increasingly positive. A number of labor market indicators are taking on a brighter tone, and the labor market recovery appears to be progressing more rapidly than I previously expected. The corresponding increases in labor income should provide important momentum for the economy in the coming year. I see this strength also reflected in the pace of expansion in service industries and improved consumer sentiment. And while activity in the housing market remains at very low levels, rebounding household formation should help with the recovery of this important sector. Thus, while I expect that growth in the first half of this year will be a bit more sluggish than in the Tealbook, I have revised up my medium-term forecast and project a brighter outlook for growth than the Tealbook, coupled with substantially more improvement in the unemployment rate over the next few years.

In terms of prices, recent data releases indicate that the apparent decline in inflation at the end of last year was initially overstated, and we are now experiencing another surge in oil prices that will increase inflationary pressures in the near term. The combination of these factors, along with my stronger path for medium-term growth, has led me to revise up my path for inflation. I now expect inflation to be above 2 percent in the near term and then stabilize at 2 percent in the medium term.

As others have noted, several factors pose headwinds and downside risks for economic activity over the next few years. The European situation, as well as geopolitical tensions already mentioned in terms of oil, may pose a significant risk for the outlook for inflation and economic growth. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. I understand coffee is ready. Why don't we take a break and come back at 11 o'clock? Thank you.

[Coffee break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence? And let's turn to President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I'm especially grateful that you allowed my colleagues around the table a chance to get some coffee before listening to me. [Laughter] Useful input for them.

I think my home state of Minnesota provides a great illustration of how hard it is to measure output gaps. In some ways, slack seems small in Minnesota. The unemployment rate has fallen to 5.6 percent, and my staff is currently forecasting that it will be below 5 percent by the end of the year. Vacancies in the fourth quarter of 2011 in Minnesota were as large as in the fourth quarter of 2007. Just as a sidebar, while President Williams is right that all states are

experiencing elevated unemployment relative to 2007, there is a wide range of experiences across that elevation. North Dakota would be quite different from Nevada, and in Minnesota, as I've just talked about, we're thinking about unemployment being back down below its 2007 level by the end of the year. To go on, in Minnesota, we've heard persistent reports of 3 percent wage increases and occasional reports of 4 percent wage increases. All these signs would point to relatively little slack in this state. But at the same time, one could also argue that slack is large, because inflation-adjusted per capita income in Minnesota remains below its 2007 level.

The March Tealbook discusses how similar challenges exist in measuring output gaps at the national level. I would say that I appreciated the staff's work on this, and I think their recent—to use President Evans's words—"fair and balanced" revision of the output gap is a step in the right direction. I will argue, though, that this adjustment may not have gone far enough. So, what evidence leads me to believe that slack is lower than the output gap of minus 5.3 percent that's in the Tealbook? First, average weekly hours, as measured by the current establishment survey, are essentially back to 2007 levels. Second, the fraction of people who have been unemployed for less than six months is down to 4.7 percent, which is actually below the average level from the past 40 years. Third, hourly compensation increased at a 4 percent annual rate in the second half of last year. Unit labor costs also rose significantly faster than the Committee's target inflation rate of 2 percent in the second half of last year. That is, as we all know, a relatively noisy indicator, but it's still an indicator. Fourth, capacity utilization has returned to near-normal 2004 levels, in part because capacity has shrunk, but there are presumably costs to increasing that capacity that are different from increasing the usage of existing capacity. Finally, private-sector inflation forecasts remain very close to the Fed's 2 percent target. Indeed, my own outlook, like President George's, is that our accommodative

policy will lead average PCE inflation to rise above 2 percent over the next two years. I'm less sanguine than she is that inflation will stabilize at that level, because that depends on policy choices, and we would have to make choices to make that happen.

These data suggest that the output gap could be less negative than is estimated in the Tealbook. They also suggest that the relevant discrepancy could be large. From an Okun's law perspective, the Tealbook's measure of the output gap is well calibrated to the fraction of people who are unemployed, including those who have been unemployed for more than six months. If we instead calibrated the output gap to the fraction of those people who have been unemployed for less than six months, we would reach the conclusion that it was near zero or even positive.

So we could think about this issue intuitively as follows. Suppose we continue with our extraordinary level of accommodation and are able to generate an increase in aggregate demand. Crudely, there are two ways that firms could meet that new demand. The first approach would be to turn to hiring workers who have been unemployed for more than six months or who are currently out of the labor force. And this approach would have little inflationary pressures. The second approach would be to compete with other firms for their workers or to look for recently unemployed workers. This approach would drive up wages and lead to inflationary pressures, but it would have relatively little effect on the long-term unemployment rate. To the extent that firms meet new demand by using this second strategy, I would say that the true output gap is in fact lower than the Tealbook's estimate. The problem is that even relatively small upward adjustments to the Tealbook estimate of the output gap can have big effects on policy. Suppose, for example, that the output gap is better approximated by minus 4 percent, as opposed to the Tealbook estimate of minus 5.3 percent. That's the same as the estimate that the San Francisco Fed apparently is getting, as reported by President Williams—the minus 4 percent number.

That's roughly equivalent to saying that the NAIRU is 60 basis points higher than the staff's estimates. Then, according to the Taylor (1999) rule, this would imply that the fed funds rate should be around zero, and that we should be initiating our exit strategy described last June.

So, at this point, I've mentioned Taylor (1999), and my mentioning that and thinking that we should be using that as some kind of benchmark may seem to miss the message of the very thoughtful memo we got from Erceg et al. That memo makes clear that there are benefits to providing more commitment than is embedded in the Taylor rule. I think this is a very important point. I just don't see how we are supposed to force future policymakers to do what is in our interest as opposed to theirs. Indeed, such a commitment is really a violation on the part of those future policymakers of the consensus framework statement that we issued at the last meeting. That statement requires policymakers 5 or 10 years from now to pursue the dual mandate and not tolerate high rates of inflation just to keep some promises made by their predecessors operating today. I don't see us as having a way to commit future FOMCs to follow what would be unduly easy policy from their perspective. It follows that I don't see nominal income targeting as being a viable strategy. Once we realize that commitment isn't possible, I would say that the graphs in the Tealbook B, which I liked quite a bit—I like the comparisons they offer—and the results of the Erceg et al. memo imply that the Taylor (1999) rule provides a reasonable approximation to what we should be doing, even if we take the extreme assumption of treating FRB/US as literally true, as opposed to only itself providing a good approximation.

So, to sum up, I don't think commitment is possible, and given that, I think Taylor (1999) seems like a reasonable rule to use in the absence of commitment. I see reasons for suspecting that the Tealbook estimate of the output gap is too negative. Using a Taylor rule with an output gap of, say, minus 4 percent, it would be hard to see a justification for increasing our level of

accommodation. This discussion ignores the possibility of adjusting the rules for balance sheet policy. In my policy go-round, I'll discuss how we should and can account for that kind of policy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I agree with the view expressed around the table that we're seeing a genuine and very welcome improvement in the labor market. A wide range of evidence supports this conclusion. The pace of employment gains has picked up in both the establishment and household surveys, and job gains appear to be widespread across industries. Unemployment insurance claims are down, the hourly workweek has returned to pre-crisis levels, and households are telling pollsters that the employment situation is rosier. For example, the highest proportion of consumers in the history of the Michigan survey spontaneously reported hearing about recent employment gains, and a larger number of consumers expect declines in the jobless rate than at any time since 2004. The Rasmussen Employment Index—another measure of workers' perceptions of the labor market—jumped 7 points in February to its highest level since September 2008. And now that layoffs have abated, chief financial officers polled in a long-running survey by Duke's Fuqua School report that employee morale, a top-ranked concern at the end of 2008, has improved considerably. Notwithstanding these improvements in the employment picture, we still have a long way to go before labor market conditions could be described as normal. For example, the quit rate, a reflection of workers' willingness and ability to change jobs, while up from the trough reached in January 2010, is still nowhere near its pre-recession level. The pace of hiring has improved, but only slightly, and the duration of unemployment spells remains exceptionally long.

One indicator of the degree of labor market slack is the frequency with which firms report that their ability to attract and retain qualified workers is among their top business concerns. Of course, many of our Reserve Bank directors and other business contacts routinely cite such concerns because certain skills are chronically in short supply. For example, even at the end of 2009, with unemployment hovering near 10 percent, around 25 percent of firms ranked attracting and retaining workers among their top three business concerns. That fraction has picked up. In the first quarter of 2012, about 35 percent of firms listed it among their top three concerns. But 35 percent remains a far cry from the 62 percent that ranked their inability to attract and retain workers as a top concern in June 2008, prior to the failure of Lehman.

An important question bearing on policy, and particularly on our guidance concerning the date of liftoff, is whether the unemployment rate is poised to level off from here, as in the staff forecast, or instead decline more rapidly, continuing the pattern we've been seeing in recent months. This is a key question and one that's hard to answer, because it will depend both on the pace of productivity growth and on the strength of demand. With respect to the strength of demand, I agree with the staff view that the spending data, while mixed, point overall to only trend-like economic growth in the coming year. There are certainly bright spots, like auto sales. With financing readily available, considerable pent-up demand, and improving consumer confidence, sales have turned robust, but consumer spending in most other categories is expanding only moderately. This is consistent with consumer sentiment readings, which have improved but to levels that are still not high. For example, the latest Rasmussen survey reveals that 40 percent of American adults still believe the United States is at least somewhat likely to enter an economic depression similar to the one during the 1930s in the next few years. This finding is down from 52 percent in November, but it's hardly a ringing expression of confidence

in the future. Moreover, in spite of their improved perceptions concerning the labor market, very few consumers have actually positively altered their own grim evaluations of their personal finances. Just one in four households anticipated financial gains in the year ahead. Of course, there is the downside risk, too, that consumer sentiment could falter in the face of further rises in gas prices. Business surveys likewise suggest only moderate growth going forward. Small business owners have become less pessimistic about the outlook for real sales growth. Even so, optimism in the NFIB survey remains mired at a very low level, suggesting only glacial improvement in the economy in the year ahead. The CFOs interviewed by the Fuqua School in March were notably more optimistic than in December, but they still pegged the odds of recession in 2012 at one in four.

The pace of productivity growth will be another key variable influencing hiring. Over the last year, productivity growth all but stalled. According to staff estimates, 0.8 percentage point of the decline in unemployment can be attributed to this productivity slowdown, which the staff interprets as an unwinding by firms of unsustainably low labor input following the very aggressive job cuts during the financial crisis. Importantly for the forecast, they see the payback period as now ending, projecting over the medium term that labor input will increase in line with output, reverting toward its trend. The Tealbook's modal outlook is by no means an outlier compared with the projections of outside forecasters. For example, in the latest Blue Chip survey that was published last Friday, the consensus outlook is for real GDP growth to hover around 2½ to 3 percent over the next few years and for the unemployment rate to decline only gradually to 7.2 percent in 2014 and to finally drop below 6 percent in 2018. Like the staff, the Blue Chip consensus also has a subdued outlook for inflation over the coming years.

To summarize, the intermeeting period has brought good news concerning the labor market, but the improvement we've seen is puzzling given the evidence we have that demand is growing at only a moderate pace. How this puzzle is resolved will have important implications for the path of unemployment and for policy over coming years. For now, I think it's important to monitor unfolding developments before drawing policy conclusions.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I'll start by talking briefly about general credit conditions, and then I'll move on to some pretty amazing stories about housing.

C&I loan growth is steady but not spectacular. Unused commitments for C&I loans are also growing and represent potential additional funding that is roughly equal to current balances outstanding. However, it's important to remember that C&I represents only about one-fourth of bank core loan portfolios. And even though every banker talks about the level of competition, while spreads on new loans have come down from their highs, they are still pretty healthy compared with pre-crisis levels. Most of the growth is in loans to larger companies, and small business lending is pretty flat. Commercial real estate loans continue to decline gradually, as loans for existing structures are relatively flat, and construction loan portfolios remain in liquidation mode. Although total consumer credit is increasing, it must be doing so in nonbank portfolios, as balances on bank books declined in January and February. As I've been saying for a while now, with the exception of mortgages, I don't believe credit availability will hinder the recovery at all, nor do I believe that we have to worry about lending running too hot—demand is just too weak—or about banks lowering standards to get volume because all have been burned by credit problems this cycle, and they will be slow to forget.

I'd like to focus the rest of my comments on housing and, in particular, on the overhang of inventory that's holding down house prices. In my last round of calls, community bankers had some pretty surprising stories about excess inventory of lots and houses that had been marked down substantially in some markets. In support of these anecdotes, I noted that nationally, the inventory of existing homes came down to six months of sales, which meant that some markets were down in the two-to-three-month range, a level that usually indicates a seller's market. When I made my calls this time, I heard the same kinds of stories about tight supply from regional and national mortgage lenders, leading me to believe that the inventory overhang we've been so worried about might have finally disappeared in a lot of markets, and that the prospects of even tighter supply are on the horizon. A few weeks ago, the GSEs announced a pilot program soliciting investor interest in blocks of single-family homes located in several markets where supply is the largest. And in a sign that such sales might be successful, at least one large bank told me of strong interest from investors for block purchases of OREO properties. In fact, the bank had just closed the sale of a $40 million package of residential real estate to a single investor. Indeed, even in the Miami condo market, a poster child for overbuilding, inventory has reportedly come down from 24,000 units to 2,300 units, a level in line with historical norms. I found this report so unbelievable that I had to confirm its reasonableness with President Lockhart before I dared repeat it. Sure enough, Latin American buyers and rental conversions have soaked up the excess inventory. And according to an article in the *Wall Street Journal* this morning, the same thing is happening in Phoenix, with Canadians playing the role of the Latin Americans.

Even if supply is potentially being taken out through bulk sales, foreign buyers, and rental investors, I heard beginning indications that ordinary homebuyer demand is not being met

with existing inventory. Several of the biggest loan servicers told me that their mortgage lenders across the country are repeatedly reporting borrowers with preapproved credit who cannot find homes to buy. The lenders say the buyers are making bids on numerous properties before they're successful. So I'm beginning to think it's possible that when prices do turn around—and I'm not sure when that might happen—rather than a gradual recovery, we might see a sharper turnaround, sort of a cork-out-of-the-bottle effect, as frictions in supply and demand make price adjustments somewhat jerky in individual markets and as local markets recover at different rates.

Here's why I think that. First, prices seem to have really overshot the mark, if you look at measures of affordability, the cost of rental versus ownership, and the price of an existing home relative to the cost to construct a similar home. And the absolute prices seem really low now. Consider this: If prices in Las Vegas fall the 10 percent that they're projected to fall this year, the median home price will be under $100,000.

Second, the appraisal rules make it difficult for prices to move back up initially, but when they do move, the change in the assessment of market direction is then factored into the appraisal price and thus accelerates the move. When making an appraisal, appraisers compare the features of homes that have sold recently with those of the house being appraised. To account for the time that has passed since the comparable sales, the sales price is adjusted in the direction of the price trend, down in declining markets and up in improving markets. So, to make the appraisals move higher, some buyers are going to have to pay more than appraised value. They can't finance against more than the appraisal, so they'll have to put in additional cash. But once there are enough sales to justify a market characterization of increasing prices, then subsequent appraisals will support higher prices than recent sales.

Third, it's going to be difficult to coax out additional supply. Underwater homeowners may not be in a position to sell, and those who are not under water, but don't need to sell, may hold out for higher prices that meet their expectation of what their house is worth. And builders won't provide additional inventory until prices recover to a level that covers construction costs.

Finally, the psychology of the market will create upward pressure on prices. Once prices seem to be rising, and buyers have lost out on homes that they had already imagined as theirs, they stop looking for bargains and focus on the house they really want. And to illustrate this, in case you think I'm overestimating that, I'm going to offer a final data point. Friday, I had lunch with Governor Yellen, who expressed that she might be interested in buying rather than renting. Over the weekend, while I was studying my Tealbook, Governor Yellen found a house she was interested in buying. On Monday at lunch, she told me all about how beneficial it would be for her to buy rather than to rent. And as we sat down for this round, she told me that she was considering making a higher offer because someone had come in and bid higher on her house.

MR. KOCHERLAKOTA. She must be worried that interest rates are going up. [Laughter]

MS. DUKE. Now, this is someone with a very informed forecast of economics.

MR. FISHER. It's like the Case-Shiller index—we now have the "Yellen index." [Laughter]

MS. DUKE. I can't believe I'm talking about this, I can't believe I'm saying this, and it may embarrass me when these transcripts finally come out. But I really believe that rising home prices and inventory shortages are an upside risk somewhere in our future, at least until the prices hit the level of replacement cost and builders are enticed to increase supply. We aren't there yet, but we could get there sooner than we think.

CHAIRMAN BERNANKE. You know it was the FOMC blackout period, don't you? [Laughter] Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Like many of you, I'm going to address principally the labor market, both for its intrinsic importance and because of the window it provides on economic trends more generally. And again, as many of you have already discussed, there has been a mixed picture, although mixed on the upside, over the last couple of months. So just to rehearse quickly the mix, on the favorable side, we've had three consecutive months of pretty good net job creation numbers. First-time unemployment claims are down. We've had a 0.4 percentage point decline in the unemployment rate during that period. As Narayana noted, average hours worked seem to be normalizing to pre-crisis levels—and even somewhat higher, actually, in manufacturing. Temporary employment is up, though the experience of a couple of years ago at least raises the question as to whether this is still a harbinger of future permanent hiring.

On the less exciting side, the first point is the one that, I think, John made earlier—that there's still a long way to go before even pre-crisis job levels are reached. As several of you have noted, unless economic growth picks up quite a bit, it's hard to see how the recent job creation performance can be sustained. It is the case that both job openings and quits are up, but both are barely at their low point during the decade preceding the crisis, again suggesting that there's a ways to go. And while government employment losses have been declining recently, there's some reason to expect that the efforts of states to push costs of programs back onto local governments could lead to further layoffs later in 2012 at the municipal level.

So while there are grounds for believing that there is now internally generated momentum in labor markets that will stop the backsliding we've seen in each of the last couple

of years after two or three months of good numbers, the case is far from a clear one. And I think this probably indicates some broader questions about labor markets. Again, a number of you have referred to those. I would first note that this is not just an artifact of the recent crisis. There's been some question for at least a decade now as to whether the operation of U.S. labor markets has been changing in some ways. Dynamism seems to have declined well before the financial crisis. The two recent recessions—as, I think, Bill Wascher noted—were atypical in their own patterns—actually, unemployment did not rise quickly during those recessions, but it then came down even more slowly thereafter. The crisis and the ensuing recession that we've just experienced are, we hope, anomalous under any circumstances, but they're probably masking some longer-term trends as well. The Okun's law dilemma that the staff has referred to and addressed in the current Tealbook is obviously one of the big questions that is looming out there. The staff has now suggested that the recent developments are the obverse of the phenomenon that we saw in 2009, when unemployment increases outstripped even the substantial levels that Okun's law would have predicted given what was happening with GDP. If the staff is right, then the accounts are now being cleared as we see the opposite phenomenon, and job creation henceforth would return closer to the historical relationship that one would expect from Okun's law. It also means that potential output has probably been overstated somewhat, which in turn calls into question the size of the current output gap.

A second important ongoing question is, what will happen to the labor participation rate of the civilian workforce as the economy continues to recover? I'm afraid that the answer to this question is bad news one way or the other, though how it is bad news matters for our policies. The question is prompted in part by the fact that the participation rate has declined faster since the recession began than would have been predicted based on the secular downward trend and

demographic changes, particularly given the extension of UI programs. This development accounts for some of the improvement in the unemployment rate, although not so much the recent improvement. If participation returns to trend—that is, if workers are drawn back into the labor market as conditions improve—then the drop in the unemployment rate will be slowed. If, on the other hand, the participation rate does not return to the somewhat slower pre-recession downward trend, then the productive potential of the economy will have been harmed since more people will have dropped out of the labor force or never entered it, presumably because of some combination of discouragement, atrophied skills, increased difficulties of younger people getting a first job, and the availability of disability and early retirement programs.

As staff members themselves noted, their provisional solution to the Okun's law conundrum may not be correct if it turns out, for example, that the volatility of GDP data turns out to require less shoving of the known square facts into a round theoretical hole. And the participation rate question may be hard to answer for an even longer time. But I think it's increasingly likely that there has been some medium-term structural damage to the labor market and thus to growth potential—not as dramatic, perhaps, as the Tealbook's alternative scenario of a "Lost Decade," but with some of the same underlying dynamic. Now, it's important to note that mismatch does not look to be playing a major role in the kind of structural damage that's being experienced. And Bill Dudley's account of the research on construction workers underscores that point. If there is indeed a structural problem, it is one borne of a very slow cyclical recovery in which there was an inadequate amount of stimulus to get things moving more quickly and thus to stop some of the phenomena that I mentioned a few moments ago. If that's the case, then removing accommodation under these circumstances would only worsen the problem. And this is going to be the policy judgment for us: To what degree is the structural

problem being made worse by the continued slow pace of cyclical recovery, but at what point would the structural problem be baked in no matter what, and then we have to be looking at the other side of the dual mandate?

At this point, though, I think there's considerable data to support the conclusion that even if potential output is less than estimated in the Tealbook a few months ago, and maybe even less than currently estimated in the Tealbook, we're not close to bumping up against the somewhat lowered ceiling in the labor markets. First, as I mentioned in the January meeting, there continue to be very high numbers of workers who are employed part time for economic reasons, suggesting that there's still considerable slack there. College graduate unemployment is still substantially higher than pre-recession, and one assumes that that's the most flexible group of workers we have in the economy, who can adapt as jobs become available. The ratio of job openings to unemployment is lower for every major occupational category than at any time in the preceding decade, suggesting that the problem continues to be generalized insufficient demand rather than particular problems in particular sectors with mismatch or the like. The only exception is manufacturing, interestingly, which has a ratio of job openings to unemployment about where it was at the previous low point in 2003, but it's worth noting that that ratio is almost always the lowest of the major categories anyway.

Another point is, to elaborate on something else John said, that state-by-state unemployment figures reveal that, by and large—and this is a generalization; there are some exceptions—the largest declines in unemployment have been in two kinds of states. The first kind consists of less populous states with unemployment rates already considerably below the national average; these are Narayana's friends in South Dakota, and in Vermont and Kansas. One exception is Minnesota, which is hardly a less populous state. And the second kind consists

of more populous states where unemployment rates continue to be well above the national average; California, Florida, and Michigan are the leaders in that regard. Again, this pattern would suggest that there's considerable room to grow in these more populous states in a noninflationary fashion.

Finally, on wage pressures, it is absolutely the case that unit labor costs are up, although, as Narayana said, that is a noisy data series. I keep asking, pressing, torturing the staff to see if there are indications of wage pressures—labor market income pressures more generally—or if we can isolate them in particular occupational categories. And again, to date there's not really very much evidence of that, so that, again, suggests to me that the slack is still there, and that we still do have a ways to go.

But I think, to conclude, we may have to untether ourselves for a while from more comfortable theoretical models because there is something going on longer term in the labor market right now. It's probably, as I said, being masked or amplified by the recent unusual problems. It's going to be hard to separate those things, so we're probably going to have to feel our way forward for a while. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. I, too, was encouraged to see GDP growth move up above 3 percent in the fourth quarter, and the news from the labor market has also looked more positive. That said, over all of 2011, GDP rose just 1½ percent, a pace that would be mediocre anytime and is especially so during what is supposed to be a recovery. If the pace of activity doesn't pick up, the high level of the unemployment rate is likely to persist for quite a long time. To me, it seems that we're still dealing with an economy primarily characterized by a lack of aggregate demand, and the prognosis for faster growth seems poor. Wage income rose

last year, but with gas prices high and transfer payments flattening out, real disposable income was stagnant. Consumer confidence levels are inching up, but really, they've only returned to the level of a year ago. So households appear to have neither the income nor the confidence to provide a significant boost to aggregate demand anytime soon. At the same time, real business investment has slowed considerably and is not contributing much to a pickup in aggregate demand. And of course, the government sector isn't filling the shortfall. Instead, real government expenditures declined sharply last quarter and seem to be falling further. State and local governments continue to lay off workers. Only the net export sector really seems to be carrying its own weight, and that is, of course, highly dependent on developments in Europe, China, and Japan.

In addition, the uncertainties about how the economy is functioning in the wake of the financial crisis are profound, and I am humbled by our lack of understanding. The source of this humility comes from the fact that behind our macro data points are millions of microchannels rich with information, most of which we can't glimpse but many of which could have been significantly altered by the experience of the depth and breadth of the financial crisis. If we understood these microchannels, we would have, it seems to me, more confidence about the output gap and thereby the pace and strength of this recovery. For example, what does it mean that more daycare centers are operating 24–7 because both parents are now working second and third jobs and going to school at night and can't pick up their children until the middle of the night? What does it mean that a 14-year-old girl in Detroit recently renovated and now is a landlord for a house that she bought for $12,000 with money she saved by selling cribs and torn rugs on Craigslist? What does it mean that more college graduates are opting to buy land and cultivate it and farm it rather than face the prospect of receiving more rejection letters from

potential employers? With wages rising anemically for most people, what does it mean that young people must pay down their college debts and still have enough left over to contribute to the revival of the economy? I think of how much, indeed, our understanding is enhanced by the reports around this table, which provide a texture to our aggregate data but which the homo economicus part of our brains and backgrounds reminds us are mere anecdotes that we discreetly push away in favor of the aggregate macrodata. But still, the uncertainty lingers. Will the economy find its typical recovery path in the months ahead, or was the financial crisis so deep and so painful that there have been myriad adaptations in household and business behavior, suggesting that the economy has shifted in fundamental ways and found other, different ways to recover? I'll stop there, in the midst of what appears to be an existential crisis, and attempt a catharsis in the policy go-round. [Laughter]

CHAIRMAN BERNANKE. I think "personal" and "policy" are getting intertwined here somewhat. [Laughter]

Thank you, all, very much. It was a very concise and useful overview. Let me just make a few observations based on my copious notes. Most people around the table saw an improved outlook with some upside potential. Particularly cited, of course, were stronger labor markets and improved financial conditions, notably reflecting the recent actions in Europe. GDP growth still appears to be moderate, especially when viewed from the spending perspective, a view that is shared by Blue Chip forecasters. This raises a key conundrum or contradiction between the growth rate in output and the growth rate in employment, which many people cited as a key issue going forward. There were also some issues of measurement—weather and seasonality—which may be adding more noise to the assessment of the economy. There are considerable risks still in place to growth, including gasoline prices, Europe and the deleveraging of European banks,

continued stresses and tight credit in the U.S. banking system, weaknesses in housing—although some upside risks were noted there as well—and a hard landing in China or East Asia. On the inflation side, in the near term, inflation will be affected by gasoline prices. Many have at least moderately raised their inflation forecasts, but most believe that inflation is likely to return to the 2 percent target.

In the household sector, consumer spending has been relatively slow, especially outside of automobiles, but there are some positive signs that were cited, including, besides auto sales, the volume of credit card purchases, a variety of anecdotal reports, and today's retail sales data. Consumption is being supported by equity markets, particularly for higher-income consumers, better sentiment, some upward revision to income, and higher income arising from the labor market. At the same time, gas prices are a concern going forward. Sentiment is only at the level of a year ago, and many households remain very pessimistic about their own future financial situation.

In the residential sector, some saw tentative signs of improvement in housing. Inventories are down. Job growth and household formation are potential supports to sales. However, high indebtedness and tight credit standards may still restrain demand. It was noted that the correlation of house price declines and growth across states has disappeared, although perhaps not entirely, which might suggest that nationwide factors are becoming more dominant relative to local housing factors in determining economic conditions.

In the labor market, as I mentioned, improvements have been noted. Unemployment projections are down. A variety of labor market data have shown improvement, including unemployment claims, surveys, workweeks, and the like. A couple of points, though. First, despite the improvement, overall conditions remain comparatively weak. For example, the

employment-to-population ratio of 25- to 54-year-old workers remains quite low; jobs are still far below the pre-cycle peak, and part-time work is still high, and so on. There was also some discussion, which I won't try to summarize, about structural versus aggregate demand forces affecting unemployment and mobility issues. Research was cited on the ability of construction workers to move to other sectors, as contrasted with the anecdotal view that firms are concerned about the availability of sufficiently skilled workers. There was further discussion of that, including comparisons to earlier periods.

In the business arena, businesses are seeing some improvement in demand and have become somewhat more optimistic in recent months. Some have responded by undertaking growth-oriented investment as opposed to simply replacement investment. There is still caution, however, particularly on hiring and on the sustainability of recovery; small businesses are maybe somewhat less optimistic than companies more broadly. The situation in commercial real estate may be somewhat better, but it's still shrinking as part of bank portfolios and being worked out. There were a number of strong industries cited: shipping, which has broader implications for the state of economic activity; a number of manufacturing sectors, including autos, which are now approaching their trend sales levels; petrochemicals, which are benefiting from low natural gas prices; and equipment manufacturing. Commodities production, including agriculture, is also doing well.

Fiscal policy looks to be increasingly restrictive, although pressures at the state and local level have receded somewhat. There's a lot of uncertainty about where fiscal policy will be going forward. Exports remain a positive factor, although a number of people cited risks to various foreign economies.

In the financial sphere, again, many people noted the improvements in Europe tied very much to the long-term refinancing operation and the Greek debt swap. This has led to a global improvement in financial conditions—for example, greater demand for high-yield bonds and leveraged loans. A question that I thought summarized the situation very well, though, was whether we could view the ECB as kicking the can down the road or rolling a snowball down a hill. In other words, the fundamentals have certainly not been addressed, and at best, the LTROs can be viewed as providing a temporary respite. U.S. banks are still facing some stress. We earlier noted higher CDS levels and threatened downgrades. However, overall asset quality and applicant quality are improving. Loan demand is increasing, including C&I loans. However, small business lending is flat, and mortgage availability remains constrained. There was some discussion of European banks pulling back from lending outside of their home countries.

Finally, turning to inflation, as was noted, gasoline prices will increase inflation in the near term. Some have at least modestly increased their forecast for both headline and core inflation, although, again, most see inflation as returning to something close to 2 percent in the medium term. At least one person saw longer-term risks to our inflation objective. Some saw some indications of increased pricing power for some businesses. On the other hand, it was noted that high oil prices are offset to some degree by declines in other types of energy prices and that commodity prices haven't risen as quickly as oil prices. There was some discussion of the output gap. We all agree it's uncertain. To the extent that it's there, it may be a factor restraining inflation and offsetting some of these other factors. Trimmed mean indicators suggest that inflation is still at 2 percent or a bit below. And financial market measures of inflation expectations are well contained and are below their level of a year ago.

There were some interesting issues on policy. I'll note two of them. One had to do with the feasibility of commitment-based strategies—that is, strategies in which the FOMC tries to bind future versions of this Committee to certain actions. Another had to do with output gaps and an implicit question regarding the appropriate level of accommodation at the current time.

So those are just some observations on the go-round. Any corrections, questions? [No response] Seeing none, let me just make a few additional comments. Like everyone around the table, I've been pleased by the incoming news flow. I do put a lot of weight on the improvements in markets, which have reflected the actions by the ECB and the Greek debt swap. I note that the VIX has settled below 20. Volatility is much reduced, and confidence, I think, in markets has improved notably. We will be releasing stress tests this week, and it's not a secret that the overall strength of the U.S. banking system, in terms of its capital and resilience, is significantly improved from the dark days of the crisis, and the ability of our banking system to withstand a highly stressed environment is much improved.

The progress in the labor market, as others have noted, has also been encouraging, including not just payrolls and the unemployment rate, but a variety of other indicators, such as temporary hiring, jobless claims, and diffusion indexes, are all pointing toward a stronger and more sustainable improvement in the labor market. Public-sector job losses seem to be stopping, and they were a major negative over the last year. I found it useful in the past to look at alternative measures of labor input. I thought it worth doing that briefly today since they provide somewhat different pictures. On the one hand, we can compare the payroll data from the firm survey with comparable employment data from the household survey. The BLS provides a series for employment based on the household survey, which is corrected to approximate the same categories as in the payroll survey and which is corrected for the change in the population

controls. Between December and January, interestingly, as you probably are aware, household employment rose significantly more than payroll employment—2.7 million jobs by this metric over the last six months and 1.4 million, incredibly, over the last two months by this metric. That's compared with 1.2 million over the last six months in the establishment survey. So there is a stronger trend in the household survey. The staff tells me to ignore this—it's entirely noise—which it may be. On the other hand, it could be indicative of somewhat stronger underlying conditions. Or, I suppose, if you want to look at the half-empty side, it could suggest that the payroll growth is not sufficient to sustain the unemployment rate. The unemployment rate has progressed further than some other indicators have suggested.

Another measure of labor input that I find useful and that has been used a lot in the literature is aggregate hours worked—not weekly hours, but total hours worked, because that combines not just the number of jobs, but also workweeks and part-time work and the like. As I indicated in an earlier meeting, by this metric, this recession was far worse than the 1981–82 recession. From an unemployment metric, the peak unemployment rate in 1981–82 of 10.8 percent was higher than anything we saw in the more recent recession, but on an hours-worked basis, the worst peak-to-trough decline in 1981–82 was 5.8 percent. Here, in this episode, it was 9.4 percent—a remarkably larger decline in labor input. It took one year for the labor hours decline in 1981–82 to return back to the peak. We've been two years since the trough and we're still 4.1 percent below the peak, and that doesn't include, of course, any trend. So the hours metric, at least, does suggest the same point that you get from the unemployment rate, which is that there's been improvement, certainly, but we're still pretty far below what would be considered a normal situation in the labor market.

Almost everyone has commented on what we can call the Okun's law puzzle, the contradiction between the slow rate of GDP growth and the decline in unemployment. As has been pointed out, this has even been picked up by the press, with some pretty good research in a couple of cases. President Williams noted the factor model summary that showed that the news flow since the last meeting for the first half of 2012 was actually quite negative in terms of revisions when he looked at it from a spending and demand side, but it was very positive from an employment and production side. So there really is a very important puzzle and an interesting contradiction there. Of course, the problem is that if we don't see further economic growth, and if in fact it is the case that the staff's analysis is correct and we have essentially returned to the Okun's law line, it's possible that the recent burst of employment growth will slow going forward. And then in that case, we would see that very little unemployment improvement except for that related to the expiration of the extraordinary unemployment benefits. So it's not clear which way that's going to go.

I do note that we have so far not seen what I would call a breakthrough moment on the demand side. For example, looking at consumer spending, last time I talked about the weakness of the underlying determinants of consumer spending and noted that measured income and wealth have been quite flat. It's been noted that real disposable income has been revised up since our last meeting, but even so, real disposable income growth was at an annual rate of only about 1 percent in the second half of last year and at only about a 0.7 percent rate for 2011 as a whole. Wages have remained very moderate. I find the average hourly earnings and the ECI better indicators of wage trends than the compensation numbers because they include a variety of factors, such as profit sharing and bonuses and the like, and those suggest that wage growth is very slow. And indeed, the ECI shows that nominal wages and salaries, excluding benefits, grew

only 1.6 percent over the last year. That's lower than average hourly earnings, which is a variable-weight, rather than a fixed-weight, indicator. So that suggests that at least some of the gains we're seeing in average hourly earnings are in fact compositional effects and are not related to the underlying gains in wages. And wealth-to-income ratios are about where they were early in the recovery. So if you put this all together, notwithstanding some positive signs, including retail sales this morning, we just haven't yet seen really clear evidence that demand is going to pick up and be consistent with faster GDP growth, and therefore I think we still have a nonnegligible risk that this recent improvement will peter out. President Plosser, I think, asked when the tipping point was. My tipping point will be when we see more-definitive evidence that consumer spending and other components of final demand are strengthening above the trend level. I think that would be an important milestone.

I want to say a word about fiscal policy. I won't talk about the other components of final demand. I've noted in various testimonies recently the so-called fiscal cliff on January 1, 2013. That's going to lead either to a very sharp tightening in fiscal policy or, at a minimum, a period of considerable uncertainty as the lame-duck Congress wrestles with some kind of solution to the problem. Now, it may be a good thing because it may force longer-term fiscal consolidation, which would be, obviously, of benefit in the longer term, but I put that as a risk that we should be looking at.

So, bottom line—again, like everyone else, I see considerable improvement in labor markets. I'm encouraged. Sentiment seems better, but there are important uncertainties remaining, including, notably, differences in alternative measures of labor input, the breakdown of Okun's law, the basic question of whether aggregate demand will be sustained or even grow

more quickly going forward, and uncertainties about fiscal policy. So I think we need a clearer fix on these things before we have confidence that we have finally turned the proverbial corner.

Just a word on inflation. A lot has been said about this. As was noted, the increases in oil prices had not shown up in the official statistics yet. In the most recent three-month reading of PCE inflation, core was still higher than headline, which meant, obviously, that so far, the gas prices hadn't shown up. So instead, in order to assess the importance of commodity price increases, I've taken a look at some various commodity price indexes. Let me report briefly on the CRB spot price index, which is a daily index that includes 22 non-energy commodities—metals and agricultural commodities primarily. There's a very substantial contrast between what's happened recently in commodity prices and what happened at the beginning of 2011. In the beginning of 2011, this CRB non-energy index rose about 12 percent until the peak in April, and that came on top of a 24 percent increase in the second half of 2010. So there was a large and sustained increase in commodity prices, even outside of energy prices, last year. This time, that index has risen only about 3 percent since the beginning of the year, and it remains 14 percent below the peak of last April. I take this as an indication that in this case, the gas and oil price moves are a little bit more unique, in some sense. They're not part of a broad-based commodity price increase, and therefore I would tend to attribute a lot of that to risk premiums, supply concerns, and geopolitical risks rather than to expected economic growth or monetary policy. So I think that bodes well for inflation going forward, but obviously, we're going to have to continue to monitor those commodity price developments. Inflation expectations remain well anchored, and—as was discussed earlier—the term structure of inflation expectations does show some near-term increase, but beyond the near term, we appear to be very close to a 2 percent expectation as based on financial market indicators. Questions?

MR. EVANS. Mr. Chairman, after that very careful discussion about the labor market data, I'm reminded that I, in my own comments, put a lot of weight on the staff's estimate of the output gap. President Kocherlakota presented some very interesting and provocative observations on different measures of the unemployment rate. I wonder if the Board staff has any thoughts about those distinctions between the unemployment rate of those unemployed longer than six months and under six months, and what that might portend for your gap analysis.

MR. WASCHER. I think one way to think about it is whether short-term unemployment or longer-term unemployment have different effects on inflation. When we look at the evidence on that, we don't find much difference in the effects on inflation between longer-term unemployment and short-term unemployment. President Kocherlakota's story, if you focused on just under six months, would be consistent with an increase in structural unemployment and the NAIRU. In our own analysis, because we don't find much difference between the effects on inflation of those different groups, we tend to focus more on the published unemployment gap as our measure of slack than on, say, the short-term unemployment gap.

MR. KOCHERLAKOTA. I think it would be fair to say, though, that if you look at the historical evidence, it's hard to find periods where we've seen such sharp differences in the behavior of those two series.

MR. WASCHER. I agree with that. The long-term unemployment rate is really high right now, and Governor Tarullo's point, I think, is well taken—that we could be seeing some sort of labor market damage resulting from that. We don't see much evidence of that yet in the data, but I would not rule that out.

MR. EVANS. So in terms of movement in and out of short-term versus long-term unemployment, do you see unusual behavior there? Are they truly out of line?

MR. WASCHER. Well, I think they're out of line in the sense that long-term unemployment is still really high. Layoffs have come down a bunch, and they're at really low levels at this point, but we're not seeing the hiring yet that one would need to see to bring down unemployment across the duration.

MR. EVANS. I guess the question is whether or not entry and exit rates into those pools would necessarily differ. It could be that they would more quickly adjust in the short term.

MR. KILEY. We tracked the data on exit rates that you're referring to, and one might imagine, if people who were unemployed for a long time were having trouble exiting from unemployment and there were a structural problem, that the exit rate would be depressed. That exit rate is depressed, and it's depressed for all groups. That was true in the intense phase of the recession, and it's still true. We haven't seen a recovery for some groups and not for others.

CHAIRMAN BERNANKE. Okay. President Kocherlakota.

MR. KOCHERLAKOTA. I'll just say one word about that. I think those are very important observations to keep in mind, and it's useful to bring them forward. That said, one thing that's hard to get a handle on from the historical data alone is how responsive exit rates from long-term unemployment are to monetary policy, as opposed to exit rates from short-term unemployment, because right now I think it's a unique period in terms of how many people we have in the one group versus the other.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Mr. Chairman, you spoke about your tipping point for consumption and other components of spending as being growth rates rising notably above trend. So I wondered if you'd comment on the prospect of growth continuing at about trend and a gradual but eventual decline in the unemployment rate. I have in mind here this broader difference of views around

this table—those who view the trend line that lies pretty close to where we were in 2006 and 2007 and extrapolate out from this as the norm we're returning to, and those who think that we suffered a one-time downward level shock of some sort and that we ought to only expect growth at trend rates from here.

CHAIRMAN BERNANKE. That's a good point. Implicit in my statement, which was an ad hoc statement, was the notion that if in fact economic growth stays at 2 percent, we will not see much improvement in unemployment going forward other than that attributable to the end of extraordinary unemployment insurance benefits. If that turns out to be empirically wrong—that is, if we continue to have slow growth and declining unemployment—then obviously, there's something wrong with my model and we'll have to look at that.

All right. We have gotten now to item 3, "Current Monetary Policy." We're actually doing fine. Thank you very much, everyone, for efficient use of time. I just would like to note at this juncture, though, that we do have, effectively, two monetary policy go-rounds today. We have the first, which is focused narrowly on today's action and today's statement, and then we'll have a broader discussion of communications and these issues going forward. So let me ask you, in the interest of time and efficiency, if you can in the first round, to focus primarily on today's statement and today's decision. Let me turn it over to Bill for an introduction.

> MR. ENGLISH.[3] 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 and associated directives that were published in the Tealbook last week.
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> Turning first to alternative B, on page 4, the Committee may view the economic information received since the last meeting, particularly the data on conditions in the labor market, as suggesting a somewhat stronger outlook for economic growth, but view the improvement as still modest and tentative given the mixed readings on spending and the still-high rate of unemployment. At the same time, the Committee, like the staff, may see the recent rise in the prices of oil and gasoline as likely to have

[3] The materials used by Mr. English are appended to this transcript (appendix 3).

only a temporary effect on inflation. And while policymakers may be relieved that strains in global financial markets appear to have eased somewhat, they may continue to see significant downside risks to the economic outlook related to the fiscal and financial problems in Europe. Thus, Committee members may view the economy as progressing along a trajectory that is broadly similar to the one seen in January, with downside risks to that trajectory still predominating, and so they could choose a statement like that under alternative B. Alternative B updates the Committee's views about economic conditions to reflect the incoming data, but does not alter the "at least through late 2014" wording in the forward guidance or the language regarding the balance sheet.

Even if the Committee sees a more-than-modest improvement in the outlook, several considerations might lead it to keep the "late 2014" guidance. At the time of the January meeting, a number of members thought that the appropriate date of liftoff was well into 2015 or in 2016, and even with a somewhat brighter outlook for growth, these members may continue to see "at least through late 2014" as appropriate. And, with the "false dawns" of the past two springs, some policymakers may be skeptical of the extent of the improvement in the outlook and so prefer to wait for additional information on economic activity and inflation before making a change in the forward guidance. Because the Committee moved the forward guidance date out to "late 2014" only seven weeks ago, it may be reluctant to fine-tune that date so soon. Keeping the current language might seem particularly appropriate if the Committee wants to avoid frequent changes in the date out of concern that such changes would be confusing to the public and could undermine confidence in the Committee unless supported by a clearer link to changes in the Committee's economic outlook. Indeed, some members may prefer to wait to change the liftoff date in the forward guidance until the Committee can provide greater clarity regarding that link in the postmeeting statement, the SEP, or by other means.

The first paragraph of alternative B retains the language from the January statement indicating that the economy has been expanding "moderately," but upgrades the sentence about the labor market to say that conditions "have improved further" and that the unemployment rate has "declined notably in recent months" while still stating that it "remains elevated." The statement also upgrades the characterization of business fixed investment, reporting that it has "continued to advance." The statement again describes inflation as being "subdued in recent months," but acknowledges the recent increase in the prices of crude oil and gasoline.

The second paragraph is slightly more optimistic about the outlook for economic growth than in January. It states that the Committee expects "moderate" growth over coming quarters (versus "modest" growth in the January statement) and notes that strains in global financial markets have "eased somewhat" but "continue to pose significant downside risks to the economic outlook." The statement notes that the recent increase in oil and gasoline prices is likely to push up inflation temporarily, but that the Committee anticipates that subsequently inflation will run at or below the rate that it judges most consistent with its dual mandate.

Note that in all of the draft statements in the Tealbook, we changed the language from the word "levels" (plural) to point instead to a single rate of inflation consistent with the dual mandate, reflecting the adoption of the statement on longer-run goals and policy strategy at your last meeting.

A statement along the lines of alternative B appears consistent with market expectations and is likely to elicit little reaction in financial markets. Respondents to the Desk's latest survey of primary dealers indicated that they expect the Committee to update its characterization of economic conditions in its postmeeting statement, but that they see essentially no chance that the Committee will change its forward guidance on the federal funds rate or its balance sheet policies at this meeting.

Some policymakers nonetheless may see additional policy accommodation as warranted, as in alternative A, page 2. They may judge that, even with the more positive tone to recent economic data, unemployment is likely to decline too gradually toward the Committee's longer-run goal, at a time when inflation remains subdued and inflation expectations well anchored. Such an assessment would be supported by the unconstrained optimal control simulation in the Tealbook, which calls for additional policy accommodation in the near term. Moreover, policymakers may be concerned that the costs of inaction could be particularly high in the current environment because a very long period of elevated slack in labor markets could lead to significant erosion in unemployed workers' skills and their attachment to the labor force, resulting in a significantly slower rise in potential output going forward.

The first paragraph under alternative A suggests a somewhat weaker interpretation of the incoming data, and paragraph 2 notes that, absent further policy action, economic growth would slow over coming quarters. Paragraph 2 also omits the reference to an easing of strains in global financial markets found in alternative B, and points to the risk that the rise in energy prices could reduce consumers' purchasing power in addition to pushing up inflation temporarily.

Paragraphs 3 and 3′ provide two variants of an agency MBS purchase program: phrased either as $500 billion of purchases over the next year or as $40 billion of purchases per month, to be adjusted as needed. Paragraph 4 maintains the "at least through late 2014" language from January.

An announcement along the lines of alternative A would surprise markets. Although respondents to the Desk's survey put roughly even odds on the initiation of a new asset purchase program at some point this year, they see almost no chance the Committee will announce such a program today. Longer-term interest rates would decline, equity markets would rally, and the dollar would likely depreciate.

Alternative C, page 5, would be appropriate for policymakers who feel that recent economic developments—including the improved outlook for economic activity and higher near-term inflation—suggest a need to move to reduce the degree of policy accommodation. Some may see the better-than-expected incoming information on employment and production as increasing the odds of a significant acceleration in

economic growth that could lead to an undesirable pickup in inflation. And, given the lags with which monetary policy works, policymakers may see a need to move now in order to help avoid such an outcome. These concerns may be amplified by an assessment that higher oil and gas prices will push up near-term inflation and, against a backdrop of highly accommodative monetary policy, could undermine confidence in the FOMC's commitment to its inflation goal, leading to higher expected and actual inflation.

The first paragraph under alternative C is more positive about conditions in the labor and housing markets, and paragraph 2 notes the risk that the recent increase in energy prices could result in inflation remaining elevated "given the current degree of policy accommodation."

Paragraph 3 indicates that the Committee decided to reduce the size of the MEP to $250 billion and to complete the program by the end of March, three months earlier than previously planned. Alternative C also eliminates the date in the Committee's forward guidance and instead points to an expectation that the exceptionally low federal funds rate will be maintained only as long as warranted by projected inflation, longer-term inflation expectations, and the state of progress toward maximum employment.

The adoption of alternative C would greatly surprise investors and could lead to substantial declines in stock prices and sharply higher interest rates.

The draft directives for the three alternatives are presented on pages 7 through 9 of your handout.

Thank you Mr. Chairman. That completes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. Are there questions for Bill? President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. My staff philologist charted the difference between "moderate" and "modest" over the last several meetings. We had three meetings of "moderate," then we went to "modest," and now we're back to "moderate." What's the difference in your mind?

MR. ENGLISH. I think we made the adjustment because the staff had marked up the outlook for GDP growth—not a lot, but enough that it felt as though it was pretty close to growth

of potential—and so it seemed moderate, not a little subpar, which is what we were meaning by "modest."

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Bill, I noted one other thing that I don't think you highlighted. Maybe I didn't hear it, but the last paragraphs of A and B talk about promoting "a stronger economic recovery in a context of price stability." A change in the last paragraph of C is its "objectives of maximum employment and price stability." Why the difference?

MR. ENGLISH. We thought in C, if your point was to begin removing policy accommodation, then you'd want that last sentence to be a little bit more balanced between your objectives of maximum employment and price stability. The language at the end of paragraph 4 last time and in alternative B this time suggests that the adjustment would be to promote a stronger economic recovery. So it would suggest that there maybe was a little concern about the pace of the economic recovery as opposed to inflation.

MR. FISHER. But we've been using that language for a while.

MR. ENGLISH. Yes.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. I had exactly the same question as President Fisher.

MR. FISHER. That's good. Great minds.

CHAIRMAN BERNANKE. Other questions? [No response] If not, why don't we begin our go-round with President Williams?

MR. WILLIAMS. Thank you, Mr. Chairman. I support alternative B. I would, however, like to offer a suggestion for a small modification to the language in the statement

regarding the expected timing of liftoff, and I'll return to that momentarily. We talked a lot here about simple policy rules, and the Tealbook talked about simple rules in coming up with its own interest rate forecast. And prescriptions from simple rules can be a useful guide to formulating monetary policy. I particularly like the outcome-based and the Taylor 1999 rules as good examples of simple rules. But I do think it's important in the current situation that such simple rules, taken on their own, ignore two important issues: the LSAPs and the zero lower bound. LSAPs provide significant monetary stimulus, which can substitute for some conventional monetary accommodation. So the LSAP program may suggest a higher funds rate path than a simple funds rate rule would recommend otherwise. I say "may" here because I agree with the fine memo by Ed Nelson and John Roberts that an LSAP adjustment is not as straightforward as, and is likely smaller than, the simple correction usually made. Indeed, I would like to see further work along these lines, and it may provide greater clarity in how to best adjust a simple rule for the effects of LSAPs. Second, and I think much more important, these simple policy rules ignore the zero lower bound. Research by Gauti Eggertsson and Mike Woodford, Dave Reifschneider and myself, and many others have looked at monetary policy rules and how they should be modified in the context of the zero lower bound. And the results show consistently that it's optimal to deviate from the usual simple policy rule and keep the funds rate lower than otherwise for a longer period of time. Such deviations capture some of the gains of the optimal commitment policy or the nominal GDP targeting policy described in the other memo.

This is largely why, relative to the simple rules in the Tealbook, I'm comfortable with a late 2014 liftoff in our current policy guidance. That said, the hurdle for making changes to the liftoff date from meeting to meeting should not be high. So I'm taking a different position than Bill outlined in his presentation. We have conveyed to the public that the projected policy liftoff

date will change when conditions change. In keeping with that principle, I would prefer small adjustments that appropriately signal changes in the outlook. For example, from the conversation that we had today, and in the Tealbook, there's slightly less slack in our projections than before, and many, I think, have slightly higher inflation projections than they had before. So I suggest that the statement should note our intention to maintain a low funds rate at least "until" late 2014 rather than "through" 2014. Now, this is a very modest change, but one of the ideas here is that we should not have a high hurdle, in general, and I don't think it would be useful to get into a situation where we modify the language only on very big steps. Thank you.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. As I indicated in our earlier go-round, a lot of us have said, and you summarized very well, that the outlook for real growth has improved a notch since our last meeting. My reading of the real data, similar to the staff, is that our forward momentum has picked up a notch, and we face less by way of downside risks than before. Core inflation seems quite close to 2 percent now, and that's my expectation going forward—that it's going to hover around 2 percent in the near term. I, like the Tealbook, brought forward my estimate of the time period at which it's most likely that our first rate increase will occur. As I said at the last meeting, it was in the latter half of 2013. Now I think middle of 2013 would characterize where I am on that dimension.

In thinking about the statement, I want to buttress the recommendation of President Williams. I think it's useful to compare forward guidance language, and how we think about setting that at every meeting, with interest rate setting. In particular, it's useful to really think about this well-documented characteristic that our policy-setting displayed away from the zero bound, which is interest rate smoothing. This is the idea that our interest rate changes tend to be

in a sequence in the same direction, they tend to be persistent, and they're seldom reversed. So we strive to avoid raising rates and then at the next meeting cutting them, or cutting rates and then at the next meeting raising them. Now, this has an obvious advantage to us in that if we behave that way over time, then any given interest rate change conveys much more information relevant to the yield curve. The yield curve moves more, because a given interest rate change conveys much more information about future settings of the short-term rate. In contrast, you could picture us at every meeting ignoring the current setting for the funds rate and, with a blank sheet of paper, deciding on our optimal rate—deciding anew, as if we had no history before us of what we've said. And we'd likely get fed funds rate changes that were more frequent and variable, but they would carry much less information about future funds rate changes. So this property of interest rates is something we've done for a long time—it's been well documented. Now, the point I want to make is that this represents a form of commitment in the sense that we set interest rates taking into account what we did before. If we've cut interest rates, we're not going to reverse them at the next meeting. We're going to wait a few meetings to see a trend and then reverse them if we're going to do that.

Now, I started thinking about this because I was considering my decision at this meeting. And I was thinking, all right, in the usual interest rate setting, if you dissent against a cut in the funds rate, the next meeting you might not want to dissent in favor of raising rates again to undo the cut that the Committee voted at the previous meeting. And a good rationale for that would be to maintain the commitment of the Committee to smoothing interest rates so that in the future, when we do cut interest rates, they have the effect that's consistent with this. So that suggests something about this meeting, but first, let's think about forward guidance. We've been really clear that it's not a commitment. I think the Chairman has been really clear that it's not a

commitment. Now, I heard something slightly different from the Vice Chairman, and I'm interested in understanding whether your views are compatible with what the Chairman has said about this not representing a commitment, but instead representing a forecast. But if we go smoothing forward guidance, if we go holding up changes in forward guidance, not bringing forward the date because we just increased it at the last meeting, over time there's going to be, meeting to meeting, a little gap opening up between what we really think and what's in the statement, and that's going to make it look like a commitment. It's going to potentially confuse the public. It's going to give an inertia to the forward guidance language that makes it more commitment-like and less like truly our forecast at that meeting. I don't think this is a curiosity. I think that this is relevant to policy-setting. If we keep it frozen at one date, compared with the extent to which forecasts fluctuate on a six- or eight-week basis, it's going to look like a promise that we change only every now and then, and that'll be a mistake. I say this, and as you know, I argued against actually including this forward guidance at the last meeting, and this is one of the pitfalls that I think we're going to have to wrestle with, having gone down this path. And putting it in the SEP, of course, would have made it a forward guidance communication we change only every two meetings rather than one meeting—and so, to some extent, would obviate some of this issue.

As for how I vote at this meeting, I don't see a value for smoothing forward guidance. So to my mind, the logical way for me to vote is whether I think economic conditions are going to warrant exceptionally low interest rates through the date in the statement, and I don't agree with that. So I'm going to dissent on that. I have a couple of editing suggestions for the statement. I'll just read them.

MR. FISHER. No one is going to listen. [Laughter]

MR. LACKER. The first editing suggestion would be "mid-2013," but barring that, the other three suggestions I have—

VICE CHAIRMAN DUDLEY. "Mid-2013"?

MR. LACKER. "Mid-2013"—that would be the first suggestion.

VICE CHAIRMAN DUDLEY. Good luck. [Laughter]

MR. LACKER. So that's my dissent. I don't know your views on these suggestions, but I might have some more success.

At the last meeting, we officially adopted an inflation objective of 2 percent, and yet in our statement, we use this complicated circumlocution—what is it?—"the rate that it judges most consistent with its dual mandate." It's like 10 words. We could just say "2 percent," right? We're talking about, " . . . the Committee anticipates that subsequently inflation will run at or below . . . " This is the last sentence in paragraph 2. Why don't we just say "2 percent"? Or we could phase out this language by putting, after the word "below," "2 percent," a comma, and then the circumlocution—and then at the next meeting, delete the circumlocution. And then there's a similar issue in the first sentence in paragraph 3. The statement says "help ensure that inflation, over time, is at the rate most consistent with its dual mandate." We could just say "is at 2 percent." That would be clear. This way, people wouldn't have to go on the Internet to find out what rate we're talking about there.

So that's one set of changes. A second editing suggestion I'd like to make is that we drop the word "dual." This occurs three places in this statement. It occurs nowhere in our statement of our longer-run goals and monetary policy strategy. There, we're careful to mention all three of our statutory mandates. "Statutory mandate" would be a clearer phrase, a more accurate phrase, one more consistent with the text of the Federal Reserve Act. So I'd suggest that maybe

even if we don't reduce them all, maybe we could phase them out one at a time, one a meeting. And then the word "significant" in front of "downside risks," I think, got a little bit of discussion last time, and we seem on the edge of whether we have it in or out. It might be useful to take the temperature of the Committee on whether those downside risks are still significant in global financial markets. That's in the third sentence in paragraph 2. Thank you very much, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you.

MR. TARULLO. Mr. Chairman, can I ask a question?

CHAIRMAN BERNANKE. Yes.

MR. TARULLO. Jeff, I don't quite understand your rationale on the forward guidance, for the following reason. I understand completely why you're reluctant to engage in forward guidance and your concern that on the spectrum between expectation and projection versus promise, people will read it too far toward the promise side. But if you stipulate that we've done what we've done, as I was listening to your rationale for not dissenting from last time's interest rate moves, for example—because you wanted the impact of action to be greater when it was taken by the Committee, you didn't want so much fluctuation, you wanted more communication—I don't quite understand why the same rationale doesn't apply here, that is, why you would distinguish on these grounds between a classic federal funds rate move and putting in guidance with a particular date. It seems to me that the nature of the "commitment" is pretty close.

MR. LACKER. Well, I view the forward guidance as a forecast. I don't think it's advisable for us to be making a commitment, and I view our collective understanding of what we agreed to as, it's a forecast and not at all a commitment. Whether we can communicate that fully

or not is another question. So I take that as a premise. In the interest rate case, a cut in an interest rate is an implied promise to not reverse rapidly the interest rate cut. And do I want the Committee to be a Committee that fulfills its promises? Yes, and so I might vote for that, and that might outweigh my desire to express a preference for a change in interest rates at the next meeting. It's because an interest rate cut at a given meeting, unlike the forward guidance in January, represents something of a commitment. So it's bolstering the Committee's ability to make commitments.

MR. TARULLO. I'm sorry. I won't belabor this, but that's what I don't quite understand. I guess you're imputing a commitment to the cut in interest rate that is not incorporated into the text of the FOMC statement in any way, shape, or form, right?

MR. LACKER. Right. We've just done it. Markets expect it, I think it's fair to say. It's built into market expectations.

MR. TARULLO. Presumably, if things change dramatically from one meeting to another, people—

MR. LACKER. Oh, sure. There's exceptions—right. There would be a higher hurdle, but if you just look at the record, we rarely reverse course.

MR. TARULLO. Isn't that for the instrumental reason of maximizing the communications effect of changes when they are made by the Committee?

MR. LACKER. Yes.

MR. TARULLO. Okay.

MR. LACKER. To some extent.

MR. TARULLO. Thank you.

CHAIRMAN BERNANKE. Okay. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. I support alternative B. While there has been some improvement in recent data, the growth rate of the economy remains disappointing. At 8.3 percent unemployment, we remain well above the 7 percent unemployment that I view as consistent with starting to remove accommodation. Total and core PCE price indexes are projected to remain below 2 percent in 2013 in the Tealbook, a forecast quite consistent with my own. I currently anticipate some improvement in labor markets and some pickup in spending over the year. Should that not occur, further accommodation would be appropriate. If employment growth and spending falter, with unemployment high and inflation low, I would see no reason to sterilize additional purchases of securities. For now, we should watch the data closely to determine whether our forecast of improvement in the economic situation materializes.

I would not make any change to the language. We should try to shift the language from a calendar date to economic outcomes, which we will discuss in the next go-round. I would note that in January, we concluded that we were going to be discussing that. I think we're revisiting it later in the next go-round, and I would defer any change in the language until we've had a full discussion of that.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Although inflation moderated somewhat in the second half of last year, year-over-year PCE and CPI inflation rates remain at or above our targets. Like President Kocherlakota, I'm concerned that inflation is likely to increase at or above the 2 percent pace this year and over the rest of the forecast horizon unless we take some action at some point. As I mentioned in the last go-round, recent declines in the unemployment rate and strengthening employment indicate that my forecasted 7.8 percent unemployment rate at

the end of the year might, in fact, be too pessimistic. Taking both of those factors into consideration leads me to believe that it will be appropriate to start policy tightening well before late 2014.

In my view, the forward guidance language we adopted at our last meeting appears increasingly misguided. However, the discussion on policy communications we'll have later in the meeting provides us with an opportunity to introduce more state-contingent language in the policy statement, and I'll elaborate more on that in that meeting. But for the moment, let me indicate that I'd strongly prefer moving away from calendar dates in our communication and toward ways that clarify the conditional nature of our policy decisions. My views on this are informed by the literature on simple and robust rules, as President Williams has stressed. He's done a great deal of work on that—so has Andy Levin and others—and they've been influential in my thinking. I would also mention the work of Stephanie Schmitt-Grohé and Martin Uribe, working within the confines of macromodels such as those developed by President Evans and his coauthors. In particular, I've been studying this literature on simple, robust rules because I believe there exists substantial model uncertainty both about the parameters of a particular model and about which of the many existing macro models provide good approximations to the economy. There also exists substantial uncertainty in measuring many of the variables that we react to—in particular, as has been discussed today, various measures of slack or resource utilization. Some key points that I take away from this literature are that simple, robust rules generally work well in a host of models, and that adhering to these types of rules rather than the rules generated from a particular model's optimized behavior does not generally generate significant welfare losses. The rules that generally work well respond fairly aggressively to deviations of inflation from target and less aggressively to measures of real activity. They're

also fairly inertial, as we've been pointing out. Further, the measurement problems associated with gap-type variables point to an attenuation in the desired response to gaps and, in some cases, to avoiding the use of gaps altogether. Indeed, it appears that actual FOMC behavior has been broadly consistent with the prescriptions of many of these robust rules. Yet our communications do not articulate this systematic behavior. To aid the public in better understanding the systematic framework that guides policy, I'm in favor of providing more information, although probably in a fairly general way, about the variables that are our primary determinants of policy, and I'll elaborate on this later.

An important emphasis in this literature concerns robustness. Another important lesson that's learned from these robust rules is that rules optimized for a particular model may produce highly undesirable outcomes in another model. Given the tremendous uncertainty we face, we should strive to operate in a manner that works well across many theoretical depictions of reality. The Board staff's memo on simple rules seems to have overlooked this important message. For example, if you look at figure 5 in that memo, you can see that the simple rules produce interest rate paths and paths for unemployment and inflation that are fairly similar across FRB/US and SIGMA. Although not exactly optimal, to my eye, they are very reasonable. However, when one looks at the interest rate paths that are optimal for these two models or the models under commitment, they seem to be very different. Thus, what an optimizing policymaker does in a world that resembles FRB/US is notably different from a policymaker who believes he's in a world of SIGMA. I would conjecture that optimized rules for one model do not perform very well in the other model. This is one of the reasons I'm skeptical of relying too heavily on the so-called optimal policy rules that we get from the FRB/US model when we see the Tealbook each meeting. Consequently, the exercise presented in the memo that indicates the improvements

from following optimal policies or commitment policies does not persuade me that there are huge costs to relying on simple rules. Instead, I remain disposed toward using simple, robust rules for guiding policies.

As President Williams pointed out, I think it's important that we talk about conducting policy in a systematic way with these rules, but as he noted, when we get to the zero lower bound, things change. And that's important for us to understand. But it's going to be much easier from my perspective to communicate how and why we're changing at the zero lower bound when we've been able to articulate how we're going to act in normal times. And so as a communication device, this becomes very important—for us to talk about behaving with simple rules in one framework, and then when we feel as though it's important to deviate, we have a way of talking about that deviation when you move away from it. And I'll talk more about communications later on.

Of the policy alternatives, the language in alternative C is most consistent with my views of the economy—that is, paragraph 1. I argued last time that with the enhancement of the SEP, we should take the opportunity to remove the calendar date from forward guidance, because I'm uncomfortable with forward guidance. I think that actually specifying our systematic policy rules is a better form of forward guidance than trying to use these commitment strategies. I continue to believe that the language is undesirable, and it's led to more confusion than clarity. While, unfortunately, I don't believe most of the members of the Committee are prepared to eliminate these calendar dates, even though the staff forecast suggests we need to change them yet again, this is one of the problems, I think, with the calendar date language. One could consider shifting the date, but I believe moving the date around from one meeting to the next would tend to undermine the credibility of the Committee and our intended policy. I believe we

should drop this altogether, and would strongly prefer that we move to more state-contingent guidance that describes our policy rules to the public. With that in mind, I prefer the general direction of alternative C—the general direction—but I also believe that C offers a better and more accurate description of the economy.

With respect to alternative B, I suspect that that's going to be preferred, so let me make a couple of suggestions. They actually align with President Lacker's comments previously. I would prefer to substitute paragraph 1 from C, although I would describe housing as having "stabilized" rather than "improved somewhat." I found Governor Duke's comments about housing quite encouraging. In paragraph 2, I would do similar to what President Lacker suggested. I would remove the first sentence of paragraph 2. I think it adds nothing. Our consensus statement made clear that we were committed to our statutory mandate, not a dual mandate. That's just redundant at this point. I would also, on the next sentence that has to do with employment—"the unemployment rate will decline gradually toward levels that the Committee judges to be consistent with its mandate"—leave "dual" out. I agree with President Lacker—things have improved in Europe, so I would tend to omit the word "significant." And finally, I also agree with President Lacker that the last sentence seems contorted. We should just say, "The Committee anticipates that inflation will converge toward its 2 percent objective." Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I support alternative B. The current stance of policy, including the forward guidance that refers to late 2014, remains generally appropriate. Put differently, I don't think enough has changed to justify altering policy at this

meeting. I also support the language of the statement as presented. I think it remains serviceable for this meeting.

Others have not resisted the temptation to talk generally about communications, so I won't, either. [Laughter] As I said in the economy round, absent severe tail risks, I see the risks to the outlooks for economic growth and inflation as being weighted slightly to the upside. So my sense at this juncture is that the risks, so to speak, around the path to policy are tilted to an earlier rather than later tightening. And in the minds of the public and market participants, the path of policy is most associated now with the date that the Committee is providing for liftoff in the statement. Anticipating the upcoming discussion on policy communication, I, like others, am concerned that the date device will become increasingly problematic were the Committee to adopt the practice of moving it back and forth or to and fro with the evolution of the economic outlook. Both the Tealbook and my updated forecast for this meeting have the start date of tightening considerably earlier in 2014. So if I were to be consistent with my forecast, I would lean to support an earlier date just one meeting after adopting "late 2014." By focusing the public on a date, I'm concerned we are conveying much more certainty in forecast precision than is warranted. So I very much, like others, look forward to the upcoming discussion of communications options. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Just for the record, as I stated in January, I continue to support further accommodation beyond that described in alternative B or even alternative A. I see the current situation as so far from our dual mandate responsibilities that my opinions will not be altered with just a few months or quarters of better data. Indeed, just to get the modest pickup in GDP growth projected in the Tealbook and the latest SEP forecasts, we're

going to have to see much better data. As I noted earlier, these forecasts leave us falling far short on our mandate.

Now, earlier last week, Charlie Plosser, Esther George, and I were preparing for the Senior Leadership Conference that we have in Chicago a couple of times a year, and on the topic we were talking about, it got me thinking. As the central bank for the United States, the Federal Reserve has two enormous assets: One, we print money, one way or another, to achieve our dual mandate objectives; and, two, we're an independent central bank. Sometimes when I listen to arguments around this table related to the Fed's independence, I don't always get the point that the speaker seems to have in mind. Here's how I think about it. Paul Volcker in 1979 used the Fed's independence to make tough decisions for the U.S. economy that were clearly unpopular—allow the federal funds rate to rise to 18 percent for a time, restrict credit, and break the back of runaway inflation while letting unemployment rise above 10 percent. On the merits of the analysis for the U.S. economy, I believe these were the correct actions in 1979 and 1982. They were exceedingly brave actions. For me, independence of monetary policy allows the Fed to do the right thing and take meritorious actions even when they are deeply unpopular. And here's the thing: These unpopular actions can go in either direction—for less accommodation or for more accommodation. Fed independence is not just a synonym for higher interest rates.

On the merits of today's arguments, I can't ignore the assessment that the output gap is 5 percent after 33 months of modest recovery from a very deep recession. And I'm pretty confident that the staff's assessment of this gap is going to continue to be in this range after they look at some of the labor data along the lines of what President Kocherlakota suggested, but I certainly look forward to that. Combining this thorough assessment of resource slack with the outlook that inflation will remain below 2 percent over our forecast horizon, the argument for

continued and stronger accommodation is, for me, overwhelming. Whenever it's within our ability to improve a very poor outlook and those actions are within our dual mandate responsibilities, the case is clear.

Now, every credible macroeconomic analysis I've seen comes to the same conclusion, and Williams, Reifschneider, et al. are consistent with this. It's highly consistent across lots of different people. Let me be clear. Suppose you go out and review the policy conclusions based on models that have, one, general-equilibrium underpinnings and, two, do a reasonable job in their empirical characterization of the macroeconomy. After all, if they don't have a good empirical grounding, I don't know what world they're telling us about. These analyses routinely state that further monetary accommodation can improve our economy and reduce our dual mandate misses. The Board staff memos and Tealbook B policy analyses are examples that are very clear on this. I thought those were very good memos. I can't ignore these lessons. If others disagree, I'd like to see evidence based on empirically credible general-equilibrium models with those alternative policies embedded. I'd like to see it—haven't seen it myself.

So I continue to favor substantially more accommodation than recommended in alternative B, and without any consensus on stronger forward guidance—let's just wait for the afternoon discussion—that would commit us to more accommodation, I favor additional asset purchases larger than suggested in alternative A. After all, President Kocherlakota and others have a very good point that commitment is very hard to do for a central banker who cares about poor inflation outcomes. We have an incentive once we promise to get things going to take it back and fool people. How do we overcome that? If we can't commit to it with a low interest rate beyond a period where we'd want to undo that, maybe we should do larger-scale asset purchases that would make it very difficult to unwind very quickly. After all, that's the comment

that I've heard around here. I will leave it at that. I have more comments on "late 2014," but we'll talk about that this afternoon. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I would just respond to President Evans and say I don't see any models that tell me that running higher inflation is going to help us. I don't see any simulations that say, let's go to 4 percent inflation and that's the optimal policy. Have I got the wrong model? I don't see any. There are none. Here, I'm looking at them right here. They've all got below 2 percent.

MR. EVANS. No, they've got 2½ percent.

MR. BULLARD. You say there are no models. There are a lot of models here.

MR. EVANS. They have them in Erceg et al.

MR. BULLARD. Why isn't there a simulation that says, okay, 3 percent inflation or better? I don't see one. These are empirical models.

Okay. I counsel patience at this meeting. I think we should adopt a wait-and-see stance. I do think the "late 2014" language causes problems for this Committee because of the unwillingness to change the date with changes in the forecast. This tends to create inconsistency between market expectations and the statement over time. This is unhealthy for the Committee's credibility. I suggest removing the "late 2014" date and replacing it with the last sentence of paragraph 3 in alternative C. So we just take alternative B, but we move in the language from alternative C or similar language. This would remove the need to be moving the date around at each meeting, but otherwise would not change the policy content. I think this would improve the credibility of the Committee. I also agree with President Lacker's suggestions for the statement, which I think better reflect the Committee intent and the current situation. So, as a reminder, he

said, just say “2 percent” instead of a bunch of words. Get rid of the “dual” and just say “mandate.” And I’d be open to what people think about “significant.” The tensions in Europe have been reduced, but I’d be interested to hear what others have to say about whether we should take “significant” out or not. I think if we leave it in there, you’re saying that nothing has improved. That’s always a delicate thing for the Committee here to accurately reflect changes in the situation without saying the tail risks have gone away completely. I’d be open to how others want to do that, but I would lean toward taking “significant” out as a way to signal that the Committee understands that the situation in Europe has changed somewhat. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. As an independent-thinking independent central banker, my preference would be for alternative C, but I don’t think we should make significant changes at this juncture. I’m in favor of alternative B. I have heard several things at this table that have affected my thinking. The first was your comment—which I agree with, by the way—on the broader commodity indexes; the second is what I would call the Lutheran advantage of Minnesota; and the third is the Yellen real estate paradox. Taking all of those into account, the only things I would recommend changing are a couple. The statement “the housing sector remains depressed” is a little bit harsh. If I were to change the language there, I would just say, “Indicators of conditions in the housing sector have improved, but amid uncertainty as to when housing prices will stabilize.” Listening to Governor Duke, setting aside Governor Yellen’s personal decision, I think saying that “the housing sector remains depressed” is a little bit too strong and contrary to the data that we’re seeing and have heard around the table.

As to the point of “significant downside risks,” we’re saying that global financial markets have “eased somewhat.” “Continue to pose downside risks to the economic outlook,” I think, is appropriate. “Significant” erases the “having eased somewhat”; I would eliminate it. As to President Lacker’s comments, I think we should, at the very end of that sentence—I wouldn’t change the beginning of the sentence because we do have a statutory mandate, we do foster both—since we did make a formal statement as to our long-term strategy, why not update it and say that “subsequently inflation will run at or below the long-term target of 2 percent” or “our stated long-term target of 2 percent”? With regard to the “at least through late 2014,” I was against it in the beginning. We’ll talk about that in the next session. As to President Williams’s suggestion, I don’t think “until” does it. If I were to argue that point now, the difficult part I have is with “at least.” So I wouldn’t fiddle with that at this moment. Let’s defer that to the second discussion. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I support alternative B. In broad terms, my outlook is largely unchanged from our last meeting, so I don’t think a change to the current policy stance is warranted. While some combination of further improvement in the pace of recovery and a pickup in underlying inflation could warrant pulling forward the expected date of policy firming, I don’t think now is the time to make that adjustment. I don’t think the changes in the outlook since our last meeting have been material, and before we adjust the forward guidance, I would prefer to wait for more information on the pace of the recovery and inflation trends. I would also prefer to avoid making a practice of moving that date guidance at each meeting, because to do so would imply more certainty about the outlook than we really have. Today, with considerable risks still surrounding the recovery, it’s hard to rule out the possibility

of a significant slowing in the pace of the recovery. My final reason for holding off on adjusting the forward guidance is that it would be difficult to explain the change without a new SEP. While I don't see having a fresh SEP as a necessary condition for changing the forward guidance, I think the bar to making an adjustment without a new SEP should be fairly high. In my view, the outlook hasn't changed enough since our last meeting to meet that bar. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. I support alternative B. While growth in the first half of this year is likely to be slower than I previously thought, I have revised up my growth forecast over the next few years. The continued decline in initial claims and the last two employment reports have been particularly encouraging. Inflation, both headline and core, has picked up, and the stronger growth outlook is likely to keep inflation firm. Moreover, I note that both the Tealbook baseline and the constrained optimal policy simulation now have the first tightening of policy two quarters earlier than they did in January. In addition, recent research by my own staff and other empirical evidence suggest the output gap may be smaller than the Tealbook estimate of 5 percent.

Taken together, this information leads me to believe that we should begin removing some accommodation sooner rather than later. In particular, I think it warrants consideration of moving forward the "late 2014" language in the statement. Clearly, with a high unemployment rate and only modest improvement thus far in the housing sector, policy will need to remain accommodative for some time. However, the degree of that accommodation should recognize a persistent recovery, improved economic conditions, inflation near our target, and a return to more-stable financial markets relative to the crisis. In that regard, beginning to remove

accommodation also would help reduce the risk of unintended consequences that our policies over the long term might encourage distortions or mispriced risk. By bringing forward the date specification in the statement, we can also signal to the market that monetary policy really is conditional, while continuing to provide important information about the likely path for policy in conjunction with our SEP. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. Alternative A in the Tealbook recommends that the Committee expand its balance sheet by another $500 billion of agency MBS. I'll try to be brief and describe my thinking about how I try to evaluate that recommendation systematically. One of the things I'm going to conclude is, in order to evaluate options like A relative to options like B, it would be helpful to have two additional pieces of information from the staff. So by way of backdrop, like other members of the Committee, and as President Plosser has articulated, I'm drawn to the use of simple rules as a way to think about the making of policy. I'm glad to see the Tealbook B placing increased emphasis on rules. I find simple rules attractive for a number of reasons. There's evidence they've led to good dual mandate performance in the past. I think they're a good benchmark to have when we're trying to enhance transparency and accountability, because they really provide a good starting point for when we talk to the public about what we are doing. Perhaps most important, and as President Plosser has already mentioned, I like the fact that these rules have the characteristics that would lead to good performance across a wide cross section of models and a wide set of eventualities. In this way, they provide us with a way to evaluate policy that is less dependent on the correctness of any particular framework.

The simple rules that we have, like the Taylor rule, typically make recommendations for the short-term interest rate, not the balance sheet, and so this raises the question of, how can we use a rule like Taylor (1999) or an outcome-based rule to think about whether alternative A is a good idea or not? To do that, we need a way to translate the economic impact of the balance sheet moves into the economic impact associated with short-term interest rate moves. So I'm going to go retread some ground that is familiar to everybody. This translation proceeds in two steps. First, there is a reduction in the term premium being associated with our holdings of longer-term securities. And based on empirical work done in New York and at the Board, the staff has developed the mapping, the time path of the composition of our asset holdings, and the implied path of reductions for the term premium. And if I want to evaluate A, it would be useful to see the staff's estimate of that path of term premium reductions. This is what President Williams was asking Brian Sack about earlier. I think having that on a systematic basis would be useful. What are we getting right now? What would we get if we moved to A—or even beyond A, as President Evans has mentioned?

The second step is to translate these paths of term premium reductions into a path of short-term interest rate reductions that is judged to have an equivalent economic effect. Now, here the staff is currently using a rather simple method of just multiplying that term premium reduction by 4 to get to the short-term interest rate reduction. That's motivated by, I would say, largely empirical considerations. In Minneapolis, we worked a lot with Nelson and Roberts's elegant and interesting memo. And using their model, we found a different, more theoretically grounded, but still-simple way to do that translation. And I think it would be useful for the Committee to see both of these kinds of translations—the one they're currently using and the one that comes out in Nelson and Roberts's framework. So once we've done that, we have a path of

short-term interest rate reductions provided by current portfolio policy and a path of short-term interest rate reductions generated by the policy in A. We can apply any standard monetary policy rule to decide whether A is better than B, given conditions now and given what I expect for conditions.

So where I've gotten to so far is, I think it would be useful for us to have two additional pieces of information as we think about A versus B. One would be the term premium reductions implied by these alternatives, and the other would be the map of the implied short-term interest rate reductions associated with those term premium reductions. And I think my staff has come up with a really nice way of doing that second calculation, which they'd be happy to share with their counterparts at the Board. Now, as I talk through this, it should be clear: I'm using an LSAP-adjusted policy rule to evaluate alternative A. That's because LSAP adjustment is the only way I know how to use existing policy rules to evaluate potential augmentations to the balance sheet. But if I'm going to use LSAP adjustment when I think about increasing accommodation, I have to use it when I think about decreasing accommodation as well. So if I want to use a rules-based approach to evaluate an alternative like C, it seems I have to also use an LSAP-adjusted rule. Now, in reaching this conclusion, I'm very mindful of the exercises that Nelson and Roberts had in their great memo that suggest that LSAP-adjusted Taylor rules may lead to premature exit. But their results may be sensitive to a couple of aspects of their analysis. First, they don't allow the FOMC to choose the size of the balance sheet optimally, which is exactly what I was trying to do when I thought about alternatives like A. In particular, they constrain the FOMC to maintain too small a balance sheet relative to the recommendations of an LSAP-adjusted Taylor rule. Second, they start their experiments at the beginning of a sharp downturn. I would have found it informative to evaluate the performance of an LSAP-adjusted

rule when we're in the state we're in right now, which is, we have an output gap of minus 5 percent that we expect to steadily grow back to 0. The reason this is important is that you don't want to be making policy now in order to try to stimulate activity back in 2009, because—well, we're not thinking about that, I don't think.

To wrap up here, in the economic go-round, I argued that even without LSAP adjustment, Taylor (1999) would imply little need for additional accommodation. In this go-round, I've argued that a rules-based analysis of the size of the balance sheet requires us to LSAP-adjust those rules. Once we do that, I think we have an even further weakening of the case for providing additional accommodation. In fact, it pushes us closer toward alternatives like C. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I support alternative B. Paragraph 1 notes that "labor market conditions have improved further." As I discussed in the economic go-round, this improvement is meaningful, and it's a very welcome development. That said, unemployment is still elevated, and if the staff is right, absent some unanticipated pickup in spending, further declines in unemployment over the next two years will be modest at best. There is, of course, some chance that the recent decline in unemployment reflects greater momentum in spending than is incorporated in the staff forecast, a scenario like the "Virtuous Circle" alternative in the Tealbook. At this point, though, we just don't know.

In light of our considerable uncertainty about the strength of the recovery, I think it makes sense to keep an eye on the incoming data while holding policy unchanged for now. So I would not support a change in our forward guidance language today. In particular, I still consider our current forward guidance of "at least through late 2014" appropriate. My own

assessment regarding the appropriate time of policy liftoff has moved forward slightly in response to the recent data, but that assessment still remains significantly later than the end of 2014. In my view, the appropriate path for the federal funds rate is closer to the Tealbook's constrained optimal control policy than to the paths implied by the outcome-based rule or Taylor's 1999 rule. The constrained optimal policy keeps the funds rate at zero until the fourth quarter of 2015, and its advantages vis-à-vis the baseline are crystal clear from the figures on page 8 of Tealbook B. The unemployment rate under the optimal constrained policy path is notably lower than in the Tealbook baseline. And the magnitude of the inflation deviations is substantially smaller throughout the remainder of this decade. Of course, the sign of those deviations is different. The path for inflation rises to around 2¼ percent for a few years, while the baseline lingers below 2 percent for many years. Indeed, that path seems consistent with our judgment that the 2 percent inflation goal is a target, not a ceiling, and with our commitment to follow a balanced approach in promoting both of our dual objectives.

Of course, the strategy of maintaining a highly accommodative policy entails some risks if the recovery proves a lot more robust than the Tealbook anticipates. We could overshoot our employment and inflation objectives if we respond too slowly to incoming information. But there are also risks associated with pulling back accommodation too quickly in response to the stronger labor market data. For example, back in the spring of 2010, and again in spring 2011, we became overly optimistic about the economy's underlying strength and started heading toward exit a bit prematurely. Consequently, I'm concerned that we could be misled yet again by hopeful signs early in the year followed by tepid growth later, and that a premature move toward policy firming could end up driving inflation further below our objective and retard what is already a long-delayed return to maximum employment. To me, the proper way to balance

those risks is clear. We have time-tested tools for fighting back if inflation threatens to move persistently above target. For example, the Tealbook simulations corresponding to the "Virtuous Circle" scenario suggest that as long as we do respond to incoming evidence, any overshooting of our inflation objective would be brief and mild. But recent experience makes clear that our toolkit for stimulating the economy at the zero lower bound is much more limited and fraught with uncertainties. Thus, given the asymmetric risk that we face when policy is constrained by the zero lower bound, I prefer to err on the side of continued accommodation. In particular, I would want to see much clearer evidence of a durable and robust recovery, or of rising inflation pressures, before I'd advocate moving up the projected date of tightening. On the downside, I will be watching for evidence that the recovery is faltering or that inflation is heading further below our 2 percent goal, in which case I would be supportive of taking further accommodative steps, such as those presented in alternative A.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. Getting ready for this, I went through the exercise of deciding what my fed funds projections would be if we were submitting them for this meeting. And I found that they wouldn't change much, because my forecast was somewhat brighter than the staff's last time, and so the baseline forecast is now closer to the forecast that I had. So my estimate of liftoff wouldn't have moved versus the movement forward of two quarters in the Tealbook. Therefore, I find it really easy to live with no change in policy. But even if I did feel as though the economy had strengthened, I would still think it wise to wait for additional confirmation that that strength is real. And I'll discuss more in the communications round, but I do think it's important that increments in and the sensitivity of changes in this

forward guidance are important discussions of policy. I went down a thought path similar to the one described by President Lacker. I just landed in a completely different place.

I view the stickiness in the date as similar to the reluctance to begin quarter-point moves until the expectation that they will continue. If we were in an environment where we were talking about moves to the fed funds rate, this might be one where there was some justification for a quarter-point move, but not a justification that would lead you to believe that those moves would be sustained. And so then when I think about increments, I think in terms of quarters. And so far, our short history of moving this date is six quarters at a time. I confess that I hadn't considered swapping "through late 2014" for "until late 2014" as a possible partial quarter-point move. But while I'm content to make no change at this meeting, what I worry about is that our preferences on how we change this guidance may end up being defined by our actual behavior while we debate our preferred behavior. Thank you, Mr. Chairman.

MR. LACKER. Mr. Chairman?

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Governor Duke, the approach you suggest of waiting to change the forward guidance language until we're more confident that we're going to engage in a sequence of moves, or all of the next moves are going to be in the same direction, would you view that as likely to imply that, at times, we have guidance in the statement that's at variance with our expectation? Wouldn't that imply that sometimes our expectation would be second quarter, but not enough evidence has accumulated to move off of "late 2014"? Is that consistent with the approach you're advocating?

MS. DUKE. I'm not entirely sure.

CHAIRMAN BERNANKE. The federal funds rate doesn't move in a random-walk way; it moves, obviously, in a directional way—right?—which is the point you were making.

MR. LACKER. Right. But we impart persistence to it.

CHAIRMAN BERNANKE. Well, I think one concern might be, not in terms of what we intend, but in terms of what is interpreted. Suppose we were to move the late 2014 date to a month earlier, which is a trivial change in itself, but it would be the first time since 2006, 2007, whatever it was, that we had a tightening move.

MR. LACKER. Right.

CHAIRMAN BERNANKE. So would that not risk suggesting to the public—

MR. LACKER. This is what's wrong with using forward guidance.

CHAIRMAN BERNANKE. Maybe so, but that's where we are. I'm sorry—are you okay?

MS. DUKE. Thank you.

CHAIRMAN BERNANKE. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. For the reasons well and succinctly stated by Sandy, I favor alternative B. I would just add that I would be reluctant to make any changes, certainly in the policy parts of this statement, precisely because I think we need to think a few meetings at a time now. Where do we actually think we're going with respect to both communications and, potentially, policy? If things stall and additional action is more on the table again, I think we'd want to have thought through where and how we believed we'd be going with additional policy measures, and we haven't done so. On the other hand, if things continue to strengthen and there's no thought of further accommodation, but instead more people begin to talk about tightening, again, we haven't talked through how that would actually proceed

over the course of a couple of meetings. So I favor a holding pattern right now, and as such, as I said, I would not favor any changes in the policy language. That's why, even though John's change may be a good one at some point, I wouldn't do it now. I'm not even in favor of, at the beginning of paragraph 3, changing to "the rate most consistent," but I already lost that battle, so I won't belabor it.

With respect to the first two paragraphs, I wouldn't change much here except maybe for the "strains in global financial markets" that some people have mentioned. I do think they continue to pose significant downside risks. That is, the magnitude of the potential downside risk is still pretty great, although the likelihood, the probability, of those risks has, at least in the near term, abated somewhat. And I wonder whether a slight, but only a slight, compromise might be to say, "Strains in global financial markets have eased, though they continue to pose significant downside risks to the economic outlook." Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. As I described in the economic outlook go-round, the forecast seems to me to be swimming in an ocean of uncertainty about how the economy is functioning in the wake of the financial crisis. I'm hovering between seeing good signs from the labor market, which might signal that a more galloping recovery is around the corner, and seeing income and spending growth, which appears much too modest to support a robust recovery. This position makes me believe that if we maintain our highly accommodative stance too long in the face of a robust recovery, we face a risk of significantly overshooting our inflation objectives. If, instead, the increasingly strong employment data lead us to pull back on accommodation, we face the risk of tightening in a weak economy, which could drive inflation well below our objective and further delay what is already a long-delayed return to maximum

employment. How do we balance these risks? As Governor Yellen mentioned, I think there's an asymmetric nature to the upside and downside risks. We know what to do if inflation threatens to move persistently above target. Our contractionary tools are, if not necessarily time tested, certainly readily available and would be deployed if we see that we are overshooting our inflation objective in a manner that is more than brief and more than mild. On the other hand, if we had to re-stimulate because we had prematurely tightened, we would have a much more challenging course to follow. We've learned that our policy options are more limited and attenuated when it comes to stimulating the economy when interest rates are at the zero bound. Thus, at the present time, I err on the side of continued accommodation and support alternative B. It would take much more unequivocal evidence of a durable and sustained recovery, or of rising inflation pressures, to begin a tightening course of action. On the downside, if 2012 follows the pattern of recent years—hopeful signs early in the year followed by tepid growth later—further accommodative steps may be required. Thank you.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. I support alternative B. I think we've seen a slightly better modal economic growth outlook and less tail risk from Europe, and the maturity extension program is ongoing. So it doesn't seem like the right time to engage in further monetary policy easing measures. That said, though, I think we should keep the alternative B language changes very minimalist. In terms of changing the date guidance, moving it forward to the present—I would be very strongly opposed to that. First, it would be inconsistent with how patient we were from "mid-2013" until making the move to "late 2014." We waited several meetings, and then we moved it a lot. To make small adjustments now would be inconsistent with what we've already done. Second of all—and I think this is the point you

highlighted, Mr. Chairman—it would be seen as the start of a tightening regimen. The dealer survey suggests that the expectation of future MBS purchases is a probability of 50 percent. I think if you actually move the date inward, you would significantly reduce that probability assessment. That would lead to higher term premiums and wider MBS spreads. So I think it would actually lead to a meaningful tightening of financial conditions, and I don't really see any evidence that this is where we want to go at this point. Thank you.

CHAIRMAN BERNANKE. Okay. Thank you very much. Thank you for the useful discussion. Let me just say a word about the broad issue. I favor alternative B, without a change to the rate guidance, for a couple of reasons. First, I don't think it's clear that there's been a very large, discrete change since our last meeting. Yes, things are more positive, but we still don't have evidence that the recovery is self-sustaining, and the absolute level of conditions remains quite unsatisfactory. So I think there's a case, just on the fundamentals here, to take more time to see where the economy is going. I would raise the related point that if we were to change the date, we don't know what date to change it to at this point. We don't have the guidance of an SEP. And while we've heard some people express views about their changes, we would like to know what the mode is and where the overall change in views is. So that's one problem. A second problem is that, as I hope the second round will help clarify, we need to understand better what this guidance actually means—President Lacker has been at the forefront here of raising this question. And I think we need to do a better job, perhaps in today's discussion and in subsequent discussions, of explaining what it means. Now, it could be, for example, that we do want to include some element of commitment along the lines of the memo on the zero lower bound, where making up for the zero lower bound entails promising to hold rates lower for

longer. Maybe that's an outcome we would come to. I'm not saying we will, but my concern is that we haven't had the discussion yet.

So it's not clear to me that the outlook has changed radically, and I'm not quite sure how we would go about deciding on where to adjust the date if we were adjusting it today. But more important, we have very intentionally set up an extra go-round today to really try to get a deeper understanding of how we should be going forward in terms of our communication. There are some very important issues. The goal here is to make progress before the next two meetings—both of which happen to be meetings that are two days and have a press conference, and that are therefore much more conducive to making a more subtle determination, a more considered determination, and one that we can explain to the public. Again, for all those reasons, I think it would be premature to make that change today.

With respect to language, let me make a few comments here. I appreciate what President Williams is trying to do with the "until," but that's a little too subtle for me, I'm afraid. And I think for today, I would prefer to keep the critical words unchanged. There were some questions about "dual mandate" and "2 percent." I think these are worth discussing in a more considered way. The particular issue, of course, is the following: Our policy statement tried very hard to maintain the symmetry of employment and inflation objectives. The word "dual" emphasizes the twoness of those objectives. Now, I don't think, actually, that striking "dual" would make a big difference, but it's something we ought to discuss. Putting in the "2 percent" for inflation is very attractive, and I think we should discuss it. But the symmetry would suggest in that case, looking at what we did in our statement, that we put in the estimate of the NAIRU in the earlier sentence where we say "anticipates that the unemployment rate will decline gradually toward levels that the Committee judges to be consistent with its dual mandate." Well, what are those

levels? So one could put numbers in both sides. I think, again, that's a question to be discussed. These are critical issues that we need to come back to. The other things that were raised were mostly about language, and I'm happy to talk about them. In particular, what do we have?

VICE CHAIRMAN DUDLEY. Strike the word "significant."

CHAIRMAN BERNANKE. It was two things. One was about the "strains in global financial markets." We tried, in the language here—"while having eased somewhat"—to capture the point that Governor Tarullo made about the sense that currently they're not quite as bad, and maybe the probabilities are less, but the risk that they pose is still large if it occurs. So I would make two proposals. One would be to get rid of the "having eased somewhat" and get rid of the word "significant"; then you would just be making that adjustment to the sentence. And the other might be the thing that Governor Tarullo suggested: "Strains in global financial markets have eased, though they continue to pose significant downside risks." I'm really fine with any of those things, and I wonder if anyone has any particular preferences. President Lockhart.

MR. LOCKHART. I realize I can get caught up technically in whether we're, strictly speaking, talking about strains in global financial markets that exist today, but I just want to share the concern I was trying to convey in the economy round, and it wasn't about Europe. It was about the Israeli–Iranian potential for a conflict, which then would produce strains in financial markets that we could not very easily, in anticipation, predict. And I think we're making a mistake if we suggest that that problem isn't part of the potential picture and if we downplay it as something that's not going to have an effect on either financial markets or the real economy. So I'd like to keep the word "significant" in—not, strictly speaking, because it's about financial markets today, but because that risk looms out there.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. Yes. Another alternative would be to say, "Strains in global financial markets still pose significant downside risks to the economic outlook." So it would be implicit that things have improved a little bit.

CHAIRMAN BERNANKE. How is it changed from the previous language?

VICE CHAIRMAN DUDLEY. Rather than say "continue to pose," I'd just say "still pose significant downside risks."

CHAIRMAN BERNANKE. I think that the sense of that is very similar.

VICE CHAIRMAN DUDLEY. It's similar, but it's basically acknowledging that things have gotten a little bit better.

CHAIRMAN BERNANKE. I see. Well, let's try some others. Governor Duke.

MS. DUKE. I like Governor Tarullo's suggestion, and I'm thinking about the "strains in . . . markets, while having eased somewhat" as being a little bit of a change in the probability of them happening. But the risk if they do happen is still very significant. So I like keeping "significant" and changing the "strains."

CHAIRMAN BERNANKE. I'm perfectly fine to go to Governor Tarullo's suggestion, but I'm not sure why the existing language doesn't do exactly what you said.

MS. DUKE. Either one would be fine, but I like keeping "significant," and I like "eased somewhat."

MR. TARULLO. It was the "somewhat," Mr. Chairman. In addition to an aversion to using participles unnecessarily, it was the deletion of "somewhat" that was meant to move a little bit in the direction of those who thought the probabilities had changed.

CHAIRMAN BERNANKE. I see. All right. President Fisher.

MR. FISHER. Having advocated for removing the word “significant,” I think Governor Tarullo has given us a good answer, and I would advocate for that.

CHAIRMAN BERNANKE. Okay. Is it okay if we do that?

MS. DUKE. Yes.

CHAIRMAN BERNANKE. All right. So, “Strains in global financial markets have eased, though they continue to pose significant downside risks.” The other issue that was raised, although I’m not sure I got specific language, was about the housing sector.

MR. FISHER. I have a suggested change, Mr. Chairman. It may be too much because it adds more verbiage. But what I had suggested was, “Indicators of conditions in the housing sector have improved somewhat”—since we took it out elsewhere—“but amid uncertainty as to when prices will stabilize.” To say that “the housing sector remains depressed” is too harsh given what we heard at this table, in my opinion. But, on the other hand, if you guys are going to—

VICE CHAIRMAN DUDLEY. Prices are still declining; activity is very depressed. How could you say the housing sector is in good shape?

MR. FISHER. But conditions have improved. Look at housing starts. Look at all of the data.

VICE CHAIRMAN DUDLEY. Maybe.

MR. FISHER. Not maybe. The data indicate that for three months.

VICE CHAIRMAN DUDLEY. Weather. Weather, Richard.

CHAIRMAN BERNANKE. Is there some way to put a preliminary thing—“Although some indicators have been better on balance . . . ”?

VICE CHAIRMAN DUDLEY. I just think it’s pretty weak.

MS. DUKE. I'm the most optimistic about the potential for it to turn around, but I still don't think it has.

CHAIRMAN BERNANKE. Oh, okay.

MR. FISHER. No, you're not as optimistic as I am.

MS. DUKE. I think when it turns around, it could turn around sharply, but I don't—

MR. FISHER. I won't fight this, Mr. Chairman, but I think maybe at the next meeting, we might indicate if—

CHAIRMAN BERNANKE. Okay. Noted. But I think the staff view, at least, is that we haven't yet seen real changes in the data.

MR. WASCHER. I think that's right. We think that the December and January starts are elevated by the weather, and we expect that to—

MR. FISHER. Well, let's wait and see if the weather weathers out.

VICE CHAIRMAN DUDLEY. My point, Mr. Chairman, is a very simple one. Even if it improved a bit, it would still be depressed.

CHAIRMAN BERNANKE. Yes. Well, I know, but we're looking at differential changes in labor markets, for example.

MR. FISHER. Never mind.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. This is on a separate point.

CHAIRMAN BERNANKE. Okay. What's your separate point?

MR. LACKER. It's back to this "2 percent." We put "2 percent" in the consensus statement; we didn't put NAIRU in the consensus statement.

CHAIRMAN BERNANKE. Yes, we did—5.2 to 6 percent is in the statement.

MR. LACKER. We did not equate that with maximum employment. And that's a number that—convergence takes years.

CHAIRMAN BERNANKE. It's maximum employment.

MR. LACKER. And that's different from our mandate. We don't equate it to our mandate in the statement. We're very careful to distinguish between maximum employment and the reports we have in the SEP of what unemployment converges to in the long run.

CHAIRMAN BERNANKE. I'm not sure that everyone agrees with you on that.

MR. LACKER. I guess it should be for a separate discussion.

MR. KOCHERLAKOTA. Mr. Chairman?

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Mr. Chairman, I have sympathy for what President Lacker is saying. But I would also say that I think he's raising very deep issues that probably are best deferred.

CHAIRMAN BERNANKE. That would be my response, as usual. [Laughter] President Lacker, the subject of your concern could not be addressed in finite time. President Fisher.

MR. FISHER. I think we dispensed with this, but I would have started the sentence by saying, "Consistent with its dual statutory mandate." We talked about "foster maximum employment and price stability." The sentence we're talking about here is only about inflation. Jeff is right. We have circumlocution at the end, only dealing with inflation. So, "subsequently inflation will run at or below"—because we're talking about inflation—"the stated long-term target of 2 percent."

CHAIRMAN BERNANKE. Look at the second sentence of paragraph 2: "Anticipates that the unemployment rate will decline gradually towards" circumlocution. [Laughter]

MR. FISHER. Remember me talking about Charles Dickens's office of circumlocution in *Little Dorrit.* But I think Jeff has made a sensible recommendation in the sentence about inflation, and I just wanted to support it.

CHAIRMAN BERNANKE. I take his point. I take this as part of our broad communication challenge. Are there other comments? [No response] Okay. Let's go ahead and get this done.

MS. DANKER. Okay. Let me make sure I've got this sentence correct. The way it's been edited, it reads, "Strains in global financial markets have eased"—

CHAIRMAN BERNANKE. Comma.

MS. DANKER. —comma, "though they continue to pose significant downside risks to the economic outlook."

CHAIRMAN BERNANKE. Correct.

MS. DANKER. Okay. With that sentence inserted in alternative B, instead of what's there now, as well as the directive, let me call the roll.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes
Governor Duke	Yes
President Lacker	No
President Lockhart	Yes
President Pianalto	Yes
Governor Raskin	Yes
Governor Tarullo	Yes
President Williams	Yes
Governor Yellen	Yes

CHAIRMAN BERNANKE. Thank you very much. We're going to continue with another item, which will be the discussion of our communication strategy more generally. It's 1:30. Why don't we take 30 minutes to get our lunches, and we'll reconvene at 2:00? Thank you.

[Lunch recess]

CHAIRMAN BERNANKE. Now let's recommence our meeting formally at this point. Our last principal item is item 4, "Discussion of Issues Related to Policy Communications."[4] As you know, at the zero lower bound, we basically have two sets of tools. The first are tools related to our balance sheet, and I'd like you to know that the staff is working on both reviewing and analyzing our previous LSAPs and the potential for future use, if the Committee should decide to go in that direction. The staff is also looking at the maturity extension program—how it worked and, again, whether there would be any potential for further use of such a tool, if the Committee decided it were appropriate. I think I will mention that, as far as I know, nobody in the System is working on sterilized QE. Therefore, reports to that effect—

MR. FISHER. Are sterile. [Laughter]

CHAIRMAN BERNANKE. —are greatly exaggerated and may reflect badly on whoever leaked it, if somebody did. Anyway, so that is under way, and we'll want to make sure that we're well prepared for whatever eventuality may arise.

The second major tool, of course, is communication strategy, which is something we've been working on for some time. And I commend the Committee for very thoughtful work on this area. We want further discussion of that today. I want to say, first of all, that—fortunately, I think—we have no intention to come to any final decisions today. The purpose of today's discussion is to get guidance from the Committee on future directions and how we might address some of the concerns that were raised in the previous go-rounds. In particular, I will say that when we put in the contingent date—back in August, I guess it was—it was my belief and expectation that at some point, we would move to a more state-contingent type of description. That has a very substantial advantage, which is that as long as the state contingency is

[4] The materials used in the discussion are appended to this transcript (appendix 4).

unchanged, even if the outlook changes, you don't have to make adjustments to the statement. But we didn't succeed in a few attempts, looking narrowly at some particular language, to come to that improvement. So today, I want to open the floor more widely to talk about a variety of different ways in which we might improve the state contingency of our communication. First of all, there are some alternative-language paragraphs given in this memo that was circulated. Those are only there for discussion purposes. We shouldn't spend a lot of time editing them in detail. Rather, they're just some different alternative approaches that we might use if we decide to go with using the statement to clarify the nature of our forward guidance. That's one possibility. But in addition, there are other possibilities, including modifications to the SEP, and yet even other things, like potentially, for example, a common forecast or a variety of things one can imagine. If we make progress on something related to the statement or to the SEP, potentially we could even come to you in April or June with a specific proposal. If it's something that takes a longer lead time, obviously, we won't be able to do that that quickly. But again, the purpose of this item is just to get the Committee's input.

One comment on commitment and those kinds of questions. First, I want to commend the authors of the memorandums that were circulated. They were very useful, as a number of people have already noted today. And one of the things that those memorandums noted is that you can have a state-contingent rule or a state-contingent commitment, which differs according to a variety of things, including whether or not you think that we have credibility to make forward commitments—for example, for time-consistent policies in the future—or whether you think that we should adjust for the zero lower bound or whether we should just be following a simpler, perhaps more robust rule. When you think about what we're doing in the SEP when we give our own interest rate projections, we haven't really specified what we mean by "optimal

policy." And in particular, if you are somebody who strongly believes that we do have credibility and the ability to commit at least a few years in advance, presumably that's reflected in your optimal policy path. What I'm saying here is that, while the communication issue is the preeminent one, the discussion has raised some questions about exactly what we mean by "optimal," and I think any discussion that bears on that would probably also be useful. So with that, I will stop and begin a go-round. And I'll start with Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I'd like to start with a few general remarks to help frame this afternoon's discussion, and then offer my own views regarding each of the specific questions. In the consensus statement the FOMC adopted in January, we committed to explain our policy decisions as clearly as possible. I view today's discussion as a further step in carrying out that commitment. Indeed, I see clarifying the linkages between the economic outlook and our policy decisions as critical at the present juncture. The Committee has judged that highly accommodative policy is likely to be warranted for a period of years, not just for months or quarters. But there are plausible scenarios in which the onset of policy firming might need to be accelerated. And there are other scenarios in which further accommodation could become warranted. Without some explanation from the Committee, it's extremely hard for the public to judge how we will make such decisions. With policy constrained by the zero bound, empirical analysis of the evolution of the funds rate over previous decades doesn't necessarily shed much light. This means there's a compelling need for the Committee to explain our policy strategy to the public. In that regard, we need to be mindful of the distinction between clarity and transparency in our policy communications. Those two characteristics are generally complementary. I think we can be proud of the progress the Committee has made on both fronts under the Chairman's leadership. For instance, the issuance of our consensus statement appears

to have been quite effective in enhancing the public's understanding of our longer-run objectives. But clarity and transparency are not always identical. Providing a large volume of information may be effective in promoting transparency, but practically useless or even counterproductive in terms of enhancing the clarity of communication. In fact, the attorneys at our table would probably attest that a classic strategy in corporate litigation is to overwhelm your opponents with truckloads of documents, thereby minimizing their chances of finding a handful of key memos in time to bolster their case at the trial.

With regard to FOMC communications, I believe that our degree of transparency now exceeds that of any other central bank. We issue postmeeting statements, publish detailed minutes three weeks later, and provide summary information about participants' individual economic and policy assessments in the SEP. And the Chairman highlights that information at regular press conferences. The FOMC is unique in releasing a full transcript of our discussions after an appropriate lag, and we may find further ways to enhance transparency. But at this stage, our focus, first and foremost, should be on enhancing the clarity of our communications. Consider a corporate analogy. Suppose that our Committee were the senior management team of a large corporation, with the public as our shareholders and the Congress as our board of directors. In effect, our commitment would be to serve the interests of our shareholders, not by maximizing profit or market share but by promoting the goals of maximum employment and price stability. To maintain shareholders' confidence, every enterprise needs to present a compelling strategic plan. For a firm in a mature industry, such a strategic plan might be fairly brief and simple—in effect, continue with business as usual. In contrast, a firm in a fast-moving and innovative sector typically requires a more elaborate plan, incorporating not only a benchmark strategy but also some discussion of likely responses and key contingencies. But one

point seems crystal clear: No enterprise would dream of communicating its business strategy by simply polling its management team and publishing the results. In effect, every strategic plan represents the collective judgment of the senior management under the leadership of the CEO.

Of course, no analogy is perfect, but I think we can extract two key lessons here. First, we need to have a clear strategy and explain it to the public. Given that financial conditions at the zero bound are particularly tied to the public's expectations regarding the future course of monetary policy, our effectiveness in promoting maximum employment and price stability is crucially dependent on conveying our policy strategy as clearly as possible. Second, our policy judgments are conveyed through our postmeeting statements. In contrast, the SEP facilitates transparency by providing information about our individual economic and policy assessments. But the SEP cannot be viewed as any sort of substitute for the Committee's collective decisionmaking or for communicating those decisions as clearly as possible in our postmeeting statements. In effect, we need to strive for clarity as well as transparency.

Turning now to the first question, I think it would be very beneficial to clarify our policy strategy by characterizing the contours of the economic outlook over the next several years, not just over coming quarters, and by providing quantitative information about the economic conditions that are likely to prevail at the time that policy firming commences. At recent FOMC meetings, I've been a consistent proponent of conveying such information in the form of thresholds, but I think that approaches like those presented in the appendix, part B, of the background memo would also be effective while circumnavigating some notable concerns with the threshold formulation. An approach along these lines could be particularly useful in elucidating our response to aggregate demand shocks, such as a reassessment of the strength of consumer spending, a shift in the fiscal outlook, or the prospects for foreign economic growth.

Such shocks would typically warrant a corresponding shift in the anticipated timing of policy liftoff, as expressed by the calendar date in our forward guidance. But they would not necessarily be associated with any change in the projected rates of unemployment and inflation at the time of liftoff. In contrast, an aggregate supply shock would pose a more fundamental tradeoff between our dual objectives and hence might well call for a change in the modal projections of unemployment and inflation at liftoff as well as the calendar date. Consequently, under such circumstances, this way of framing our forward guidance could prove quite helpful in conveying the Committee's collective judgment about the most effective way to balance the dual objectives.

More specifically, I like the general formulation of paragraph 3.4, which leaves open the possibility that the Committee's next policy move could be in either direction—that is, the onset of policy firming or the provision of additional accommodation. However, I prefer to meld that formulation together with the second sentence of paragraph 3.2, which underscores our modal inflation outlook while avoiding any implication that our 2 percent inflation goal is a ceiling. Indeed, to underscore this key point, language could be inserted into paragraph 3.2 to explicitly state that policy firming would not necessarily be triggered by a temporary surge in inflation or a modest, but more persistent, overshoot above its longer-run goal. I consider it sensible to preserve some flexibility regarding the conditions the Committee may judge as calling for the initiation of policy firming. Paragraphs 3.2 and 3.4 convey that flexibility by the characterization of unemployment as "near or somewhat below" 7 percent and by pointing to other relevant factors such as "the pace of improvement in labor market conditions" and the contours of the inflation outlook. Of course, we need to recognize that such flexibility is obtained at the price of somewhat less clarity about the linkages between the economic outlook

and the likely time of policy firming. Consequently, I believe it would be essential for our postmeeting statement to continue to convey information about that timing in terms of calendar dates.

Turning to the second question, the SEP has generally been focused on characterizing the distribution of participants' assessments of the outlook for each economic variable at each forecast horizon. A step toward further transparency would be to start connecting the dots over time and across variables. For example, multivariate scatterplots might be useful in conveying the range of participants' judgments about the economic conditions that will be associated with the onset of policy firming. Nonetheless, it seems difficult to go much further down this road without publishing the full matrix of participants' projections, identified by name. After all, even if that matrix were published with randomized ID codes, it's easy to envision how Fed watchers would try to identify the names behind those ID codes by piecing together information from participants' speeches and other public communications. I would personally be comfortable with moving to full transparency for our SEP assessments, but I recognize that others around the table may prefer to stick with the current formulation of the SEP. In any case, as I already noted, transparency is no substitute for providing greater clarity about the collective judgments as a Committee.

Finally, on the third question, I think that the consideration of alternative scenarios could be a very fruitful means to discuss and communicate about our policy strategy. In contrast, after roughly a decade of service on the FOMC, including two stints on the communications subcommittee, I have deep-rooted skepticism about the workability of producing an FOMC consensus forecast. Moreover, even if such an approach were judged to be feasible, it's not clear

that there would be any substantial benefits beyond what we could attain by clarifying the conditional forward guidance in our postmeeting statement.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Let me start by thanking the staff for putting together this excellent document for organizing our discussion. I found it very helpful, and I think our communication, if you don't realize it already, is a journey that seems to go on and on and on. But it's an important one, and it's important that we strive to clarify our monetary policy framework for the public, and to make it understandable. As I alluded to in my previous remarks, I'm in favor of providing more information to the public. I think, however, that using the statement as the primary vehicle for doing so puts too much onus on the statement. I believe an effort at improving communications will be served not only by improving the statement language, but also by providing other, more-detailed information in terms of communication.

Regarding the statement, my preference would be that the discussion of data be general and refer primarily to the key factors that most directly influence policy, as implied by the sorts of robust rules that I and the Committees in the past seem to have favored—for example, variables like inflation, inflation expectations, resource utilization, and such measures. Those actually tend to be the arguments of many of these robust rules, and so we ought to talk about our policies in terms of those. One can think of these variables as describing the broad arguments of our reaction function, as I said. Unfortunately, we are a ways yet from agreeing on a mathematical expression for that, whether it be Taylor (1999), Taylor (1993), a first-difference rule, or an outcomes-based rule. But the arguments always seem to be the same. Thus, while these terms are important and informative to the public, they ultimately will not remove the

judgment or subtle differences among us in how we interpret some of these measures. For example, the appropriate measures of resource utilization—as we know from discussions around this table for some time, participants have different views about which measures are appropriate and what their magnitude is. I don't think we can completely squash that, nor do I think we should. In fact, I view that discussion as a good thing at this point in our evolution toward more systematic behavior.

Currently, we often refer to the general factors in the statement—inflation, inflation expectations, and resource utilization. But where I think we fall short is, we fail to draw tight linkages as effectively as we could between the evolution of these measures and the descriptions of our policy actions. For example, I believe we should seek to explicitly link the actions in our policy statement to the changes in the behavior of key factors in our reaction function. If we choose to ease or tighten policy at a meeting, then we should be able to explain why in terms of the changes in these key factors. After all, that's how the robust rule is telling you to behave. If we can't do so, then it seems to me it's incumbent on us to explain why. And indeed, that's part of the value of these robust rules—it improves your communication when you deviate. Describing our policy actions in the statement in this manner consistently—and I emphasize "consistently"—we could greatly enhance the market and the public's understanding of our more systematic policy approach, thus improving communications and the transparency and predictability of monetary policy.

As I alluded to earlier, and as President Williams alluded to in his remarks earlier today, there are times when crises or other issues intervene from a normal operating procedure, from these simple rules. And President Williams talked about what happens when you get to the lower bound. But I think it's very dangerous for us to design policies and frameworks in the

midst of grappling with departures from our policies. I would prefer us, in terms of moving forward, to think about simple policy rules in a normal operating framework. And then when it comes time, whether it be the zero bound or some other circumstance where we'd need to deviate from that for some reason, we have a benchmark that we're deviating from. I think it's dangerous to design policies and frameworks that are importantly operative only in extreme cases.

One can view the thresholds that are contained in some of the examples in the memo in that light, but I'm very much against providing thresholds. Particular thresholds are tied to particular views of the Phillips curve, for which there's no consensus on this Committee. The lack of consensus can be seen by looking at the scatterplot of inflation and unemployment in the SEP projections at the time of liftoff, which was provided to the Committee in its package at our last meeting. As you recall, there are participants whose conditions in terms of inflation and unemployment rates at the time of liftoff might have been very similar, but their views of when that liftoff occurred differed substantially. Thus, in terms of the prototype language provided in the appendix of the staff's communication memo, I generally prefer something closer to 3.3. That's not my preferred language, but it's closer because it doesn't have the triggers, obviously.

I also think there's an opportunity to make progress in looking at alternative C in the statement language from this time. President Bullard recommended the last sentence of alternative C, paragraph 3, which reads, "The Committee . . . anticipates that this exceptionally low range for the federal funds rate will be appropriate only as long as inflation is projected to remain subdued over the medium term, longer-term inflation expectations continue to be well anchored, and progress toward maximum employment remains insufficient." I'm a little uncomfortable with the word "insufficient," but the point is, it's explaining a reaction function.

It's explaining the terms of our reaction function, and I think that's the direction we need to go. In general, though, even this paragraph can be improved, and the links can become tighter relative to our actions. So in that regard, the memos that I mentioned earlier on simple rules were a big help. So I would encourage the staff and the Committee to continue to explore robust rules—what their implications are and how they perform. I think it will be informative for the Committee.

In order to more effectively communicate the way we carry out monetary policy, though, we need to consider relying on more than just the FOMC statement, which by its nature has to be terse. In that regard, I think we should consider producing something that looks more like a monetary policy report along the lines of those produced at other central banks. It need not be as long or as detailed, and our current SEP provides a platform for moving in that direction. A key feature of the report would be to provide forecasts of economic growth, unemployment, and inflation, and convey a measure of uncertainty surrounding those forecasts. In turn, these variables could be linked to the behavior of inflation or resource utilization that various members of the Committee find useful. The appropriate path of monetary policy and the uncertainty associated with that path should be directly discussed in terms of the evolution of the key variables. Doing so would help convey the state-contingent nature of policy, as well as the inherent inertia that's built into systematic or robust policy rules. I've said for some time, for example, that I believe the value of the SEP assessments of appropriate policy is going to accrue to the public as they watch how those variables change over time—not what they say at a point in time, but how they evolve. And I think that's a very important part of our transparency. As the public gains a higher understanding about the systematic way we conduct policy and the

variables that are important, our policy actions will become more predictable, our communications will become easier, and we can get better economic outcomes.

One feature in many monetary policy reports is the indication of forecast uncertainty. The staff on the subcommittee on communications is considering various ways one could convey uncertainty around the policy paths and around participants' forecasts more generally. Now, the distribution of these projections across participants, as we report them by ranges and central tendencies, really does not communicate much about the true uncertainty that surrounds those forecasts. Indeed, if all participants projected the same policy path, there would be no divergence in the views, but there would still be large error bands if the projections of the funds rate were expected to change sometime in the future.

As a further aid to transparency, I'm generally in favor, as Governor Yellen mentioned, of communicating the full matrix of the SEP forecasts. This would make the information easier to interpret and give a better sense of the linkages between economic conditions and policy. I understand this is not widely supported, but it would be a step in a good direction. I think we can also produce a median forecast from the SEP rather than just a central tendency. It wouldn't be a consensus forecast, but it would be a median forecast that we could put reasonable standard errors on. However, I'm also dead set against distinguishing between voting and nonvoting members in any way. A great strength of this Committee is the equal participation of everyone around the table, whether I'm voting or not. If I'm a voting member, I'm often influenced by what a nonvoting member might say. And that person's views often lead to additional research and discussion with my staff. Relying on the combined expertise of everybody in the room in formulating policy is a special and distinguishing characteristic of our deliberations. And I

would want to avoid doing anything that could potentially jeopardize or undermine that feature of the policy process. Thank you.

CHAIRMAN BERNANKE. Thank you very much. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. As I see it, the communication strategy right now is suffering from two shortcomings. First, the statement and the SEP currently provide very little basis for understanding what the date—currently late 2014—is based on. And it doesn't provide much basis for understanding how that date might change in response to changes in economic conditions and in the economic outlook. The second problem is that, I think, the SEP is a mess in two important respects. One, it's not a consistent set of real economy and federal funds rate path forecasts; and, two, the lack of discrimination between voters and nonvoters really does create difficulty for people translating what the SEP means back to what it implies for what the Committee is actually deciding. We saw that at the last meeting, when there were six people that, in the SEP, had takeoff before the end of 2013, and people had trouble reconciling that with the "late 2014" date. And the way to get around that, of course, is to clarify the difference between voters and nonvoters. I think our goal should be to fix both of these problems, so we should be ambitious.

Now, I originally thought the best way forward on the first problem, in terms of understanding what the date rests on, was putting language in the statement that identified thresholds for the unemployment rate and inflation. But my thinking has evolved. I'm not as inclined to go in that direction, for several reasons. First, I think we found that it's hard for the statement to communicate any nuance about the choices. There are many more important parameters than just the unemployment rate and inflation, including how fast the economy is growing, what the skew in the probability distribution is around the forecast, and the permanent

or transitory nature of the shocks affecting the economy. So it's hard in a statement to really capture that nuance. The second thing I have concluded is that the date has actually worked better than I would have expected. Even though I think that it would be nice to know what the date rests on, the date has actually been fairly successful at achieving some of our objectives. Market participants don't seem particularly troubled—I don't have people knocking on my door, saying, "Where are the damn thresholds?" And, third, I think there might be a better way to communicate how the date is linked to our projections.

So let me describe what I would propose as the solution to these problems, recognizing that I'm open-minded about other solutions. This is just my take on things. The first thing in terms of fixing the SEP—I think there should be a matrix. The matrix should have 16 forecasts. I would exclude the Chairman. And it should be arrayed by voters and nonvoters. I have no view on whether it's anonymous or not anonymous. I could live either way. The only advantage of being anonymous is, even if people can figure out who the people are, you still maintain plausible deniability, if that's important to you. The second thing I would argue for is that the FOMC would vote on what it views as the consensus forecast that emerges from the SEP—in other words, the center of the distribution of these SEP forecasts. So the vote is not on what forecasts people personally favor, but represents what people think represents the center of the distribution of where the Committee stands. What I think it allows you to accomplish is, you could disagree with where the center of the distribution was, but you could actually vote affirmatively that that center of the distribution was in fact accurate. And then the third thing is, I think we really do need to do some work on showing the uncertainty around the forecast. We are pretending or implying an accuracy about our judgment about what's going to happen two or

three years out that's pretty laughable, frankly. So we need to do some work in terms of showing uncertainty.

What do I think you get out of this combination? Well, first of all, the SEP forecasts now link the real variables to the federal funds rate forecast, so you actually have a consistent set of forecasts. Second, market participants can distinguish between voters and nonvoters. And I don't think this disenfranchises nonvoters. Nonvoters still get to express their views and still communicate in the meeting. But it allows people to make that distinction, which is meaningful. Third, the Committee votes on a consensus forecast, so the SEP then becomes a tool to use to extract where the center of the distribution of the Committee is. You exclude the Chairman because his forecast is more important than anyone else's forecast. And it also gives the Chairman a little bit of flexibility to communicate about what that consensus view is during the press conference. Market participants get both the projected liftoff date and the real economic variables that accompany it in the consensus forecast. But the SEP process still exists, and it shows that there are a variety of views and there can be quite a bit of disagreement within the Committee, so you don't lose that. Now, obviously, in doing this, the logistics of the timing in terms of how you run up to the meeting would have to change. You'd have to get the Tealbook out a little bit earlier, you'd have to have a chance for people to get the SEP in, and there'd have to be a chance for the staff to make some views on, well, what the center is of the distribution of the SEP forecasts. But I think all of those things are achievable if we want to do it.

Now let me turn to the questions that were asked, because I found that the questions were a little bit more episodic, so I wanted to first present a more holistic view. The first question was, should the statements be used to link the economic outlook and its decision variables? I'm not opposed to this, but I'm sympathetic with where President Plosser is. I just think it's difficult

for the statement to carry the water that we want it to carry in that respect. When I look at the four alternatives—3.1, 3.2, 3.3, 3.4—I don't like 3.1 because "expects" seems too strong. This is not what we expect to happen; this is something that we think could happen or is likely to happen. But there's a pretty broad range of forecasts that are actually likely. In 3.2, the language "will become appropriate" seems too strong to me. I like the 3.4 language better—"currently anticipates." Alternative 3.3 is fine in terms of what it says, but it really doesn't communicate much at all about how you link the real-side variables back to the date. And 3.4, I think, is the best of the lot, but it suffers from the problem that I mentioned before of putting so much weight on just two key parameter values. And, for example, what happens if the inflation rate is 1 percent? What unemployment rate would be acceptable if inflation was 1 percent? Presumably, a somewhat lower unemployment rate than 7 percent, but we don't really tell you what the combination of tradeoffs is, so it's very incomplete.

On the second set of questions, my answers to all of the questions—2.a., 2.b., 2.c.—are yes in terms of fixing the SEP. And as I said, I'd like to use the SEP, though, to actually develop a center of the Committee's distribution with respect to our forecast.

And regarding the third question, I think the big thing we need to do is to develop some way of showing uncertainty around our forecast, because right now, we're implying precision that's going to be embarrassing for us. If you've run this out 10 years, you can imagine people saying, "Well, the Fed thought this was going to happen two years out." Imagine if we'd done this in 2007, for example—where we ended up in 2009—that would have been embarrassing. So I'd like to have a big fan chart that at least gives us a chance of incorporating some of the bad outcomes. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Let me begin by apologizing for my impolitic comments to President Evans in the previous round. I'd like to request, Mr. Chairman, that I not follow President Evans in the future. Let me also say, I'd request that President Evans not follow me. [Laughter] No, I do apologize. That was wrong of me, and I don't want to have the camaraderie around here break down.

MR. EVANS. Thank you, Jim.

MR. BULLARD. "Should the Committee's postmeeting statements be used to provide information about the links between the Committee's economic outlook and its policy decisions?" I'm going to give a very traditional answer to this question, which is no, and I'm going to reword the question like this: To what extent should the Committee write down or otherwise fully commit to its monetary policy rule? The answer is that we should not attempt to commit any further than we already have. I'll give two versions of this answer: a simple version and a models-based version. The simple version—and one that has been used, I think, in the Committee for years—is that the Committee needs to preserve flexibility and, for this reason, should not commit in an overly detailed way to possible courses of future action. And the key words there are "overly detailed." The need to preserve flexibility has long been a tenet of the Committee's policymaking and, I think, has stood the test of time. The fact is that many unexpected shocks will hit the U.S. economy in the future, as they have in the past, and Vice Chairman Dudley was just mentioning 2008–09. Many of these shocks are of a nature that would be very difficult to contemplate ahead of time. Therefore, suggesting that we commit to taking certain actions only in response to a small set of variables strikes me as imprudent, and I advise against it. So that's the simple version.

Now, from the point of view of macroeconomic models, it's true that well-constructed optimal control exercises will suggest an optimal policy rule, and that commitment to that rule would provide a fully optimal monetary policy in some model environments, and the gist of my comments here is that that's going to be very model-specific. However, I do not think that this fact should push the Committee toward attempting to make unlikely commitments in actual policymaking. Most of the contemplated optimal control exercises are in relatively simple models. In one famous example from the 1990s due to Lars Svensson, an optimal control exercise in a very simple model led to a Taylor-type policy rule as the characterization of the optimal policy. That is certainly interesting, and indeed, I do think that exercises of this type should inform the Committee on how best to proceed. Unfortunately, simple models do not match reality well, and as models become more and more complex, the policy rules suggested by the optimal control exercise also become quite complex. It becomes, in fact, impractical to delineate all the responses called for by the optimal policy rule in all the possible states of the world. For this reason, I think it makes sense to listen to the wisdom of previous Committees and not attempt to go further down this impractical path. Some may have the intuition, coming from parts of the optimal control literature, that simple rules can approximate complex rules and, therefore, we should commit to simple courses of action. That is indeed true in some models, and some around the table have done research in this area. Under certain circumstances, this is the robust rules exercise. I would regard that literature as in its infancy and not ready for us to adopt it in actual policymaking. The reality is that such a happy coincidence—that is, that the simple rule will approximate the complex rule that we don't know—is quite unlikely if we face up to the true deficiencies in the macroeconomic models as they exist today. The models are particularly weak on aspects of financial crises and financial stability that have been so important

in recent years. The models are also very weak in the sense that there is little or no concept of bubble phenomena, such as a housing bubble or a land price bubble, in most models. Other aspects—such as productivity shifts, labor market behavior, and globalization—could be modeled in a variety of ways, with differing implications for optimal policy calculations.

The uncertainty we face is profound, and it is at the model level, not at the rules level. So it's not a matter of calculating rules in different ways off the same model. It's the fact that we can't really include many of the features we'd like in a satisfactory way in our models, but that's going to affect the type of rule we'd like to commit to. Accordingly, it seems quite unlikely that a simple rule would adequately characterize the proper response in the various states of the world going forward. As a substitute, and maybe it's a poor substitute, I suggest maintaining flexibility—the tried and true strategy of past Committees.

In addition to these arguments, I want to reiterate that I do not think promises by this Committee several years in the future are credible. President Kocherlakota talked about this earlier today. The private sector can and does see that the incentives of the Committee at the date in the future when the promise begins to bite will be to deviate from the promised policy. In other words, when inflation is high and the economy is performing well, the Committee will want to raise rates regardless of any promise made several years earlier. I talked with a banker recently who had exactly this view of our current policy. He was no macroeconomist, but he described the present policy as "cheap" since it will be easy to renege on the promise in the future. His comment exactly matches the cheap-talk literature and the macro-policy games literature. Some have the view that we can be extra-resolute in making our promises and that will fix the credibility problem, but to me, the issue is that the incentives of the Committee in the

future will change, and the private sector understands that the incentives will change. So no amount of resoluteness, at this point, will alter the incentives in the future.

Turning to specific questions, on 1.b.—should we look at trying to characterize the outlook over the medium run?—I don't think, and we've already heard comments along this line, that the policy statement is a good place for this. There's just too much uncertainty about what's going to happen in the medium run. And I'm not sure we're conveying very much information, so it would be increased verbiage without much message. As for the calendar date, I've already argued today that it's confusing and should be removed. President Plosser summarized how that might be done with language from alternative C. I think that would be a fine way to do it. Then we wouldn't have to change the date or think about changing the date or have financial market speculation about changing that date. On the participants versus members, this issue is becoming increasingly tenuous around the table here because we're talking about—I think, as originally conceived, the Committee would meet, make a decision, and wait until the next meeting. But as modern ideas have infiltrated this room, it's becoming more that the policy is a sequence of promised actions over a long period of time. So really, you're asking people to support policies in the future that are being decided today. I think it's becoming increasingly tenuous to talk about, person X votes at one year and then person Y votes the next year, given the nature of the policy decisions we're trying to implement here.

On the enhancements to the SEP, 2.a. through 2.d.—first of all, I support President Kocherlakota and his memo and the suggestions there. I thought those were very good. I viewed those as simpler and more direct things that we can do about the SEP in the short term. In the longer term, I'm happy to do any of the things listed in 2.a. through 2.d., but I think it's leading inexorably to a situation where each FOMC participant will produce a full forecast and a

full rationale for policy. I'm not that sure that it's actually desirable to go in that direction. I think there were times in the past when individual Banks would put out their individual forecasts, and I'm not sure we want to go in that direction. That sounds like a mess to me. I'd be willing to go there, but I'm not sure it's desirable. I suggest instead that the United Kingdom has largely solved the problem that we're trying to solve here in a sensible way, and that we should follow their lead. The solution is to provide a quarterly assessment and outlook for the U.S. economy similar to the U.K.'s monetary policy report. To me, this is what the financial markets, and the public more generally, crave from the Fed. They want to know the basic contours of our viewpoint, and this could be conveyed in a monetary policy report. One advantage of a report of this type is that a complete picture of the outlook for the economy can be provided, including nuances about many issues of interest to financial markets and other observers. We can put in the special box on gasoline prices and so on, which I think would be really helpful, and it's the kind of thing we can't do in the SEP. Our current methods of providing information on just a few variables are not giving a full picture, nor will they ever provide a full picture along the route that we're going.

The policy aspect is very tricky about the SEP. We're all making forecasts under our own conception of the best policy going forward. This is limiting our ability. You can't, say, predict high inflation in the future or deflation in the future. You've always got to predict that inflation will come back to target because you're doing it under optimal policy. The policy aspect, I think, has been handled very well in the U.K. by incorporating the market expectations of policy at the time the report is constructed, and that works very well. That would give the monetary policy report more of the character of a true forecast, in the same spirit that other forecasts are done in the private sector, and so to me, this is a great advantage of going in this

direction. Then, as in the U. K. Monetary Policy Committee, individual members can point out where they disagree and how their assessment of the policy situation might be different, but they'd all be referring to the same benchmark that would be publicly available. And in addition, the Chairman's press briefings could coincide with the release of such a report, and the Chairman could be, let's say, the color commentator on the report. Okay. Thanks very much.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. As we think about additional steps in our communication strategy, we need to keep in mind what we're trying to achieve. The goal is to improve the transparency of decisionmaking so that the public understands the likely path of monetary policy, and why that path has been chosen, without reducing the quality of the deliberative process. One way of doing this would be to provide a consensus forecast and a consensus path for monetary policy based on that forecast. However, reaching such a consensus does not seem practical given the size of the Committee and the diversity in our views of how best to forecast the economy and of the appropriate monetary policy given that forecast. In fact, given the uncertainties in understanding the economy and the effect of monetary policy, I think the diversity of views expressed around the table is a strength of our system. Trying to force consensus around a forecast might hurt, rather than help, the deliberative process. While a consensus forecast may not be practical or desirable, explicitly linking individual policy paths and economic outlooks would allow the public to better interpret individual forecasts. In addition, if the identity of the participant is provided, the public will know which projections correspond to voters and which to nonvoters, a distinction that is important for forecasting the likely policy actions of the Committee. Thus, I am in favor of releasing the full matrix of projections to the public and identifying the individual associated with each of the projections.

With such information, the likely path of policy and the degree of consensus concerning the forecast and policy will be revealed to the public. Views on the forecast or appropriate policy that differ from the central tendency would be more transparently revealed, helping the public to assess the degree of uncertainty and disagreement around the monetary policy path. Another benefit of identifying the participant's forecast and monetary policy path would be to hold each of us accountable for our projections. Over time, I would expect economists to evaluate the quality of our individual forecasts and our implicit reaction functions.

In terms of paragraph 3, we should move away from calendar dates but be specific about economic outcomes that we expect would result in a significant change in policy. My preference would be a statement like 3.4, where we provide specific triggers for exiting the zero bound but also make clear that additional accommodation would be appropriate if we do not make sufficient progress toward both elements of our mandate. Complemented by such guidance, the SEP will provide sufficient information on when people expect to hit the trigger such that we would no longer need a specific date in the statement. My second choice would be paragraph 3.2, but I would again omit the date. I would not be supportive of paragraph 3.3, which does not provide specific guidance to the public. If we cannot reach a consensus around economic triggers, we should continue to use forward guidance with calendar dates because it has proven to be a surprisingly useful way to provide greater clarity on our likely path that has had a meaningful impact on medium- and long-term interest rates. While I am not opposed to disclosing alternative scenarios, that seems like an action that can be considered over time. We've been making a variety of changes to our communication strategy, and we may want to consider the marginal benefit of additional disclosures. I am reminded when I refinance my mortgage that excessive disclosures may be less useful than targeted disclosures. It may be

worthwhile for the communications subcommittee to consider at what point we reach diminishing returns from additional disclosures. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I think it's obvious already that there are a lot of moving parts here, and the questions and the subquestions reflect that. So to be selective today, I'd like to make four points in overview, and then I'll elaborate further on some of them and comment on the specifics of the language that was put in the appendix. The four points are, first, I think we have a lack of clear consensus regarding the role of the SEP; second, I believe, as has already been stated by one or more, that it's desirable to get away from date guidance; third, there are complications introduced by elevating the role of the SEP, which I think we already have in policy communications, given that the current practice is that we publish them only four times a year and we have eight meetings a year; and, fourth, it's desirable that the specifics of any economic conditionality be durable. So let me make a few more points—not exhaustive—partly in elaboration of those and some other points.

As I said, I think there's a lack of consensus regarding the role of the SEP practice, and maybe it would be good for the group to step back and have a discussion on this before implementing any further changes. My own view is that the SEP provides background color and texture that supplement the postmeeting statement and the minutes. The SEP provides a broad sense of how the FOMC participants as a group are connecting the dots between desired economic outcomes and policy. If we're trying to convey in general terms how future Committees might react to economic conditions, one could argue that using the SEP is a more inclusive way of doing that. But at the same time, I would argue that the SEP should not substitute for actionable, consensus-based votes of the Committee. I am a little reluctant to go

down the road of providing information in the SEP at an individual level. I don't think it's healthy to encourage the public or Fed watchers to indulge in what I call FOMC Kremlinology. I do think an idea worth considering, if we want to add a bit more information to get closer to the constitution of the current Committee, would be to show who are permanent members and who are revolving members, but not necessarily just focus on the current Committee. After all, in any given calendar year, the value of distinguishing between voters and nonvoters degrades as you get closer to year-end.

Now, on the specific question related to the statement, as I expressed in the policy round, I see forward guidance in terms of a calendar date as likely to be a problem going forward, and at a minimum, I would suggest downplaying the date of liftoff by stating the economic conditionality first and putting focus on the conditionality language if we hold to that language. I do accept that using the statement to provide more information on the Committee's reaction function and policy conditionality could be helpful and could deliver some incremental stimulus, and I would strongly prefer that any language that is added to accomplish this observe the principle of policy decisions being outlook based or forecast based. I'd also favor words that add some flexibility to deal with the notional reliance on a single indicator for mandate consistency—for example, the unemployment rate.

So, following from those points, I actually prefer alternative 3.1 in the appendix. I think it qualifies the quantitative thresholds with the word "nearing" that suggests a forecast-based discipline. The phrase "medium-term inflation outlook" does this as well. A focus on the unemployment rate could be problematic, as I've already suggested, in that changing labor force participation could keep the unemployment rate elevated even while there is robust employment growth. So the phrase "including the pace of improvement in labor market conditions" helps

with this problem. I like 3.1 because it's simple and concise. To me, 3.2 adds complexity, although I would say the use of a reference to inflation expectations is helpful. It is, in my mind, covered by the expression "medium-term inflation outlook" in 3.1. Alternative 3.3 strikes me as a restatement of the balanced-approach policy principle, and 3.4 lengthens the statement and adds more complexity than I think is advisable.

Regarding the quantitative thresholds themselves, the levels should be chosen with the intent that they be durable and therefore constrain to some degree next year's and the following year's voting Committee. So I think the numerical thresholds have to be decided with the full deliberation involving all participants using techniques like straw votes to determine whether a consensus actually exists, and then that can be voted on by the Committee. Today, we're not really deliberating on the specifics, but I do want to mention that, as regards the unemployment threshold in alternative 3.1, I would err on the side of something higher than 7 percent, given all of the imprecision around questions like the level at which the unemployment rate would begin to generate inflation pressures and the speed at which pressures might develop. Also, perhaps alternatively, I would change "close to or somewhat below" to simply "close to."

Finally, on the question of a consensus forecast, I think President Rosengren suggested the same thing. It strikes me as a painful process and not, in the end, all that productive. I think the SEP can and should be used to provide the public with a sense of all the views at the table that inform the deliberations of the formal voting Committee, and the forecast information in the SEP, if fully fleshed out, can suffice to give this sense of what the consensus is. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. The discussion so far reminds me quite a bit of our family discussions at home over what to have for dinner. Typically, it revolves around two issues. One is, no one is happy with the food choices we have in the house. Second is, everybody is very hungry. So we debate: Should it be Italian, Thai food, seafood, whatever? And in the end, we go to the food court and everybody gets their own. [Laughter]

Over the past few years, this Committee has steadily improved our communication with economic and monetary policy outlooks. We've made a lot of progress. We've identified the food court. I think we can do more to illuminate the connection between the two, between the economic and monetary policy outlooks—that is, to communicate our reaction function. And here, I'm following up on what President Plosser said. I think that really is our main goal, and the FOMC statement can certainly do better in this regard. Actually, I view paragraphs 3.1 or 3.2 or 3.4—any of them—as being improvements over what we're currently doing. Now, in keeping with past statements, any discussion should be concise and convey only the most important points. If we try to convey too many nuances, the key points will get lost.

Among the alternatives of paragraph 3, I have a slight preference for version 3.1, which provides, to me, the right amount and kind of information. Notably, I do think the statement should still provide a policy liftoff date, and that date should evolve as the outlook changes. In contrast, the economic conditions projected to hold at the time of liftoff will likely remain relatively stable. Also, given the relative stability of the economic conditions at liftoff versus the liftoff date, I would move the calendar date to the end of paragraph 3 after laying out the economic conditions that underlie the policy, which I think President Lockhart mentioned. I don't see the advantage to providing additional forecast detail over the medium run in the statement as illustrated in the alternative language for paragraph 3.2, shown on page 5 of the

handout. Again, I think the focus of our statement is not on the forecast per se, but on the relationship between the outlook and the policy decision.

The SEP can also help align the public's expectations with our own expectations and reduce uncertainty about the future path of policy, and I do believe that over time, as our forecasts for economic activity, inflation, and the funds rate evolve, the public will get a better picture of the state-contingent nature of our policy reaction function. Further enhancements could be made to the SEP to speed that process along. Now, we are doing a very good job of portraying the dispersion in the views of the participants, so I don't think we need to go further in that direction. And I am, because of that, somewhat nervous about the idea of publishing the full matrix of the participants, because, again, it would highlight more of the dispersion. I think what we need to do, and this follows on a number of comments that people have made, is now provide clearer views on what the consensus of the Committee is, and we could do a better job of describing the central view of the participants. In a perfect world, we would all agree on a Committee forecast and publish that, as the Bank of England does. That is best practice in many ways. But until we reach this forecast nirvana, a useful intermediate step would be to highlight something closer to the central view of the participants already. And I believe that President Plosser already mentioned this idea, but we've been thinking about this quite a bit, and that is, we could take a page from surveys of private-sector forecasts, such as the SPF or the Blue Chip. Their press releases focus on the median forecast for a few key aggregates. Now, the median has some desirable statistical properties. It's a very good summary statistic of the distribution, a good summary statistic of the center of the Committee, and it's relatively insensitive to outliers. In particular, it would be useful for the SEP table 1 to include the medians of all the projections, including the economic variables and the funds rate. As it stands, until the minutes are released,

market participants summarize the Committee's forecast by computing the midpoint of the central tendency. Publishing the medians of the economic and interest rate projections just before the Chairman's press conference would help focus attention on the central view of the participants, which could help, I think, clarify our message.

Finally, again, a point that's already been made—it would be useful for the SEP to include more information about uncertainty. In particular, I think it would be useful for the SEP to start including uncertainty intervals for the funds rate, just as it does for other economic variables. Table 2 in the SEP summarizes the historical accuracy of forecasts for GDP growth, unemployment, and inflation, but it doesn't do so for the funds rate, even though short-term interest rate forecasts are subject to considerable uncertainty, as we've already discussed. Adding these confidence ranges would reinforce the notion that our outlook for the future path of the funds rate is not an exogenous commitment but depends on how economic conditions evolve. In other words, it's state contingent. Thank you.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I approach this discussion this afternoon more from the perspective of, where are we today, and what does the "2014" language mean, and how might we deal with that? I think the questions were largely about that, at any rate. And as I thought about this, it seems to me that if we try to clarify beyond the calendar date, we need to keep in mind a principle, which is, this is a communications issue, and "late 2014" was a particular policy judgment of the Committee, and so I think we would want to resolve this in order to keep the level of forward accommodation unchanged. That is, the hard decisions that were taken in August and January imparted some type of forward indication about policy, and however we decide to resolve it, we ought to maintain that status quo. If we didn't, then it would

be a tightening, presumably, if we were to somehow weaken the language. And of course, that could be the policy choice, but that's a policy choice as opposed to a communications issue. Because of that, as I looked at the suggestions that had different economic thresholds, of course, not all of the numbers corresponded to numbers that I personally would like, and that's part of what this principle is about. I had in mind something more accommodative than just "late 2014," so I would have to back off of that, too, and everybody would have to focus on what this means.

The question is, what does this mean? As I read the policy memos that were circulated before this meeting, either they talked about it this way or I just started thinking about it myself. I think part of the issue is like this. Let's suppose we could be put into three different buckets, right? There are three different interest rate rules that we subscribe to. So I don't think it's outside of people's imagination that President Plosser would have a particular interest rate rule, I would have a particular interest rate rule, and somebody else has an interest rate rule that's somewhere in between us. According to public commentary, we each have indicated that one of us would like an earlier takeoff than late 2014, and I would like something even later than that, and then presumably, the middle-road person likes the core decision, which is consistent with this "no earlier than late 2014." Well, a forecast—your economic forecast, your inflation conditions—we're going to run it through those rules, and they would indicate a liftoff at different points. The key is, how do we describe the liftoff for that core decision as of last August and in January? I think that's how we would want to think about it. So my 7–3 numbers for unemployment and inflation wouldn't work, but in thinking about the way it was labeled, I thought these 7–2 numbers, with the right emphasis on medium term, were probably what the FOMC decision was about. I think ultimately, that's a judgment that a larger number of people would have to come to, but that's how I thought about that.

So in terms of the particular examples of language that were put in front of us, I tended to agree with Governor Yellen's choices on so many of them. I think that alternative 3.4, which allowed for further easing, was a good option to include in that type of language. I thought melding in some of the language from 3.2 could work, too. I especially liked that the inflation characterization was with a medium-term orientation. That's in keeping with how we think about our dual mandate responsibilities—that 2 percent is not a ceiling—so we should be willing to perhaps go over that if it were consistent with the way things were performing. More generally, we still have to clarify our tolerance for ranges above and below our objectives as we put that into our policy statement, but that's something we need to do.

I think that keeping the calendar date in these statements is quite helpful. And what else? One thing—on the SEP, I think that publishing the matrix of forecasts could be acceptable. I'm fine with that. That solves this issue that we ran into in January where the FOMC statement said one thing—that's the governance of the Committee—but the 17 SEP forecasts said something different. I think we have to add some type of clarity to that. If we identify the forecasts, that would certainly do it.

Some have mentioned that we don't want to load too much on the policy statement. This is a type of comment that we hear periodically, or we might all subscribe to at some point. I don't know what the alternative is to the policy statement. I don't know what the practical alternative is. We need a vehicle to describe the actions that the Committee has taken, and if we're reluctant to describe something, it takes policy tools off the table if we can't describe it. If the Committee were willing to cede this communications tool to the Chairman through his speeches or a longer statement after the meeting, that's worthy of consideration. I can see a lot of merit in that, but that would be a very different type of monetary policy committee. So I

believe we ultimately have to think about this. The FOMC statement under our current Committee governance is our best joint collaborative effort, and that's important to maintain.

I suppose, lastly, regarding the discussion about optimal commitment, that there are some very good points about this, and my own staff has pressed me hard on this issue. It's optimal policy if I commit to it, but commitment is all in, and how do you convince people of that? That is a real-world issue that we need to think about, but I'm reluctant, if not loath, to cede the opportunity to improve upon what we can do for the economy and inflation more generally without at least thinking about policy rules that might be implementable in some fashion. I think that's where the nominal income targeting rules might be able to replicate some of that because, once you highlight them, writ large, it would be very embarrassing if we were to back off. The thresholds that I've talked about before have that element as well. I believe it's worth a lot of work, at least, to think about what efforts we might do to build up the credibility of these actions, but I certainly recognize how difficult they are. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I support the idea of communicating more about how the Committee's outlook affects its policy decisions, and I'd like to think that we can find a way before too long to provide more conditions-based guidance than date-based guidance. In principle, including inflation and unemployment thresholds would have an advantage over using a date. Our discussions this morning illustrated the many pitfalls of using a date. Also, we may have more agreement on the conditions for a move, even though we may disagree on the timing. This is especially true if the main source of our disagreement is about the pace of the recovery in our outlooks. In practice, however, we appear to disagree on what we regard as the appropriate reaction function to the outlook, and it is this difference that poses the strongest

challenge for reaching agreement on thresholds. When my staff examined the recent SEP projections for appropriate policy and our projections for the economy, their analysis indicated that a large part of the difference in the takeoff date could be attributed to differences in what we submitted for our long-run unemployment rate. With considerable dispersion in our views of such a fundamental variable, which is a key input tool of the Taylor rule, it could be hard to come up with a statement regarding an unemployment threshold that accurately summarizes the range of the Committee's views and provides simple and clear guidance to the public. I worry, however, that if we find it hard to come up with compromise wording that accounts for differences in our longer-run unemployment rates and other differences in our views on appropriate policy, it would likely be too complicated to still be informative.

I totally agree with Governor Yellen's comments earlier about clarity versus transparency. So I have a preference for a straightforward statement, and quantitative thresholds would be the most straightforward. But again, if we could legitimately form a consensus around a straightforward statement, such as paragraph 3.1 in part B, I could support it. I do worry, as we've been talking this afternoon, that consensus around this simple phrasing would be hard to achieve. For example, I estimate my long-run unemployment rate at 6 percent, and so I would be more comfortable with an unemployment threshold of 7½ percent. However, I could accept close to 7 percent, with the phrase that was included in the language of B.3.1 that talked about the pace of improvement in labor markets. So I would be more comfortable with a straightforward, clearer statement, but given the difficulty that we're hearing about reaching a consensus, I would be willing to support some qualitative language as long as we have more assurance that the qualitative language would provide clarity. Again, after listening to this afternoon's discussions, I know that is a huge challenge, but I'm confident that the subcommittee

on communications is up to this challenge. I want us to avoid making still more changes to our communications that could be hard for the public to interpret. In my view, there is a lot to be said for waiting and letting the public digest our recent changes and for us to better understand the strengths and weaknesses of further communications changes in our policies before we enact further enhancements.

So with that said, I do like the idea of incorporating some medium-term language in paragraph 2. The current language that we use is too short-term focused. Paragraph 2 of alternative C is about right in length, and it leaves further details to the SEP or the Chairman's press conferences. Regarding other enhancements that are listed or suggested by question 3, I think they are all good ideas worth considering. I'd like to have more analysis about what we think the strengths and weaknesses of each of these ideas would be. What would we be hoping to accomplish with each of these ideas? So I'd be open to more discussion about these various ideas, but I'm not ready today to select any specific proposal. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. Given the comments that have been made to this point, I'm going to set aside my formal comments and just react to a couple of things. One is, given the changes that we've made so far in our communication strategy, I have been leaning toward the comments that President Pianalto made about letting things sit a while in terms of what we've already put out there and being very cautious in making further changes given the short amount of time in which we've made what I think are important changes here. Regarding the connection between the outlook and the policy, as I looked at the questions, I really was drawn to the comment that Governor Yellen made about trying to be careful between transparency and clarity. And so as I looked more at what would be clearer, then you get drawn

to things like thresholds or things that seem more specific. I could not satisfy myself, as I looked at the "more specifics," that they really took into account the full range of things that we think about, which is what makes this difficult to come to terms with—balancing the flexibility that President Bullard talked about with trying to be clearer to the public about what we're doing. And in that sense, I go back to the document on the longer-run goals and strategy, which laid out—albeit not in very specific terms, but clearer than I think we had been—what it is we are looking at in terms of our objectives. So I'm satisfied with that piece, at least for the time being.

As it relates to the SEP, I also have mixed feelings there. I don't know if I'd go as far as Vice Chairman Dudley in saying it's a mess, but it might be close. That said, I think we should not put too much on those projections, too. Now that we've put them out there, it's fair for the public to look at that as being background to a range of views. I think we should be careful that they not get in the way of the responsibility of the Committee to come to a decision. And so looking at those in the context of focusing on their central tendency might be the best we can do in the near term. Thank you.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. As President George just said, a lot has been said already. I'm going to make the mistake of abandoning what I had written up and try to be more reactive. So let me start by talking about the contents of what should be in the FOMC statement. I thought of what was in 3.3 as being a lowest common denominator, and this gets at what President Plosser was saying as well. I think about the things we always talk about as being important variables for consideration inside the FOMC statement. We talk about inflation, inflation expectations, and resource utilization. I don't know if we're always as clear as we should be that what concerns us, really, is the outlook for those variables because of the

fact that we think of monetary policy operating with a lag—that's something that President Lockhart emphasized. I don't think that we're as careful right now in the statement about explaining our actions and inactions in terms of our outlook for inflation and resource utilization and the perceived state of inflation expectations. It doesn't mean we always act just based on that outlook, of course. We might deviate from that for reasons that Vice Chairman Dudley talked about in terms of financial market conditions, et cetera, but I think we have to be pretty explicit about why we are deviating from those variables. Now, I mean to be quite verbal in what I'm saying here. I'm not talking about explicit numbers, but more trying to say, here are the things we care about: inflation, resource utilization, and inflation expectations. In particular, in terms of inflation and resource utilization, it's an outlook—I would say a near-term outlook—something like 18 to 24 months. And we should be able to explain, when we don't move and when we move, why we're doing that—because of changes in this and that—and if we can't do that, if there's something else, we should be articulate about that. I don't think our statement right now gets this right at even a verbal level, and so jumping suddenly to being explicit about numbers we're going to be putting in—I don't think we're ready for that, because, as I said, we don't even have the verbal part as right as I would like to see.

In terms of putting numbers in the statement, I will say, I'm a math formula guy—I love it. But whenever I talk to somebody who's not an economist, they're much more skeptical about the utility of this. People who are not in the Economic Research Department but are involved in discussions in our FOMC process are very skeptical about, "Can you really distinguish what that 7 percent means? Is that really what the NAIRU is now for the Committee?" I think numbers are harder to communicate about than we might think. I'm absolutely not trying to close the door on that totally, but I think we have to recognize where we are now, which is, we don't even

really have a description of a reaction function at a verbal level in the statement. We have to get that right, and then we can talk about putting numbers into the statement. In the interim, I think we're going to have to have a date. I dissented in August, when the date was first adopted, but it was not about the inclusion of the date. It was about the time of the date, the actual date itself. A date is a very reasonable thing for people to want to know and for us to offer guidance about in our statement at the zero lower bound. That's what they want to know; I think that's what we should be trying to communicate about.

One of the things we should be clear about is, are we trying to be stimulative, or are we trying to forecast? So in January, the Committee said that they were expecting to keep rates low, that conditions would warrant keeping rates low through late 2014. Did that mean the Committee thought, boy, the recovery is much worse than we thought? Or did that mean the Committee—now that January is the first meeting of a new year and we've got a new composition of the Committee—has decided to be much more stimulative? Being clear about that is pretty important in terms of what you're trying to accomplish with policy. Rather than working on trying to get thresholds right or the right numbers to put in, I think that trying to get language to be clearer about what's stimulus and what's projection would be very useful.

That said, as I say, I'm a math guy. So I like the idea of having something about reaction functions. One way to think about this, maybe, is in terms of the scenario analysis that's done in the Tealbook A, and something like this could be done in the minutes—what's the benchmark scenario? What kinds of other scenarios—maybe three or four other things—are out there? How does the Committee think about responding to that? The minutes I like. It gives a little richer context, and it has the advantage of being voted on by the Committee. And all the participants get to contribute, as we all have, their views about what the minutes should include.

So I think there's a way to use the minutes to talk about our reaction function in terms of how we're going to respond to some benchmark scenarios and other ones.

So I've talked through question 1. Let me talk about question 2 at this point. I think the SEP is structurally flawed as a vehicle of communicating information about any aspect of policy. Governor Yellen said this better than I'm going to say it now, but I'll end up repeating some of the things she said. Monetary policy is being made by the Federal Open Market Committee operating as a collective, not through surveys. It's not a survey process of the views of the Committee participants, nor is it a survey of Committee members. So I'm negative about question 2.a.; questions 2.b. and 2.c. make some logical sense, I agree, but President George and President Pianalto have hit on some good things about them—maybe we should wait. But beyond that, I don't want the SEP to have any more importance than it already does. I think it's already viewed as being too important by the public, and any further changes along the lines of 2.b. and 2.c. will only inflate what I view as a false importance. In contrast, in my memo last week, I described where we could make some wording changes to the SEP to be a little clearer about its content. We're not making forecasts. We're each running our own optimal control simulations using our own internal model. I find that whenever I explain clearly to people what is in the SEP, they don't take it as seriously anymore. I explain it as follows: I'm asked, if I was in charge of monetary policy, what would I do? Everyone recognizes that I am not likely to be put in charge of monetary policy. [Laughter] And when they realize this, the SEP has not as much content. I think we should be clear that that's what we're actually asking. And we're all, of course, using our own model, not some kind of collective model. So I'm optimistic that my proposed clarifications in the memo will mitigate the risk of the public's making the mistake of treating the SEP as an instrument of policy.

Now let me turn to the final question, question 3. President Lockhart said this earlier, and I think if we talked about this, we would find that we would agree that the evolution of policy should be explained in terms of the outlook—the outlook for utilization and the outlook for inflation. I think that suggests that we have to find a way to build a consensus forecast. This has been dismissed as an impossibility because we have too many people around the table. I'll say a couple of things about that. The first point sounds like something President Evans would say, but bear with me.

MR. EVANS. I'm expecting something good here. [Laughter]

MR. KOCHERLAKOTA. If we think that having a consensus forecast, as opposed to the heterogeneous mess that is the SEP, might save 2,000 jobs—you can imagine that providing more clarity about policy would be able to do that. If you look at recent estimates of the stimulus, the optimistic view is that jobs cost about $100,000 per job. So saving 2,000 jobs is $200 million. I think we should be able to spend the time to get that right, and 2,000 jobs across the country is not that much.

Now, with that said, I also think it's pretty feasible, so let me talk about why I say that. If you were to say to me, let's write a consensus statement about monetary policy with 17 people in the room, and let's start from scratch, you wouldn't get anywhere, right? How do we get around that problem? We achieve that consensus on our written statement by focusing our discussion on a rather limited array of choices, and I think the same would work with devising a consensus outlook. So what do we focus on? There have been suggestions about using a median from the SEP. I think there is some validity to that. We could have some kind of survey process that would start with that as some information gathering, but my basic idea is more to link forecasts to the statements. At each FOMC meeting, the staff prepares three alternative statements. For

each statement, you could simply append a near-term forecast for the relevant variables that's reasonably associated with those statements—basically a mathematical version of paragraph 1 of alternatives A, B and C. Alternative A would typically be a weak outlook, B a middle outlook, and C a strong one. When you voted for a statement, you'd be voting for the associated forecast, just as voting for an alternative is the same as voting for the associated monetary policy directive. There are some logistical issues here about how to do this, how to get the information to the staff to allow them to do a good job on this—and Vice Chairman Dudley talked about this as well—but I think there are ways around this. Basically, if you do an SEP maybe 10 days before the meeting, you can start to get the right kind of information to the staff. You can combine that with the Tealbook A kinds of forecasts out of FRB/US. I do not think this is an impossibility by any means. Essentially, a forecast for the relevant variables has a relatively small number of dimensions compared with the words we have to issue at each meeting.

So I think I've covered all the questions. I think we should work toward a consensus forecast, and that would greatly improve our communications. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher, is that a two-handed intervention?

MR. FISHER. No, sir. I apologize. I have to leave at 4:00 p.m.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. I just have a clarifying question. We have these three choices, which I think are interesting, but the question I have is, are you agreeing with the forecast associated with the three choices or the reaction function associated with those three choices?

MR. KOCHERLAKOTA. I'm only proposing the forecast. That was the only thing I was going to describe—not a reaction function.

VICE CHAIRMAN DUDLEY. Okay.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. I was thinking of your comment about, you were asked if you were in charge of foreign policy; my old thing—monetary policy.

MR. KOCHERLAKOTA. Foreign policy is even scarier, actually.

MR. FISHER. Yes, foreign policy is even scarier. And I was asked the other day what I would do if I were king, and I said that I'd abdicate immediately. Mr. Chairman, I think yours is the hardest position of all, particularly given the nature of our group.

I'm kind of a "hard nut to crack" here because I think Jim said it very well. That is, models drive the rule. We live in a world where everything has been challenged, and I have said a lot of times publicly and privately that there are certain near shibboleths given globalization, cyberization, and so on: the Phillips curve; efficient markets, which I don't believe in. We heard a lot of discussion about Okun's law—how it's been challenged. What is a NAIRU in a globalized world? There are all kinds of things that we really don't know and are struggling with. So as much as I like the simplicity of a rule, I think it's very hard to come up with. We started with Governor Yellen using a corporate analogy. What I learned in the corporate world is, it's not what you say; it's what you do. You deliver or not, and you get into trouble when you say too much.

President Pianalto and President George made a good point—and I just heard Narayana pretty much say the same thing. We've done an awful lot. We've made a significant amount of progress. As Governor Yellen said, you can't substitute transparency for clarity, but we are

communicating a great deal more. I'd like to digest that first. I do think that we run a risk of painting ourselves into a corner by getting more and more specific with regard to forecasting. After all, the further out you go, the more likely you are to make mistakes.

I'm initially averse to separating voting members from nonvoting members, but if you want to emphasize voting members, fine, because you're going to be as likely to make mistakes, and therefore you'll be highlighted as opposed to the nonvoting members. But I obviously, seriously, would not differentiate between them because, as President Lockhart pointed out exactly correctly, over time that value fades as you get closer toward the end of the year, and the nonvoting members will be the ones who will rotate into positions in the future.

With regard to the options that were provided, even though I would like to come up with a specific formula, I'm in favor of 3.3—I think that's what it was—because those are the factors that we do consider. We made a very important statement of policy strategy, Mr. Chairman. I think it's the most important thing we've done in the six years that I've been here—I think it's been six years—and that is our long-term strategic goal. We made it clear that we could not—even though we would like to, in light of our dual mandate—quantify, because of "nonmonetary factors," a specific unemployment rate, whereas we acknowledged that, for the most part, inflation is a monetary phenomenon, and we stated a longer-term goal. President Evans is correct—it's not a ceiling, but it's our longer-term goal of 2 percent. I don't think I could personally support the specific numbers that are given in the other options—other than 3.3, which has no specific number whatsoever.

I worry that we are painting ourselves further into a corner and getting into a deeper mare's nest the more specific we try to get in terms of our explanation of what we're doing, as much as I would like simplicity. I want to get back to the practical. At some point, we're going

to try to figure out a way, if the economy continues to improve, to get away from the specific phraseology we currently have. I was in favor of something that is more state contingent and less time contingent. I was against "2014," because I didn't think it was a good principle, and I was also uncomfortable with the specific date. So even before reading what was sent out here, I was trying to think of how we would move phrases if the economy were to improve away from "2014." And here's what I had written, which is why I come to 3.3. I would have kept it as it now says—"funds rate at least through" or until "late 2014"—and I would have appended "If the economy continues to improve, the Committee may move the date forward and become less accommodative. Conversely, if incoming data indicate weakening of the economy, accommodation may be maintained or extended." That's about all we can say, and we are deluding ourselves by trying to be specific.

I was a little concerned during the conversation in the go-rounds earlier and even while reading the very good staff papers, which are superb and really do condition our thinking and my thinking. The thought of moving something three months forward or six months forward—I don't think we have the knowledge to be that specific, and I also think we put ourselves into a trap. What do we do next? What do we do next? What do we do next? There's an artificial specificity driven by the fact that we would like to have a simple rule. The trouble is that the simple rules are very difficult to come up with in the complicated world in which we live. I do think it's important to lay out what our parameters are. I think we do that now. Your press conference is very important. I was on the subcommittee that pushed for that. The value of the SEP—questionable. Beyond one quarter, personally I take it with a gigantic grain of salt because it's guesswork. But outlining the fact that these are the things that we consider, and

reiterating them as we do in 3.3 in this example given to us by the staff, is helpful and is probably the limit to what we can do under current conditions. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I said a bit about communication this morning, so I'll try to be brief. First, there's a good reason this is hard. At Committee meetings where you're just deciding on the funds rate, you just decide. When you're looking forward and you're talking about the future, you're talking about a bunch of states of the world, and waiting until you just have one to deal with is always going to be easier—waiting until you know what next June is going to look like. So it's just bound to be hard.

We should understand collectively what we mean before we publish it. That's pretty simple, but it's easy to lose sight of, and I think we did that in January and, to some extent, last August. I think we left the room with different interpretations of whether we were making a commitment or not, and we need to sort that out. A lesson I've learned just from today's discussion is that it would be useful to think through contingencies—have the staff help us think through, all right, what if this happens? What if the data come in this way over the next couple of quarters? How does this language evolve then? Is it going to be graceful to turn it in this direction or that direction? We've been focused on trying to make the language easier. Your point was a good one, Mr. Chairman. Yes, for us to adopt President Williams's suggestion is a turn in the other direction; we haven't really thought through what a turn is going to look like. I don't think it's reasonable or practical—this is a corollary—to do more than we can agree on, to say more than we can agree on. And we did this with the exit strategy—we got a workable consensus—and then with the consensus statement. We worked really hard, we left out stuff we couldn't agree on, and we included everything we could agree on—a lowest-common-

denominator approach. I think a lot of the alternatives I see here, in specificity, go beyond, theoretically, what would be part of a reasonable consensus here.

I want to say a word about commitment. I've heard President Kocherlakota make some seemingly nihilistic statements about the inability of the Committee to commit future Committees. And I don't think a black-and-white view of that is correct. I think we are committed. We have been committed. We have renewed the commitment made by Chairman Volcker to keep inflation low and stable. We've renewed that every time we've responded to mini inflation scares, and thankfully, we don't get many anymore. It was our experience in the 1980s and 1990s to respond to those in ways that were detrimental to our objectives in the very short run, to the extent that they required tightening rates in order to fulfill that commitment. So I think President Kocherlakota is right—you have to ask the question; if we're going to commit ourselves, don't there have to be incentives? And I think the incentives are well in line there for us to live up to that implicit commitment, but complicated, contingent, reaction-function kinds of commitments are going to be harder for us to live up to. It's going to take longer to falsify or verify whether we're complying with it, so I think that's going to be hard.

About the FOMC versus the SEP—this is related to commitment. It's one thing for the Committee to vote on a rate change today. But to vote on policy three years from now—for this Committee—it's in rotation, the membership is going to change in three years. That suggests something more like the approach you used, Mr. Chairman, for the exit strategy and the consensus statement, which were meant to bind future voting members of the Committee to some extent. You developed a broad consensus among all participants. They were meant to last long enough to live through various rotations of memberships—maybe not bind in a legal sense, but to be a lasting agreement in the Committee.

So when I think about communication, I'm not sure there's much more we can do. When I think about what we can agree on, and then think about what value is going to be added, I'm skeptical that we can save—I don't know, did President Kocherlakota say 200,000 jobs?

MR. KOCHERLAKOTA. No, 2,000 jobs.

MR. LACKER. Two thousand jobs? Is that, like, Fed watchers put out of work—[laughter]—or how does that work? We can talk about this offline. But think about the third chart in exhibit 1 that our Manager showed us this morning. And it showed this little slope that primary dealers have in mind that the unemployment rate that's going to trigger an exit differs depending on the inflation rate. I think if you asked them the questions about our reaction function, qualitatively market participants would get it generally right—that if growth picks up, we're going to exit earlier, and if growth is slow, we're going to exit later. The understanding of the public and financial markets is pretty good, is pretty close to what we can agree with. I think the distance between what we can manage to agree on here and what the public understands is minimal. So, look at an example. A lot of these have the unemployment rate as a threshold or trigger, but there are a lot of policy rules and models where the right thing to do is to respond to economic growth. As you know, the core of all the models we use is this growth model where the real rate depends on the growth rate, not the level of some resource utilization. So there's an argument that you could put GDP growth at 4 percent or something in there equally as plausibly. And I agree with President Bullard—there's enough uncertainty about the model we ought to be using, or the policy reaction function that best corresponds to optimal policy, that we're going to have a hard time getting very much further. A simple qualitative characterization, like 3.3, is, I think, all we ought to aspire to. But even then, the use of the words "resource slack" is going to divide us. There are going to be differences of views about whether that's a reasonable thing. I

understand that everything is estimated with imprecision, but something about which people can think it's between 0 and 6 percent might be of limited usefulness for us in this setting.

Let me just close by pointing out what we've accomplished in the last year—press conferences, the exit strategy statement, the consensus statement. The exit strategy statement was designed to achieve something. It was designed to move public understanding in a certain way. It was designed to say, "Hey, we've got a plan," and I think that was very effective. The "2013" language—maybe things are worse than we think, or we're more dovish than you're going to think. It was designed to convey one of those two. It was designed to push down the yield curve, and I think it's done that. The Vice Chairman is right about that. If this is a journey, I think we should be looking for a rest area. [Laughter] I hope it has a nice food court for President Williams and his family—maybe South of the Border or something. But I think we've achieved a lot, and a great legacy has been left from what we've done now. We need to wrestle with what we've got. I don't think we fully understand what we have. That's the lesson from this morning.

CHAIRMAN BERNANKE. Thank you very much. President Kocherlakota.

MR. KOCHERLAKOTA. I have to defend myself against the charge of being a nihilist. [Laughter] I used the word "commitment" overly broadly, President Lacker. I was only referring to the specific issue of commitment—a lot of the policies that would be beneficial in the current environment involve having a relatively higher-than-target rate of inflation along with a low rate of unemployment in the later part of the decade.

MR. LACKER. Right.

MR. KOCHERLAKOTA. And that's the kind of commitment I was questioning as being difficult to carry out.

MR. LACKER. If I could respond, Mr. Chairman—the way I'd put it is, that's a commitment that you'd question the credibility of. You'd question the credibility of that commitment.

MR. KOCHERLAKOTA. Thank you.

CHAIRMAN BERNANKE. I would insert that credibility is not a 0/1 variable. The facts show that we've had effects on rates out for a couple of years—now, maybe not 10 years, but maybe 2 years. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I think I'm going to largely agree with President Lacker. For the life of me, I'm having a hard time figuring out what problem it is we're actually trying to solve. The first thing—is there some agreement we've reached that we think we need to communicate to the public that we haven't? I just don't sense that there's that level of agreement out there that we need, in the interest of transparency, to communicate. And then the second thing is, I don't see that there's a level of confusion in the marketplace that necessitates us communicating something. And I would go to the same panel 3 that President Lacker referenced in Brian's presentation. It looks to me as though the market understands there's a tradeoff between unemployment and inflation rates. And when we published what we published, they moved down their expectations, but it seems to me that they heard us. The new line, the March 2012 line, doesn't look terribly different than what's attempted to be described in a lot of these attachments.

Furthermore, if you go to panel 2, which is the distribution of the first increase in the target fed funds rate, it gives me some information. It tells me when a group of dealers think that liftoff would be. And it gives me an idea of what the move has been over the last intermeeting period. That's the same information we're going to give about the participants on this

Committee. So I think that's doing something. I think the way market participants come to that is that they formed opinions about what the Committee is likely to do based on two things—one, what we say; and, two, what the Committee has actually done over time. And then, finally, most of the public doesn't care how we're making these decisions. Savers want to know, how much interest am I going to get and when? Borrowers want to know, how much interest am I going to pay and when? And investors want to know, what are my assets going to be worth and when? And as unsatisfactory as the date is to many of you, it works for them. They can understand it. So I have a tough time.

To go to the specific questions, I think anything that includes two new data points, two new numbers, just gives us additional points of disagreement, additional reasons for someone to dissent from the statement and not find a way to support it. It also gives an opportunity for those two new numbers to be different from the consensus statement that we did all agree to and publish. It doesn't weight the variations, and it is different from history, because every time I compare this with the fed funds paths in the alternative simulations, which are based on the historical actions of the Committee and a lot of information, if I assume that previous Committees made reasonable decisions, then it's hard for me to assume that something that's different from that is a reasonable thing for me to agree to.

In terms of clarifying who projected what in the SEP—again, I think the only thing anybody really cares about is, what does the Chairman project? Once they know what the Chairman projects, their interest in what the rest of us project goes way down. And it is a three-year horizon, and everybody will vote within that three-year horizon. So to me, there's a difference between committing some theoretical future Committee and committing the person

who will actually vote on the decision in two years when they're sitting right next to me and they've said that they don't like it. So I think that is a difference.

Lastly, these discussions have all been about, again, when and how we exit. There's been no discussion about how we communicate thresholds for any future easing—for QE3—which is what I think there's a lot of misunderstanding about, a lot of desire for information about, and that's something that it would be fruitful to talk about. And then the second question we discussed in the policy round—which is, what is the threshold and the increment for us moving the date that we have in our statement today?—we need to think about that carefully. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher, whenever you have to leave, please feel free.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I think my reaction to the discussion this afternoon, as opposed to the item on the agenda, is that we're now engaged in a heavy dose of over-theorizing. And there are some risks associated with that, which have been highlighted by several people already.

With respect to the first set of questions, it feels to me as though a specific problem, which I think we all acknowledge in the static nature of a date once chosen in a particular FOMC statement at a particular moment, has now been generalized into the question of whether there ought to be more quantitative indicators showing the relationship between policy and economic conditions or forecasting. Like Betsy, I think the supposed generalizations are highly asymmetrical. The triggers are in there only for tightening, not for easing, so presumably this is

not a model that would actually be used in normal times, but instead is specific to the circumstances that we face right now. Narayana makes excellent points about the degree to which the use of quantitative triggers can be, and probably would be, misunderstood outside the confines of this room. I would add to that my own uneasiness with the specific indicators that are reflected in the draft paragraphs. So I think on this one, my current preference would be to treat the date issue for what it is, which is a somewhat discrete, though significant, issue that is a byproduct of a zero interest rate period during which we are trying to use communication to substitute to some degree for more-conventional movements in the federal funds rate and, on that ad hoc basis, to primarily use the Chairman's press conferences to adjust, as necessary, expectations around what that date actually means. And there may come a point at which we'd want to change the date.

On the SEP itself—and I think this is really 2 and 3—the point that Janet made at the outset, and a number of you have echoed, is critical. Sometimes it doesn't seem this way to me when I walk in here—that this is a collective decisionmaking process, as opposed to people coming in already knowing exactly what they're going to do. But this is a collective process in the sense that it's a Committee and it requires a vote. And I do think that the way in which the SEP has been put in place meant we didn't have a chance adequately to take into account the idiosyncrasies of our particular monetary policy committee, both its size and the peculiarity of nonregular voting members. I would be in favor of thinking about how to give more focus to the projections so as to make it a little bit more clear how they relate to the collective decision. But I would really counsel against trying to do that in April or June. It's a bit of a muddle out there, but I don't think it's a horrible muddle, and I don't think it's creating big problems. So it seems to me that this is a case in which we might actually want to wait a while, see how people's

perceptions of the projections—with some guidance by the Chairman in his press conferences—evolve over time, and then maybe next year have the subcommittee—whatever Janet's group is—think about what kinds of changes we may want to make in light of a year's worth of experience rather than of one or two releases' worth of experience with it.

Boy, Narayana is heroic in thinking consensus is possible. And if that were right, I think that would be optimal. If it's not—and I fear that it would be tough—I hope we would at least think about the alternative scenarios approach to focus people on particular specific circumstances and then maybe give a little bit of focus, in turn, to the projections. On the voter–nonvoter issue, it seems to me there's an argument for the proposition that the person who is going to be voting a year and a half from now is actually more important than the person voting now with respect to the language that's in there. So I think it's actually important for the public to understand who is in what camp, but that's not always the case. I actually find myself favoring the full matrix with identification of individuals, but that's really only a first, and probably not fully considered, thought. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. I'll first provide a general perspective. It seems to me worthwhile to strive to give the public a clearer understanding of the links between the economic outlook and the Committee's monetary policy decisions. And on this front, I think we've made great strides. In particular, the expansion of the postmeeting statement, along with the careful attention that we pay to the words in it, now provides the public with much more information than before. This "build-out" of the postmeeting statement has been enhanced with press conferences, minutes, and the SEP. And I say this not because I believe in quantity over quality, or transparency over clarity. It strikes me that while the longer postmeeting statement

certainly provides more information, we have been thoughtful and methodical about the quality of what's being communicated. Phrases and changes are discussed extensively, and this is appropriate because our words matter. I also imagine that at some point in time, we would contemplate language as being unnecessary and we would delete it. At the same time, we've provided the public with a lot of new information regarding participants' projections. And this, too, strikes me as the right step, although I have to say that I've always viewed this as one step in a multistep process.

To assist the public in understanding the linkages between the economic outlook and monetary policy decisions, we started with a formulation of projections at the individual participant level. And this was the first step; this was the transparency. However, once the individual components are understood, the public still doesn't know how the components became reshaped at the Committee level and result in policy decisions. In other words, do they not have perfect clarity? They don't see, for example, how the individual economic outlooks, particularly in the choice to contract or expand or stay put, depend on the Committee's view of how the decisions to contract, expand, or stay put relate to particular economic conditions and assumptions. Without clear guidance, the public is left with speculation and uncertainty. And I'll say that the speculation and uncertainty don't derive from not knowing which of the individual dots on the chart drive the Committee's actions. That should not be the objective. I don't think we're trying to individualize members on the Committee. I'm not sure the public is served by knowing who dot A is and who dot B is. Rather, the speculation arises from the public not knowing what our reaction function is. So in my view, we should be striving to enhance understanding of what the public should look for in the economy come late 2014. This, to me, would encourage a reasonable degree of certainty about the economic factors that we believe, as

a Committee, are relevant to the choice in a date of contraction or expansion or staying put. Now, my current sense is that there's no consensus on what this reaction function looks like, and these comments really are meant to convey that this vacuum adds to uncertainties, which—theoretically, at least—could otherwise be minimized.

I'll comment briefly on questions 2 and 3. First of all, about further adjustments to the SEP—yes, I think further adjustments would be helpful. There is much room for improvement in the SEP, and I would prefer, though, to continuously evaluate options for clarification of the SEP, if possible, in one fell swoop rather than as a kind of drip, drip, incremental process that could give the public the argument that we have been withholding that which we decided not to provide in the prior SEP. The third question, about other potential approaches for clarifying, really brings back, again, this distinction between transparency and clarity. And it reminds me that there is an elephant in the room here, and that's the call by many in the public to disclose, with a shorter lag, the transcripts of these meetings. I think that for many in the public, this is the ultimate transparency option. The true definition of a reaction function consists of the dynamics that exist here. Many people in the public would argue that anything we do short of that falls short of true transparency. Now, I don't agree with this view, because of this distinction between transparency and clarity. And my sense is that we are proceeding in a responsible, deliberate, thoughtful manner, and throwing the transcripts out earlier may provide transparency but, certainly, will not provide clarity. I do, though, want to mention this because these efforts that we're undergoing still represent, I think, a big disconnect from what some in the public understand to be complete transparency. So one recommendation that I have for managing the public debate and communication to keep control of the pace and structure of disclosure is to consider a shift in the rhetoric that we use from one about transparency to one about clarity.

CHAIRMAN BERNANKE. Thank you very much. Thank you, all, for bearing with a long day and for a very good conversation. I particularly want to commend the Committee on the interactive nature of this discussion. There was an awful lot of back-and-forth that I thought was very helpful. As I said, we weren't going to come to any decisions today—[laughter]—and I don't really think that I can accurately summarize the whole discussion, but let me make a couple of comments. First, there were a number of people who expressed a desire to let things sit and percolate for a while to give the public time to digest all of the steps we've taken, et cetera. That's fine in principle, but as today's discussion suggested, we do have the issue of what to do about the current form of the statement. And we'll have the same issue next meeting. So, if nothing else, we should at least—and I say "we" in this case now, but I think the staff, with some further outreach—think about some kind of improvement in our broader communication strategy, whether it's the press conference or whether it's a longer statement or whether it's something that just gives a more fulsome description of what it is the date means and what we might be thinking about as we look at it. That's one observation. There were other interesting suggestions about looking at, say, the Bank of England's monetary policy report—or *Inflation Report,* I guess it's called—to see what we might learn from that. Of course, we already do two *Monetary Policy Report*s to the Congress each year. There's a lot of staff effort invested there. It seems to me that we might conceivably end up reallocating that effort to four shorter reports, for example, that would be more useful to the public than what we have now.

So I think that those are some directions, and again, we'll look through the transcripts of this discussion to see what else we can pull out. For example, there were a number of people who had comments on the scenarios option, maybe using the minutes. There was a good

discussion of whether more disclosure in the SEP would be useful. So there are various things that we can look at, and again, I very much appreciate the discussion.

Before closing, I want to mention one other thing, which is that one question that has been raised about our SEP is the fact that between June and November, there's a very long gap between what should be, in some sense, quarterly projections. And I've asked Governor Yellen and her subcommittee to look at this. We need to look at it. We need to make some decisions soon about this because, of course, we have to prepare our FOMC meeting schedule for next year. But possible options might be adding a fifth SEP or moving around the meetings—perhaps even having seven meetings that are two days. There are various options that we could look at. And we're going to have some discussion of that, but clearly we have to come to some resolution soon because we do need to set the meeting schedule for next year. If anyone has thoughts or views on this general subject, perhaps you can be in touch with Governor Yellen. [Laughter] Any further questions or comments? President Lacker.

MR. LACKER. Earlier in the meeting about today's statement, about "2014," the issue of commitment came up. I interpreted the view that having made the statement raises the bar for action as that it represents some commitment. That contradicts what you've said in public about it being a forecast. I take the status quo to be that it's a forecast. Can I assume that it remains that way until we formally adopt—

CHAIRMAN BERNANKE. Well, I asked for discussion of that point today. I think one thing that I was trying to convey—and maybe I misunderstood your question originally—was, was this an unconditional commitment? There may be some people in the public who say, "Well, the Fed says they're not changing rates until late 2014—unconditionally."

MR. LACKER. Right.

CHAIRMAN BERNANKE. And I was very clear that that is certainly not what we're doing, that this is conditional on the factors that we discuss in the statement. However, I don't think this Committee has really thoroughly hashed out whether or not the reaction function that is embedded in that conditional commitment is a Taylor rule or an attempt at an optimal policy under commitment or what. And I think that question is not yet fully resolved.

MR. LACKER. Okay.

CHAIRMAN BERNANKE. Okay. Thank you, all. The next meeting will be Tuesday and Wednesday, April 24 and 25.

END OF MEETING