

**Meeting of the Federal Open Market Committee on
April 26–27, 2011**

A joint meeting of the Federal Open Market Committee and the Board of Governors of the Federal Reserve System was held in the offices of the Board of Governors in Washington, D.C., starting at 10:30 a.m. on Tuesday, April 26, 2011, and continuing at 8:30 a.m. on Wednesday, April 27, 2011. Those present were the following:

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

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

James Bullard, Thomas M. Hoenig, and Eric Rosengren, Presidents of the Federal Reserve Banks of St. Louis, Kansas City, and Boston, respectively

William B. English, Secretary and Economist
Deborah J. Danker, Deputy Secretary
Matthew M. Luecke, Assistant Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Thomas C. Baxter, Deputy General Counsel
Nathan Sheets, Economist
David J. Stockton, Economist

James A. Clouse, Thomas A. Connors, Steven B. Kamin, Loretta J. Mester, David Reifschneider, Harvey Rosenblum, David W. Wilcox, and Kei-Mu Yi, Associate Economists

Brian Sack, Manager, System Open Market Account

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

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

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

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

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

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

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

Lawrence Slifman and William Wascher, Senior Associate Directors, Division of Research and Statistics, Board of Governors

Andrew T. Levin, Senior Adviser, Office of Board Members, Board of Governors

Joyce K. Zickler, Visiting Senior Adviser, Division of Monetary Affairs, Board of Governors

Michael G. Palumbo, Associate Director, Division of Research and Statistics, Board of Governors; Trevor A. Reeve,¹ Associate Director, Division of International Finance, Board of Governors

Fabio M. Natalucci, Assistant Director, Division of Monetary Affairs, Board of Governors

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

Jeremy B. Rudd, Senior Economist, Division of Research and Statistics, Board of Governors

James M. Lyon, First Vice President, Federal Reserve Bank of Minneapolis

Jamie J. McAndrews and Mark S. Sniderman, Executive Vice Presidents, Federal Reserve Banks of New York and Cleveland, respectively

David Altig, Alan D. Barkema, Richard P. Dzina, David Marshall, Christopher J. Waller, and John A. Weinberg, Senior Vice Presidents, Federal Reserve Banks of Atlanta, Kansas City, New York, Chicago, St. Louis, and Richmond, respectively

John Fernald and Giovanni Olivei, Vice Presidents, Federal Reserve Banks of San Francisco and Boston, respectively

¹ Attended Tuesday's session only.

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April 26 Session

CHAIRMAN BERNANKE. Good morning, everybody. Welcome to the marathon FOMC meeting. [Laughter] Thank you for accommodating the early start. As you know, we have an extra go-round today. I hope this will not be the norm, but we'll just have to see how things evolve.

Given the topics this morning, I thought we would make this a joint FOMC–Board meeting, and so I need a motion to close the meeting.

MS. YELLEN. So moved.

CHAIRMAN BERNANKE. Thank you. Without objection. Let's begin, as usual, with financial developments and open market operations, and I'll turn to Brian Sack. Brian.

MR. SACK.¹ Thank you, Mr. Chairman. It was a complicated intermeeting period in financial markets, as investors had to contend with several significant global developments affecting risk sentiment, with domestic events highlighting the fiscal challenges facing the United States, with economic data that led to a sizable downgrade to expected GDP growth in the first half, and with a notable further rise in energy and commodity prices. While these developments led to some volatility in asset prices during the period, they did not significantly alter investors' perceptions about the likely course of the economy or monetary policy on balance.

As shown in the upper-left panel of your first exhibit, the expected path of the federal funds rate is virtually unchanged from the last FOMC meeting. This outcome is somewhat remarkable, given the number of important developments just noted and the large number of speeches delivered by FOMC members expressing diverging views on policy prospects. Current market prices suggest that investors expect the federal funds rate to remain near its current level over the rest of the year and then to move higher in the first half of next year. The Desk's survey of primary dealers shows a similar pattern, with respondents putting the highest odds on the first increase in the federal funds rate target taking place in the first half of next year, although they also see significant odds of policy tightening being delayed until the second half of that year or later.

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

This policy outlook appears to be based on investors' expectations for a sustained economic recovery and some ongoing concerns about inflation. Investors saw the incoming economic data as weaker than expected, leading them to reduce their first-half economic growth estimates notably, but they apparently did not substantially lower their forecasts for growth further ahead. At the same time, some of the factors that have contributed to investors' concerns about inflation intensified, as energy and commodity prices continued their steep climb, as shown in the upper-right panel.

The rise in energy and commodity prices put some upward pressure on near-term breakeven inflation rates. More importantly, measures of the five-year, five-year forward breakeven inflation rate also moved higher. This recent increase leaves the Board measure near the levels observed over much of 2009 and 2010 but pushes the Barclays measure slightly above its historical range. The increase in breakeven inflation rates was associated with a modest rise in nominal Treasury yields over the intermeeting period, as shown to the right.

A notable development in the Treasury market over the intermeeting period was the announcement that Standard and Poor's had revised its outlook for the long-term credit rating of the United States from stable to negative. Not surprisingly, market participants were already focused on the budgetary imbalances facing the United States and the uncertainty about whether the political process will produce an agreement to address those imbalances. The S&P announcement prompted an immediate rise in Treasury yields, as summarized in the bottom-left panel, but the effect did not persist, as investors saw the report as conveying little new information.

The fiscal difficulties facing the United States will remain at the forefront with the looming debt ceiling problem. As shown in the panel to the right, the amount of outstanding Treasury debt is projected to reach its statutory limit on or around May 16. At that time, the Treasury would begin to employ a set of extraordinary measures that allow it to temporarily finance the government without increasing the level of debt subject to the ceiling. Our estimate is that such measures would allow the Treasury to operate until mid-July. Yields on Treasury bills maturing around these dates suggest that investors do not expect a significant market disruption from the debt ceiling despite the uncertainties surrounding this process.

Your next exhibit turns to some of the international developments that affected financial markets over the intermeeting period. Japanese equity prices fell dramatically following the earthquake on March 11 and the nuclear problems that ensued, as shown in the upper-left panel. While share prices have bounced back some, the Nikkei index is still about 7 percent lower than its levels ahead of the earthquake, reflecting concerns about the economic consequences of those events. Despite these economic concerns, the yen strengthened sharply in the immediate aftermath of the earthquake, as shown to the right. This pattern was likely due to some unwinding of yen carry trades as global asset prices declined as well as the anticipation of repatriation flows from insurers and retail investors.

In response to the movement in the yen, the G-7 authorities announced their intention to conduct a coordinated currency intervention on March 18. As summarized in the memo that was sent to the Committee at that time, operations were conducted by each central bank that day during their respective trading hours. In carrying out our operations, the Desk conducted two rounds of yen sales, with each involving \$500 million of transactions. Following the usual procedure, half of the funds for the intervention came from the System Open Market Account and the other half from the Treasury's Exchange Stabilization Fund, with the SOMA transactions authorized by the Foreign Currency Subcommittee of the FOMC. Overall, the operations were carried out relatively quickly, with no operational difficulties.

Notable developments in financial markets also took place in the euro area. As Nathan Sheets will discuss in his briefing, the Portuguese government requested financial support from the European Union and the International Monetary Fund, making it the third peripheral European country to do so. More recently, market participants have become increasingly concerned about the possibility of a restructuring of Greek sovereign debt. These developments led to a surge in the yield spreads on the sovereign debt from these two countries, as shown in the middle-left panel. Importantly, there has been only limited pass-through from these developments to the pricing of Spanish and Italian debt, although some modest spillover effects have been visible at times.

Despite the ongoing problems in peripheral countries, the incoming data on economic activity for the euro area as a whole has been relatively strong, and headline inflation has been elevated. In response, the European Central Bank raised its benchmark policy rate by 25 basis points at its April 7 meeting, and several additional policy actions are expected by year-end. The realized and prospective policy tightening supported the euro, which gained 4 percent against the dollar, shown in the middle-right panel. More broadly, the dollar depreciated against all major currencies except the Japanese yen, leaving the broad dollar index more than 2 percent lower over the intermeeting period.

The potential risks from the various domestic and global developments and the softer tone of the economic data did not manage to hold back U.S. equity prices. As shown in the bottom-left panel, the S&P 500 index gained more than 3 percent over the intermeeting period. Equity prices had fallen sharply around the time of the last FOMC meeting, in part reflecting greater perceived uncertainty in the aftermath of the Japanese earthquake. But investors' uncertainty about the outlook has since diminished, as shown by the VIX index in the panel to the right.

Returning to the bottom-left panel, one notable exception to the rally in equities has been the financial sector. Although bank earnings for the first quarter have generally met or exceeded analysts' expectations, profit growth has been driven in large part by reductions in loan loss provisions. Investors have increasingly worried about the sources of ongoing earnings growth for these firms, leading to downward pressure on their share prices.

Your third exhibit turns to monetary policy operations. As of today, the Desk will have completed \$422 billion of the \$600 billion of intended Treasury purchases, in addition to the ongoing reinvestment of principal payments from our agency debt and mortgage-backed securities. Overall, the total pace of the Desk's purchases has been running at around \$100 billion per month, as shown in the upper-left panel. If the FOMC were to complete the \$600 billion in asset purchases in June and maintain the reinvestment policy thereafter, as assumed in the Tealbook, the Desk's purchases would decline to an average pace of about \$10 billion per month over the second half of the year.

The panel to the right shows the projected characteristics of the SOMA portfolio as of the end of June under the Tealbook policy assumptions and compares them with the SOMA portfolio at the time of the April 2010 FOMC meeting, when the Committee last had an extensive discussion of its exit strategy. The most notable changes to the portfolio over this period are the expansion of its size as a result of the \$600 billion asset purchase program, and the rotation of its composition from agency debt and agency MBS to Treasury securities as a result of the reinvestment policy. The effective duration of the portfolio has increased slightly over this period and remains well above its historical levels of two to three years.

As Bill Nelson will discuss in his briefing on exit strategy, the Committee may want to renormalize the balance sheet as part of its efforts to remove the current degree of monetary policy accommodation. The policy discussion that occurred last April suggested that Committee members were inclined to eventually sell the agency MBS held in the SOMA portfolio as part of that process. Accordingly, the recent decision by the Treasury to sell its agency MBS holdings may be of particular interest to the Committee. The Treasury indicated that it would sell all of its agency MBS holdings, totaling \$142 billion, at a pace of up to \$10 billion per month, depending on market conditions.

Overall, the market has effectively absorbed the Treasury's operations to date. As shown in the middle-left panel, MBS spreads widened on the announcement, particularly in the higher coupon securities for which sales were seen as potentially more disruptive to the market. However, as sales got under way and were met with strong demand, those concerns diminished, and MBS spreads retraced. Treasury yields also experienced some mild upward pressure from the announcement. However, consistent with the staff's calibration of portfolio balance effects, this response was small because of the limited size of the Treasury's portfolio. A decision by the FOMC to sell its MBS holdings could be more consequential for market pricing and market functioning, given the much larger size of the Federal Reserve's holdings, highlighted in the middle-right panel.

The bottom panels of the exhibit turn to the effects of the change to the FDIC's deposit insurance assessment system that was implemented on April 1. This change has implications for the behavior of the federal funds rate and other overnight market interest rates relative to the interest rate that the Federal Reserve pays on reserve balances (the IOER rate). In general, overnight market rates tend to remain relatively

close to the IOER rate because banks can borrow funds in the market and hold reserves at the Federal Reserve. This activity represents an arbitrage opportunity in which banks earn the difference between their borrowing rate and the IOER rate. The new FDIC system makes this arbitrage more costly for domestic banks, as it imposes a fee on all liabilities, including those used to fund reserve holdings. Banks therefore require a larger yield spread to engage in the arbitrage activity, shifting their demand for funds in a way that has caused overnight market interest rates to fall.

As shown in the bottom-left panel, since the imposition of the fee, the federal funds rate has traded at a level of around 10 basis points—about 4 basis points below its average level in March. That decline is of the order of magnitude that the staff had expected in response to the fee. Some observers have suggested that the FDIC fee diminishes our control of the federal funds rate in a significant way. However, although the FDIC fee creates a wider spread between the federal funds rate and the IOER rate, the staff believes that it will not reduce the responsiveness of the federal funds rate to changes in the IOER rate and hence does not diminish our control.

A more surprising aspect of the market effects of the FDIC fee has been the abrupt reaction of repo rates. We had expected downward pressure on repo rates because banks would be less inclined to obtain funding in the repo market, limiting the supply of Treasury collateral in that market. However, the Treasury general collateral repo rate fell more sharply than the federal funds rate, moving to near zero for several days, and has exhibited considerable volatility.

As these events have unfolded, we have also observed a significant pickup in activity at the Desk's securities lending program, as shown in the bottom-right panel, suggesting that more individual Treasury issues have traded with a scarcity premium. Note, however, that our securities lending program does not address the overall shortage of Treasury collateral or the low levels of general collateral repo rates, as participants have to provide us with Treasury securities in order to obtain specific Treasury issues from us. For that reason, some market participants have argued for the Desk to conduct reverse repurchase agreements to provide more Treasury collateral to the market and to lift the repo rate toward the federal funds rate. However, given the volatility of the repo rate, it may be prudent to allow more time for market participants to adjust their behavior and to assess where the repo rate settles relative to the federal funds rate before considering any such steps.

Your final exhibit summarizes some of the results from the Desk's survey of primary dealers. The survey this time included additional questions to gauge the expectations of market participants about the FOMC's strategy for removing policy accommodation. To state the obvious, there is no presumption that the FOMC has to follow market expectations, and those expectations can be shaped or redirected through FOMC communications going forward.

Market participants expect the Federal Reserve to take a number of policy steps in the process of removing accommodation, as indicated in the upper-left panel. All survey respondents expect the FOMC to change the "extended period" language

before raising the federal funds rate target, and nearly all expect the interest rate on reserves to be adjusted at the same time as the federal funds rate target. As indicated by the blue dots in the panel to the right, the median respondent expects the change in policy language to occur three meetings before the change in the target rate.

In addition, all respondents expect the Federal Reserve to employ its two temporary reserve draining tools as part of the exit process, with a large majority anticipating such a step before an increase in the target rate. The interquartile range of responses, shown by the blue bar in the right panel, places the use of these tools one to three meetings in advance of the target rate change, with the median response just one meeting in advance.

In terms of steps for reducing the Federal Reserve's balance sheet, respondents see asset redemptions as likely to occur relatively early. Indeed, nearly all respondents expect the FOMC to begin redeeming its agency debt and MBS holdings before raising the federal funds rate target, and about half also expect Treasury redemptions to occur on this time frame. Other respondents expect Treasury redemptions to occur either at the same time or after the target rate is increased, leaving only 15 percent expecting them to never occur. The interquartile range of responses on Treasury redemptions was the largest among all of the steps, suggesting that there is more uncertainty about the timing of this action.

Most respondents also expect the FOMC to sell assets. Of those expecting asset sales, virtually all saw this step as occurring after the first increase in the federal funds rate target, with the interquartile range of responses spanning two to six meetings after the target rate increase. Dealers continue to place high odds on Treasury sales in addition to MBS sales.

These policy steps put the expected size of the Federal Reserve's balance sheet on a gradual downward trajectory. The median survey response for the size of the balance sheet, shown by the dark blue line in the middle-left panel, is virtually identical to the path that is realized under the Tealbook policy assumptions, shown by the light blue line that is barely visible.

Despite this decline, the balance sheet is still expected to be very large at the time of the first increase in the federal funds rate target. As a result, there would presumably be a large amount of excess reserves in the banking system at that time, unless they were aggressively drained using term deposits and reverse repurchase agreements. As shown in the middle-right panel, the majority of respondents anticipate that reserves will still be \$1.2 trillion or higher at the time of the first increase in the target rate. The remaining responses were spread out over a wide range, with some suggesting that draining operations would be used in very large scale.

We also used the survey to gauge the view of market participants on how aggressively the reserve draining tools could be ramped up without creating market dislocations. As shown in the bottom-left panel, respondents thought that we could

use the tools to drain about \$500 billion of reserves over a six-week period, with that total about evenly split between the two tools.

The bottom-right panel addresses the effectiveness of paying interest on reserves for controlling the federal funds rate. Specifically, it reports the expected gap (in basis points) between the IOER rate and the effective federal funds rate for different combinations of the amount of excess reserves and the level of short-term interest rates. For example, with \$1.5 trillion in excess reserve balances, the federal funds rate would be expected to trade 16 basis points below the IOER rate when the latter is set to 25 basis points, corresponding to the rates observed today.

As can be seen by moving to the right on the table, the relationship between the effective federal funds rate and the IOER rate is expected to tighten as the level of reserve balances declines, with a fairly tight range reached at \$500 billion of reserves. Even at very high levels of reserves, though, paying interest on reserves is seen as providing fairly effective control of the federal funds rate. Indeed, with excess reserves near their current level of \$1.5 trillion, the expected gap only widens to 25 basis points as the IOER rate is increased to 2 percent.

Finally, on a topic unrelated to the earlier material, I would like to request a vote to renew our long-standing bilateral swap lines of \$2 billion with Canada and \$3 billion with Mexico. Ahead of the meeting, Nathan Sheets and I sent the Committee a memo recommending renewal of the swap lines at this time. Our proposal is to keep the swap lines in their current form. Thank you.

CHAIRMAN BERNANKE. Thank you, Brian. One other vote that we will be requesting is the ratification of foreign exchange transactions over the intermeeting period. So I thought I would just say a word about the intervention that the Federal Reserve participated in with respect to the yen.

As you know, the FOMC delegates to the Foreign Currency Subcommittee—the Chairman and Vice Chairman of the FOMC and Vice Chair of the Board—the authority to authorize interventions if they are sufficiently small and if time does not permit consultation with the full Committee. I think both of those conditions were easily met. As you know, we haven't intervened for more than a decade, but following the earthquake and tsunami, there were some quite extraordinary circumstances. The Japanese called the G-7, cited large moves in the yen in relatively illiquid trading conditions, and asked for us to participate in a joint intervention. I

think there was some basis for their concerns about the foreign exchange market, but I think the response of their colleagues was more about solidarity for the courage that they were showing under extreme circumstances. So under the leadership of Treasury Secretary Geithner and the other G-7 leaders, we agreed to participate in an intervention.

It was a very short time lag; the time between the call when the Japanese made the request and the actual intervention announcement was less than two hours, so there was really not time to consult. The amount involved was very small—\$500 million from the Fed, \$500 million from the Treasury—with most of the intervention being done by the Bank of Japan. There was no commitment to any additional action, and I don't expect any, barring some major unanticipated developments. This appears to have met the criteria set forward by the Committee, but I wanted just to add that in case there are any questions or comments on that subject.

Now let me open the floor for questions for Brian on his presentation or anything on the foreign exchange market. Any questions? President Lacker.

MR. LACKER. Yes, a couple of questions for Brian. If the debt ceiling is resolved on time, have you been in conversations with the Treasury about the pace at which the Supplementary Financing Program will be reinstated?

MR. SACK. We have not been in active discussions about that, given the uncertainties about the debt ceiling. I think there is general agreement that the SFP could be brought back up to its previous size with a sufficient increase in the debt ceiling. But no, we haven't had detailed conversations about it recently.

MR. LACKER. Okay. My second question has to do with MBS sales. In discussing the Treasury sales, you noted the large difference between the magnitude of our holdings and the magnitude of their sales and holdings. And you said that Fed sales, because they would involve

such a large amount, could have implications for market pricing and market functioning. In preparing for this meeting, I looked at the November transcript where I asked you about the pace of our purchases, and what sort of factors you thought would motivate limiting the pace of our purchases. You said essentially two things: One was operational capabilities, and the other was the potential for affecting market functioning. You were careful to distinguish between the pricing effect, which, as you noted, was presumably the desired effect of the policy, and what you called market liquidity. And what you described was that we didn't want to create too much of a one-sided market by buying too much, resulting in lower trading volumes between other parties and higher bid-asked spreads and all.

So going in the other direction and selling things, do you think about the effect on market functioning the same way? I mean, it's unlikely to result in a one-sided market, right? We are putting more things out there, and a lower trading volume seems unlikely because there is going to be more float out there. How do you think about the potential market-functioning effects, apart from the pricing effects? The broad motivation for this question, obviously, is, how fast could we conceivably think about selling our assets?

MR. SACK. I think about the market-functioning aspects in many of the same ways—though maybe not entirely. I think rapid sales could be difficult for the market to digest and could result in a one-sided market where dealers have more trouble making markets and where other participants are less inclined to participate, given the heavy flow coming from one single seller. So I think the same concerns would apply if we are talking about a pace of sales that's very high.

One thing we've learned from the Treasury decision, though, is that the pace that they have set out, of up to \$10 billion a month, seems to have been fairly easily digested so far. It

does not seem to be raising any problems with market functioning. And \$10 billion a month is not a lot of net supply relative to the history of the MBS market. In the early 2000s, there was \$200 billion to \$300 billion of net supply coming to the market each year—something on the order of \$20-some billion a month. There is not much net supply coming from fundamentals today, so the Treasury adding their \$10 billion to net supply hasn't been too disruptive.

There's one difference: When you are selling assets out of your portfolio, these are seasoned securities, or what are called specified pools; they're not the production securities in the TBA market. We had a little bit of uncertainty about gauging whether \$10 billion was a lot or not, because these were seasoned securities, but I think what we have learned from the Treasury program is that the market has been able to digest that. The concerns about market functioning, I think, would apply if the Committee were to consider much more rapid paces of MBS sales than \$10 billion.

MR. LACKER. Can I follow up, Mr. Chairman? I want to learn more about this concern about market functioning. The way I thought about your comments in November was that—for the standard market microstructure model—marketmakers commit some capital based on expected returns and expected deal flow. If we are buying a lot, I can see why the market would shrink and the number of marketmakers ought to shrink. But my intuition about flipping that around and applying it to a situation where we are selling would be that the number of marketmakers would increase and spreads would fall. Do you have some other model in mind, or am I missing something in applying the standard model to this?

MR. SACK. Yes, I do. As I said, I have many of the same concerns with market functioning in terms of selling. But I agree with you, it is not the same, and there are some things that are asymmetric. In terms of the available float, tradable float to the market, that's

very different. When we were buying very actively, we were removing a lot of the tradable float, and that was likely impairing market liquidity. And, of course, when we're selling, we are providing supply to the market that it can trade. However, as I mentioned, we are not selling the most actively traded TBA securities in the market. We will be selling these more seasoned, more specific pools, which may limit that benefit to some degree.

The concern I was raising was that, if the market thought that there was a single seller who would be in very aggressively, and maybe unpredictably, it would be harder for marketmakers to make markets and provide liquidity to the market. So it is the uncertainty, I would say, about what the effect of a very aggressive sales program would be that would limit market functioning. But I want to emphasize that this would be at paces well above what the Treasury decided upon. We think that there is some room to sell at a decent pace without causing significant market disruption.

MR. LACKER. Okay. You took pains to reduce the uncertainty about the pace of our purchases, and I'm assuming you did the same thing for the sales, too. So the uncertainty around our sales can't be large, can it?

MR. SACK. Well, I think that would depend on what the FOMC communicated. And then, given what the FOMC has communicated, we would decide if there were additional details for the Desk to communicate. But I agree that communicating about the sales strategy would help.

MR. LACKER. That seems like a price effect—that they're uncertain where the price is going to be, as we are—and that seems like a policy consideration as opposed to market functioning.

MR. SACK. Of course, in addition to the market-functioning aspects, as policymakers, you will also worry about the market-pricing effect, because we would assume that more-rapid sales programs would put upward pressure on long-term interest rates.

MR. LACKER. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Other questions for Brian? President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I am looking at figure 24, “Expected Spread between IOER Rate and Federal Funds Rate.” If I’m reading this correctly, IOER goes up and the spread gets larger. Why is that? I would think the arbitrage would be the arbitrage, given the fees that are in the market. So why does the spread go up?

MR. SACK. The current level of the spread is constrained by the arbitrage, but it’s also constrained by the zero bound on nominal interest rates, which is presumably limiting the spread that we see. Let’s say the arbitrage hypothetically required 30 basis points. We know the fed funds rate wouldn’t go to minus 5, so the zero bound is providing a limit on how big that spread can get. I think what you are seeing is that, as IOER goes up, that limit goes away, and the spread increases. Having said all that, at any level of the IOER rate, we think that arbitrage is relevant and does put a cap on how big that spread can be, because if that spread gets too large, firms will come in and do the arbitrage. So that’s why the spread only rises to 25 basis points, even with such a large amount of reserves.

MR. BULLARD. Okay. That makes sense, but then the zero bound is still a factor, I guess, between, say, 1 and 2 percent on the IOER?

MR. SACK. Under the story I just told, you would expect the same gap at 1 and 2, and that’s not consistently represented in the table. For some of the columns, you see that pattern—that the gap widens a lot from 25 basis points to 100 basis points on IOER, and then widens only

marginally more as you go to 200 basis points on IOER. That's true for all of the columns except for the first one. So, my guess is that the gap that we will see between market interest rates and the IOER rate could widen as we move up from current levels, but, for the reason you noted, will reach a constant level, a steady-state level, well before the IOER rate gets to 2 percent.

MR. BULLARD. Okay. Thank you.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I have a question about figure 23. This represents the primary dealers' estimates of our draining capacity. I was wondering what the staff's own estimates would be of that number.

MR. SACK. This is the draining capacity over a short time.

MR. KOCHERLAKOTA. The intermeeting period, a relatively short period of time.

MR. SACK. I'll speak for myself, and maybe not the staff as a whole. My own impression is that these responses are pretty aggressive, especially on the reverse repo side. If the mandate were to drain \$500 billion of reserves or more, I think it may be prudent to spread that process out a bit more than over one intermeeting period.

When we do reverse repurchase agreements, we are taking funding away from dealers and other participants in the market. So there has to be this change in short-term credit flows because, ultimately, the reserves are going to come out of the banks; it requires a change of how the credit flows. I think we are unsure about how easily the market adjusts as it moves through that chain, and so I think there is good reason to be gradual and to give the market more time than six weeks to make those adjustments.

I think the capacity to ramp up term deposits quickly is perhaps a bit greater than reverse repos because it doesn't require any re-intermediation of credit. It's just a change in the nature of banks' assets.

MR. KOCHERLAKOTA. A relabeling, almost. If I might follow up, I understand your concerns on reverse repos. What would be your concerns about what kinds of constraints we would face in terms of the use of TDFs?

MR. ENGLISH. I think on the term deposits, the question is simply that there's a lot of uncertainty about the level of reserves that people will provide to us at a given price. I mean, at a high enough price, we are pretty confident we could drain a lot of reserves, but we don't know what that supply curve looks like.

I think another issue that would suggest that having a little more time would be helpful is that some institutions have not participated thus far in our TDF operations but have suggested that, if this gets serious, they would want to sign up and begin participating. We would want some time to get the new entrants integrated into the TDF program so that there would be more capacity as they came in.

MR. KOCHERLAKOTA. Thanks.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Yes—a clarification, Brian. I'm looking at figures 17 and 18 on page 3 about the GC repos and the securities lending. You made a comment that part of the problem was the lack of Treasury collateral in some of these markets, which helps to explain a little bit of the rise in the securities lending and some of the differences in the repo rates. Is that related at all to the fact that we are buying most of the Treasuries that are coming out through our purchase plan, and that we are actually making Treasury collateral scarce in doing this exercise?

MR. SACK. The underlying market conditions coming into the FDIC fee were relevant. We've been conducting asset purchases, and that has left less collateral in the market than it otherwise would have had; at the same time, the Treasury has run down the SFP, which also has taken Treasury collateral out of the market. So there was a backdrop of less collateral available, but it wasn't causing significant disruption or problems for the market. What happened with the FDIC fee was much more of an abrupt shift. Just to be clear, we had expected the repo rate to move down roughly in line with the federal funds rate for the same reasons that apply to the federal funds rate. But what happened was that the adjustment was more abrupt. It seemed that the decision by some market participants not to do the arbitrage—not to fund themselves in the repo market, pulling that collateral out of the market—really made it difficult for the market to adjust in the short term. I would say that the things you point to provide a backdrop of some shortage but not problems, but then the FDIC fee resulted in a much more abrupt adjustment.

MR. PLOSSER. But if you go to the other panel, with the securities lending, since November there's been a rather marked increase in securities lending by the Fed. That's the background you're talking about?

MR. SACK. That is the background I'm talking about, and I think in part that upward trend is related to us taking Treasury securities out of the market.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Mr. Chairman, I don't know if the questions are over, but I would like to move that we accept the proposal for the extension of the swap lines from Mexico and Canada and approve the Desk operations as you suggested.

CHAIRMAN BERNANKE. Thank you. So there are three measures: open market operations, foreign exchange operations, and the swap agreements.

MR. FISHER. I would like to move acceptance of all three.

CHAIRMAN BERNANKE. Thank you. Before we do that, though, let me just make sure—Governor Duke, did you have a question?

MS. DUKE. I just had one question. Can you give me a sense of the relative size of the Treasury GC repo market and the current fed funds market?

MR. SACK. Yes. There are different ways to measure this, but one way is to compare average daily volumes among dealers. For federal funds, we've been seeing \$40 billion to \$50 billion of transactions daily. For Treasury GC repos, just to the dealers, it's been \$500 billion to \$600 billion.

MS. DUKE. Thank you.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Brian, a more general question on your outlook for the effect of the FDIC fee on the repo market. When we were considering the zero lower bound, we were concerned that there could be a destruction in the infrastructure that would occur over time with professionals leaving because they couldn't operate at that low level, and then generally that there could be a relationship to IOER and its ability to have the effects we want as we begin to raise it. Can you generally talk about your concern about whether this fee complicates our life over the longer term?

MR. SACK. Yes, I can. There's been a slight decline in funding activity in these markets as the FDIC fee was imposed, but it's been fairly modest. Even at these new prices, it seems like there is active intermediation of credit taking place, and, in that sense, the markets continue to function.

Another pressure point, however, is the implications for money market mutual funds. At this point, essentially, Treasury-only money funds will be operating at a loss, and essentially the fund complexes will likely be subsidizing those funds if they want to continue to offer them. They may choose to do so. Many of them feel that these types of funds are an important part of a suite of products that they offer customers. As repo rates got extremely low, we did have several money funds raise complaints to us about this phenomenon, with at least one indicating that it couldn't sustain some of its funds beyond the summer at these levels. So I think what we will do is continue to reach out and listen to that type of anecdotal evidence. At this point, that was just one fund, but we are going to try to get a sense of how widespread it is. There's no doubt that as Treasury repo rates and Treasury bill rates come in, that's going to put additional pressure on the profit margins of the money funds. The prime funds still seem quite okay. There is enough yield pickup as they move into other products that we don't think at this point that they're generally under pressure.

CHAIRMAN BERNANKE. Any other questions? [No response] All right. We have a motion on all three of these measures. Let's take them one at a time. Open market operations—can I have a second?

MS. YELLEN. Second.

CHAIRMAN BERNANKE. Any further questions or comments? [No response]
Without objection. Foreign exchange transactions—second?

MS. YELLEN. Second.

CHAIRMAN BERNANKE. Thank you. Any comments or questions? [No response]
Without objection. And, finally, the renewal of the standing swap agreements with Canada and Mexico. I need a second.

MS. YELLEN. Second.

CHAIRMAN BERNANKE. Thank you. Any objections, comments? [No response] All right. Thank you.

Let's go on, next, to item 2, Strategies for Removing Policy Accommodation. A memorandum was distributed from the staff on April 19, and we will begin with Bill Nelson making a presentation. Bill.

MR. NELSON.² Thank you Mr. Chairman. At its meeting a year ago, the Committee discussed strategies for removing policy accommodation and normalizing the balance sheet over time. Shortly thereafter, in response to a weakening in the economic outlook and the threat of deflation, you instead provided additional policy accommodation by expanding the balance sheet further. At the risk of tempting fate [laughter], last week the staff again sent you a memo on strategies for removing accommodation and normalizing the balance sheet.

In your previous discussion, you appeared to agree on two broad principles for your exit strategy. First, the SOMA portfolio should be returned to a normal size and an all-Treasuries composition over the intermediate term, which will require sales of agency securities at some point. And second, sales of SOMA securities should be implemented using a framework that would be communicated in advance and at a pace that potentially could be adjusted in response to changes in economic and financial conditions. Issues that remained open included the appropriate sensitivity of sales to changes in the economic outlook, how quickly sales should proceed, whether to redeem Treasury securities in order to shrink the balance sheet more rapidly, and whether to use reverse repurchase agreements and term deposits to drain reserves before raising your target for the federal funds rate. In addition, you will now also need to decide when to stop the reinvestment of principal payments on agency securities into longer-term Treasury securities. And, of course, you will also have to decide on the appropriate sequence for these policy actions.

To some extent, these decisions can be reduced to choices about a few key policy issues. The first issue is the timing and pace of balance sheet reduction. Both raising short-term interest rates and reducing the Federal Reserve's holdings of longer-term securities would restrain economic activity by tightening financial conditions, so there is a degree of substitutability between these two policy levers. To accomplish essentially the same outcome, the Committee could sell assets sooner and faster but raise the target for the federal funds rate later and more slowly, or you could sell assets later and more slowly but increase the federal funds rate target sooner and faster. You likely see the key advantages to selling assets sooner and faster to be the more rapid return to a normal policy environment, the reduction in any upside risks to

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

inflation stemming from outsized asset holdings and reserve balances, and the more limited scope for your holdings of agency securities to unduly allocate credit to a particular sector of the economy. You may see the principal advantages of selling assets later and more slowly to be a reduced risk that the market could react sharply, boosting longer-term rates significantly and weakening or even derailing the recovery at a time when the federal funds rate was still constrained by the lower bound, and possibly that the associated earlier liftoff of the funds rate and flatter yield curve would be less likely to lead to financial imbalances.

The second key policy issue is the responsiveness of the balance sheet to economic conditions. The pace of sales could be quite responsive to economic conditions, or sales could instead occur in a nearly deterministic manner. Under a state-contingent approach for adjusting the balance sheet, the FOMC would be actively employing two policy instruments to achieve its economic objectives. State-contingent sales could increase the scope and flexibility for adjusting financial conditions; for example, more-rapid sales could withdraw accommodation quickly even if the Committee were reluctant to raise the federal funds rate aggressively, while ceasing or even reversing sales could ease policy even if the funds rate was still constrained by the zero bound. On the other hand, you may see advantages to using the funds rate target as your active policy instrument while setting asset sales on a largely deterministic path. Because the effects of the federal funds rate on financial markets and the economy are better understood than the effects of changes in the balance sheet, such an approach may result in policy that is easier for you to calibrate and easier for market participants to understand. Indeed, you only turned to the balance sheet as a tool for easing policy once the funds rate was constrained by the zero bound, and there is no corresponding constraint that prevents you from using the funds rate as a means for tightening policy. Of course, there are policy options that fall in between: For example, an approach that increases the pace of assets sales to a limited degree as the economy strengthens and as you determine the pace of sales that markets can bear could permit a more rapid normalization of the balance sheet than sticking with the pace of sales that was appropriate earlier on.

In the staff memo, we also indicated a couple of areas where we thought you would find a particular approach to be preferable. First we see several advantages to redeeming your holdings of Treasury and agency securities once you decide the time has arrived to reduce the size of the balance sheet. Redemptions are operationally simple, transparent, easily communicated, and potentially less disruptive to markets than asset sales. Although redeeming Treasury securities would not result in a speedier normalization of the composition of the SOMA, it would hasten the normalization of its size. Second, in the event that the balance sheet is elevated when you expect to soon begin raising your target for the federal funds rate, we see a strong case for first using reverse repurchase agreements and term deposits to drain some portion of reserves in advance of liftoff. Such an approach will put the Federal Reserve in a better position to assess the effectiveness of the draining tools and judge the size of draining operations that might be required to support changes in the IOER rate in implementing a desired increase in short-term rates. Moreover, it will better

prepare both the Federal Reserve and market participants if it turns out that those tools have to be used in significant size.

In order to cast these strategic issues in more concrete terms, the memo also discusses in some detail two possible exit scenarios. The timing for the two options was chosen so that they yield very similar macroeconomic outcomes in simulations with the FRB/US model, but the advantages of one option or the other do not depend intrinsically on the specific timing assumed in the memo. Of course, in practice the Committee might move more rapidly or more slowly, depending on your assessment of appropriate policy and on economic developments.

Option 1 is intended to maintain the federal funds rate as the primary policy instrument while putting the balance sheet on a path to normalization that takes place at a gradual and predictable pace. Under this option, if the economy were to follow the baseline Tealbook outlook, the staff assumes that the Committee would begin redeeming securities in December of this year, drop the “extended period” language and commence reserve draining operations in March of next year, raise its target for the federal funds rate in September of next year, and begin sales of agency securities in March 2013. Sales of agency securities under this option would be calibrated to return the portfolio to an all-Treasuries composition over five years, and the pace of sales would be adjusted only if economic conditions deviated substantially from what was expected when sales were initiated. The portfolio reaches its steady-state growth path by late 2015, and sales of agency securities offset by purchases of Treasuries continue through early 2018.

Option 2 is constructed to normalize the balance sheet sooner and to use asset sales as an active policy instrument. Under the baseline economic assumptions, redemptions begin in December of this year and sales begin in June of next year. With sales happening sooner and proceeding more briskly, the federal funds rate would not be increased until December of next year, three months later than in option 1. With that timing, the “extended period” language would be modified or dropped soon after the June 2012 decision to begin selling assets, for example, in September 2012, at which point the Committee would also commence reserve draining using term deposits and reverse repurchase agreements. Sales of agency securities under this option would be calibrated to return the portfolio to an all-Treasuries composition over three years given the projected economic outlook. Under the baseline economic assumptions, the balance sheet would return to its steady-state growth path in early 2015, about one year earlier than in option 1, and the last agency security would be sold by August 2015, nearly two and a half years sooner than under option 1.

Of course, a number of variants on these two approaches are also possible. For one, President Plosser has proposed an approach similar to option 2, only in which redemptions, sales, and the tightening of the federal funds rate target begin at the same time. Under his proposed approach, a portion of sales would be deterministic, but sales would also step up during intermeeting periods following an increase in the federal funds rate target. For another, President Kocherlakota has proposed an

approach similar to option 1, except redemptions would begin later, at the same time sales commenced, and principal payments on agency MBS would continue to be reinvested in Treasury securities.

The two options produce different paths for Federal Reserve income, remittances to the Treasury, and realized and unrealized capital losses—that is, the options discussed in the memo, not the options that the presidents introduced. The cumulative amounts of remittances to Treasury under the two approaches are similar, in part because the projected paths for longer-term interest rates in the two options are little different. However, remittances are somewhat lower in the middle of the decade under option 2 because the relatively rapid pace of securities sales at that time boosts realized capital losses. Remittances under option 2 subsequently move above those in option 1 because the earlier completion of sales means that realized losses end sooner. The Federal Reserve would report larger and more long-lived unrealized capital losses under option 1 because of the later start and slower pace of asset sales. The risks to Federal Reserve income and remittances to the Treasury would also differ across the options, as discussed in the memo.

Last week the staff also provided you with an additional background memo on longer-run policy implementation frameworks. In the staff's view, the Committee can choose an exit strategy independently of its choice of a longer-run policy framework. Any exit strategy will likely involve an elevated balance sheet with the federal funds rate target near the IOER rate—as in floor-type systems—for some time. If the FOMC desired to eventually move to a corridor-type system for the federal funds rate, it could do so by continuing to drain reserves until they reached a level that would be associated with the federal funds rate trading above the IOER rate. Alternatively, the FOMC could maintain a floor-type system for the federal funds rate by halting the decline of the balance sheet at a higher level of reserves.

We've distributed a handout titled "Strategies for Removing Accommodation" that reproduces the list of questions for your discussion that was circulated late last week. That concludes my prepared remarks. We would be happy to answer your questions.

CHAIRMAN BERNANKE. Thank you. Are there questions for Bill? Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Bill, in the memo that you circulated earlier, and to some degree in your presentation this morning, there is a hint, but not an explicit statement, of the proposition that the choice between option 1 and option 2, and variants thereon, would be tied, at least, to the relative pace of tightening that we would eventually want to undertake. Is that a correct inference to draw?

MR. NELSON. I don't think so. Just because we calibrated the two options so that they delivered the same amount of monetary tightening, they remove accommodation to the same degree and deliver the same macroeconomic outcome.

MR. TARULLO. So let me ask this question somewhat differently. To what degree would the pros and cons of the two options be different depending on whether the Committee's ultimate choice was a fairly gradual tightening or a fairly rapid tightening?

MR. NELSON. I suppose one advantage of option 2, of sales earlier, is that if the Committee felt that it needed to tighten quickly, it would drain reserves more rapidly and thus set up the commencement of tightening of the federal funds rate sooner. On the other hand, if the Committee felt that it needed to tighten more gradually, it might be reluctant to engage in asset sales earlier because there is a lot of uncertainty about their effect on the economy. It would seem that at a point when the economy might be on less firm footing, the asset sales might pose greater risk.

MR. TARULLO. Okay. Thank you.

CHAIRMAN BERNANKE. There's a question from President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. A question both for Bill and Brian Sack. I think you suggested that we may want to drain in advance of moving the fed funds rate. Do you have any sense of how sharp the market reaction would be in long rates to the beginning of draining? My thoughts: The market would anticipate that that is a precursor, obviously, to moving the fed funds rate, and there would probably be an immediate reaction. Is there any way to estimate how much that reaction would be?

MR. NELSON. I can't think of any way to estimate that. I agree that it would certainly be a communication challenge, if you were to drain and mean it to be just a change in the

liabilities on your balance sheet and not the commencement of tightening. I think people would realize that by draining, you are setting the groundwork for raising the IOER rate and the target federal funds rate. So I think the market reaction would be sharp, but it would in part depend upon the communications.

MR. SACK. I would just add, I think most of us would argue that the statement language is a much better vehicle for conveying information to the market about the expected timing of policy action. And, indeed, one of the reasons that in the memo we put draining after changing “extended period” was just for that reason. I would argue that, through your communications, you should try to make it clear—if you agree—that the draining patterns aren’t intended to be a signal about the timing of policy tightening because I think the statement is a much clearer signal in that regard.

MR. ENGLISH. But that said, I think the basic point is right—when the market perceives that the Committee is starting in the direction of tightening, they’ll react to that, and you’ll see some effect in markets. How large or small that is will depend, I think, a great deal on how that is communicated: what the statement says and, potentially, speeches, press conferences, whatever it is around that. But it will be a moment when communication will be very important.

CHAIRMAN BERNANKE. It would also depend on what expectations were before that announcement was made. President Plosser.

MR. PLOSSER. Is there any reason to believe that that reaction will be any different this time than it would be in any other tightening cycle where we reverse? In most cycles we reverse course at some point. Is there any reason to believe that’s any more of a concern in this period than in any other period?

MR. SACK. I think that in any period, the evolution of expectations of tightening is going to tighten financial conditions in advance of the actual policy tightening. And in most cycles that would occur exclusively through the FOMC statement, because you wouldn't have these other steps in the process, such as redemptions or reserve draining and so on. So I think the ultimate effect on markets is going to depend on the same thing, which is how the expectations of the policy evolve, and it is a matter of managing which policy steps are conveying those signals.

CHAIRMAN BERNANKE. Other questions?

MR. HOENIG. I have one.

CHAIRMAN BERNANKE. President Hoenig.

MR. HOENIG. Just curious. Let's assume for the moment that inflationary pressures become more pronounced and the markets become more convinced that it is perennial if we don't take an action. Which of the options— in terms of either moving your funds rate or selling assets at that point —do you think would have the greatest effect on changing expectations about inflation?

MR. ENGLISH. I guess it is not obvious to me that there would be a big difference between the two. Either way, if the Committee was clear that it was concerned about inflation, that it was taking steps to tighten policy to address those concerns, I would have thought the communication would be clear, I'm assuming, and the market would react appropriately.

MR. HOENIG. Then it wouldn't matter which option you'd choose—at that point you'd want to move more quickly, right? So that would push that option forward.

MR. ENGLISH. The steps would come in more rapid succession, I agree, and I think you could do that under either option.

MR. SACK. My own view, though, is that your big gun is the short rate. So a change in the “extended period” language signaling an earlier, more rapid tightening of short rates, I think, would be your most powerful instrument for tightening financial conditions.

MR. HOENIG. Rather than selling the assets?

MR. SACK. Right. And you can see that in the staff’s simulations right now. At the end of the second quarter when the asset purchase programs finish, the staff estimates about 40 basis points of effect on the term premium from our elevated asset holdings. So selling the assets more quickly would shrink that effect. But, of course, you could achieve a lot more tightening than that, if desired, through the path of the short-term interest rate and the signals that you send about it.

MR. HOENIG. So, you would begin with the repos and so forth to get the rate up more quickly and then allow your balance sheet to run off?

MR. NELSON. You can drain a considerable amount very quickly with redemptions as well.

MR. SACK. I agree with what Bill and Bill said, that the entire sequence could be shifted and accelerated, but I was answering the question: Out of all the tools, what do you think the most powerful tool is? I think we would all agree, it’s still your traditional policy instrument.

MR. HOENIG. Okay. I appreciate that.

CHAIRMAN BERNANKE. Other questions? [No response] Okay. In a moment we’ll begin a go-round to hear views on these and other issues. There are some questions that staff provided just as thought starters, but I’m sure you won’t constrain yourselves necessarily.

[Laughter]

Let me say a word about what I would like to get out of this. I will have to discuss this with the press tomorrow, and I would like to provide as much information as I can, but no more than I should. Certainly, what I will say initially will be that we discussed this issue, that a discussion of the exit process is a separate thing from making the decision to exit, and that it doesn't necessarily signal any change in our stance; it's a separate issue. I want to emphasize the provisional aspects of this—that, as President Hoenig was suggesting, if conditions were different than anticipated, we might want to change the timing, pace, and so on. It would depend on economic conditions, and then our communication will try to provide as much information as possible about that. Those will be some general points, but beyond that, if I can get from this discussion some principles—for example, that the interest on excess reserves is the main tool supported by reserve drains, that the balance sheet will be adjusted in certain ways—those obviously would be helpful. If not, I will just be more general.

One final note on this: The operating framework per se is a big topic and it is not necessarily part of our discussion today, but it does have some bearing potentially on, for example, how quickly we reduce the size of the balance sheet. For example, if we want to use a floor system, we might not need to reduce the balance sheet as quickly. To the extent that the operating system bears on this issue, you should feel free to bring that up. Again, I'll be taking careful notes, and I hope I can come up with some general principles, which I will then review with you to see if I can get a sense of the Committee from this discussion.

Before ending, without trying to preempt the discussion at all, I thought I would make a couple of observations that I found useful in thinking about this. One is simply that redemptions are a pretty powerful tool here. If we were to begin redeeming both Treasuries and MBS in December 2011, as assumed by the Tealbook, that would reduce the size of the balance sheet by

more than \$1 trillion over four years, and we would be back essentially to normal size in four and a half years. Now, that may be too long for some, but my point is only that that's the baseline and that redemptions alone do move us in the right direction relatively quickly. But obviously some may wish to go more quickly than that. And of course, that doesn't account for the need to swap around MBS, Treasuries, and so on to get the composition right.

The other observation I had that I found useful in thinking about this is that it's important for us to keep in mind that, in a policy sense, the sales and redemptions of assets and the movements in the interest paid on reserves are substitutes. To the extent that you do more of one, you have to do less of the other, and as we discuss these policy tools, I think it is important that we not treat them in some sense as independent; they are part of a unified process.

With those preliminary observations, I see President Bullard is first, and we can begin our go-round.

MR. BULLARD. Thank you, Mr. Chairman. I will try to be provocative. I am moderately worried about the Committee's approach to exit strategy so far. Let me give you one of the main ideas I'm going to expound on here and then I will go into the rest of my remarks.

I am concerned about the moment in the exit strategy when we plan to potentially drain very substantial amounts of reserves and simultaneously raise rates. This part seems risky to me because two types of accommodation are being removed at the same time, and, combined with negative economic developments, that could send the economy back into recession right at that juncture. I see that as a possible policy mistake. I'm going to call that the 1937 scenario, and my comments are directed toward getting something a little more continuous, prudent, and potentially reversible as the baseline exit strategy.

Accordingly, I'm going to recommend a version of option 2 from the English–Nelson–Sack memo. I'll give you a defense of the LIFO policy, the last in–first out policy, in my remarks here. I would probably put less emphasis on quickly normalizing the balance sheet than the memo does. The speed, in my view, should be dictated by economic events, not an artificial desire to get back to normal. I have one background remark before I give you my defense of the LIFO policy, and that is that I think QE2 was quite successful by conventional metrics on monetary policy easing. I think any reading of financial market developments since last fall would tell you that real interest rates on safe assets declined, expected inflation increased according to TIPS markets, the dollar depreciated fairly substantially, and equity markets rallied fairly substantially. That's about as classic as you can get in this business for what is supposed to happen around the time of monetary policy easing. I think QE2 was quite successful in that sense, and it is very apparent if you listen to financial markets. I think it helped us considerably in avoiding a scenario like the one observed in Japan over the last 15 years, and now we are somewhat beyond that point.

Now, you might ask, "Why was it successful? How did it work?" I think probably the best explanation of that is that the large balance sheet is a way for the Committee to threaten higher inflation with some probability. With policy rates near zero, higher expected inflation drives real interest rates lower and has all the effects that I just described. This has the same net effect as conventional monetary policy—that is, interest rate targeting. Because the policy had important financial market effects, reversing the policy will undo some of those effects, and I think that we have to be very cognizant of that. We want to be careful, therefore, in reducing the size of the balance sheet, and we want to do it in a prudent way.

Let me give you the defense of the LIFO policy: last in, first out. I think this policy has five important attributes, which I'm going to discuss here in turn. One is simplicity. You're just turning around and starting to go back on the same path that got you to this point. I think that's very easy for everyone to understand and very easy to communicate, so I like the simplicity of the policy. I think it has better reversibility properties. It's easier to pause or even reverse course if necessary, and I'll talk about that. The economy doesn't always cooperate with our best-laid plans. I think it's prudent. As I described, the effects of QE have been pretty substantial. It doesn't really come through in our models in the way it seemed to in reality, so I think we should be very careful about removing accommodation along this line. It's complementary to the future use of IOER and the federal funds rate. You're setting up a situation where you have a lower level of reserves in the system. That's going to help us going forward. And finally, it is politically alert. It avoids unnecessary overreliance on the IOER and the criticism that will naturally flow to the Fed from the overreliance on that mechanism.

Let me take each of these in turn. First, simplicity. The last easing action we took was to build up the balance sheet. The first natural step toward removing accommodation would be to reverse that. I think that's very easy to explain and easy to understand in the context of the most recent FOMC policy actions. When we think about previous tightening cycles, of course, we didn't have this balance sheet policy out there, but now that we do, I think this is the most natural way to proceed. Other sequencing, in my view, is arguably far more complicated and more convoluted to try to explain, for example, why you are going to do step 1 versus step 4. I think allowing balance sheet runoff is an example of this simplicity. It is a very easy thing to do; it reverses a policy change that we made in August. However, I do have one complaint about that aspect, which is that the autopilot route is not optimal under almost any analysis I'm aware of.

It's a bureaucratic response. I can imagine that we might do it to get to a compromise policy on the Committee, but I do not think we should use that as an excuse for not following what would be the optimal strategy.

The second attribute that I said was useful is this reversibility aspect. Unfortunately, the economy does not always cooperate with our best-laid plans, and I think this normalization process, if we can get started on it, will take a long time because we've got an ultra-easy policy. It's going to take quite a while. There are going to be moments during that process when negative shocks hit the economy, and we are going to have to be ready and able to adjust in that circumstance. So the process of reducing the balance sheet through asset sales can proceed at a faster or slower pace as needed. You can go on pause or even increase the balance sheet—you have some flexibility there—and it's reversible if necessary. Again, I think the reason why this policy worked is that it is a way to threaten higher inflation, get higher inflation expectations, and lower real rates in a zero nominal interest rate environment. Draining the reserves all at one time takes that threat away all at once, plus you would increase interest rates. So that would be one view of option 1, and at that point, that sounds a little discontinuous to me and possibly a policy mistake à la 1937. Instead, I would gradually remove the threat of higher inflation by gradually reducing the balance sheet at a pace dictated by events, and then at some point, probably when reserve levels are lower, we will still have to drain the remaining reserves and raise the IOER and the federal funds rate. But we can do that when reserve levels are lower and not when they are at really high levels, as they are today.

The third aspect, I think, is that it's a prudent policy. Again, our baseline models, Tealbook and otherwise, are not well equipped to analyze the current situation. We have little experience here and little historical data on which to base that analysis. We do the best we can,

but I do not think we should rely too heavily on these models to make policy decisions at this juncture. Again, QE2 had substantial effects—take some of that back slowly, keeping inflation and expected inflation close to target.

The fourth attribute is that it is a complementary policy to eventually raising interest rates. Every step along the path of reducing reserves at a pace that respects developments in the economy brings us closer to the normalization of monetary policy that we eventually want to get to.

Finally, the LIFO policy is politically alert. LIFO avoids the unnecessary overreliance on the interest rate on excess reserves. I think a policy of very large reserve balances at large banks, combined with higher IOER, will unfortunately be viewed very negatively across the political spectrum. It is an explosive issue for this Committee: more money to the banks. You're forcing them to hold reserves, then you're paying them more on it.

Obviously, I don't care what people think very much. If it was an optimal policy, then we can and should defend it and we should just say that's the optimal policy. But I think it's not the optimal policy, and it's unnecessary to exit in that particular way. And, therefore, that policy will be difficult to defend. People will be able to say—legitimately, I think—“There are other ways to do this. You didn't have to do it this way.” So, I think it is better to at least begin to reduce reserves via asset sales before we get to the point where we have to pay substantial interest on whatever reserves are remaining. This LIFO idea is simple, reversible if needed, prudent, complementary to the eventual raising of the federal funds rate, and politically alert.

I'm looking forward to the discussion today. I think it will be important, a great discussion. We probably cannot solve everything at a meeting like this, and in any case, no

matter what we decide or think we decide, we will probably have to remain flexible down the line.

Let me come to the questions that were asked by the Chairman that will be easy to answer here. As a first step, should we stop the reinvestment policy? I would say to that, okay, but again, autopilot is not optimal.

Should we actively manage the balance sheet? I have been a proponent of that for a long time, so the answer there is yes.

Should we sell assets before raising the federal funds rate? I think the answer to that is yes. That's been the gist of my comments here, and again, I would let economic conditions dictate the pace of sales.

And on four, which is a set of true–false–uncertain statements: Should we shrink the SOMA to the size necessary to implement monetary policy on a lower reserve base? I think, yes, we should do that. I think that is what normalization of monetary policy means for the United States, and that's how people will understand it. I think it facilitates an eventual transition to a corridor system; at least my understanding of where many members of the Committee are is that we eventually want to be in a corridor system.

Do we want an all-Treasuries portfolio? I say yes to that. And should we adjust sales in response to economic events? I would say yes to that, too.

So that's my insertion of a speech defending the asset-sales-first policy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard, I do have a question about this, which would be very helpful if you would address—one issue about this is the speed. Is there a speed limit? If we think that, say, \$200 billion of sales is equal to 25 basis points—to

take a rough example—then if we were doing 25 and 50 basis point equivalent moves, that might require a very rapid disposition of assets. So, A, there's the market absorbency issue, but, B, you talked about politics. If we were to sell assets that quickly, we would be, I think, more likely to suffer capital losses, which are also not attractive politically. Do you have any concerns about any speed issues on this approach?

MR. BULLARD. On the capital losses issue, I think we have repeatedly and effectively said that we don't make policy here based on capital gains or losses. So I think we have been pretty effective on that, and we can defend that part.

On the speed issue, I think, again, you have this large balance sheet because this is a way to threaten higher inflation in an environment in which you have zero policy rates, and you can reduce it at a pace that keeps inflation and inflation expectations close to target. So it seems as if that could be dictated by events. If you can go faster, you can go faster. I appreciate that there might also be considerations about absorption. And, again, even if you aggressively followed my kind of policy, I think you would get to some point where you said, "Okay. We're going to have to drain the remaining reserves and start to move the funds rate up because it's just not enough."

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Can I ask President Bullard a question? As you're describing your strategy, you're selling out of the portfolio. Is that what you're saying?

MR. BULLARD. Yes.

MR. HOENIG. And that would have effects, but you wouldn't actually change the fed funds rate or the interest on reserves—for how long?

MR. BULLARD. Well, it would be a version of option 2, so I'd wait as long as I could, I suppose.

MR. HOENIG. And conditions would tell you when to make that move—in terms of what? Inflationary expectations, events, and so forth?

MR. BULLARD. I'd definitely keep an eye on inflation and inflation expectations. It is possible you could start reducing the balance sheet and you're really not getting enough bang for your buck out of that, and then you might say, "Okay, we're going to have to drain reserves," and bring out the big gun and raise the funds rate.

MR. HOENIG. Thank you. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Can you repeat? You used a tradeoff number—I just want to make sure I have it right—that a certain number of billion dollars is equivalent to a certain number of basis points. Was that of the fed funds rate's worth of easing?

CHAIRMAN BERNANKE. The staff can correct me. I believe we've viewed \$150 billion to \$200 billion of securities in our portfolio as being roughly equivalent to 25 basis points. Is that about right?

MR. ENGLISH. We were saying that the \$600 billion purchase program was roughly like a 75 basis point reduction.

MR. LACKER. Does it mean if we sold \$1.6 trillion it would be like having a 4 percent fed funds rate, leaving the IOR rate at 25 basis points?

VICE CHAIRMAN DUDLEY. You'd be going from minus 4 to 24 basis points.

CHAIRMAN BERNANKE. We currently have about 200 basis points' worth of ease coming from securities, according to the staff assessment.

MR. LACKER. Attributable to?

CHAIRMAN BERNANKE. Attributable to our excess holdings of securities.

MR. LACKER. Right. I'm just doing the math. If we got down to \$1 trillion on the balance sheet, if we sold all our assets, that would be the equivalent of 4 percentage points?

CHAIRMAN BERNANKE. Two percentage points.

MR. LACKER. But the market wouldn't work the same, right?

MR. ENGLISH. All of these are approximations.

MR. BULLARD. Mr. Chairman, could I make a comment on that issue? Again, I don't think our models are a great guide in this kind of environment. So I think what you should do is experiment with it and then see, in particular, where inflation and inflation expectations go and that would help dictate the pace.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I want to thank the staff for their memos on exit and monetary policy implementation frameworks. I think they hit on most of the important issues that we need to grapple with as we formulate a strategy.

In my view, I think our strategy needs three basic principles. First, I think we need to articulate a plan to the public telling them what monetary policy framework we are normalizing to, then offer them a plan about how to get there. Second, the plan should be systematic to the extent it's possible, entailing some degree of commitment to the way we'll execute the strategy. This will also reduce uncertainty in the marketplace. And third, it should allow for some conditionality on the evolution of economic and financial conditions. Like always, our policy should be state-contingent.

I am in strong support of the corridor system over the floor system as our normal operating framework, although I recognize that we will need to operate on something like a floor system for some time as we exit, given the size of our balance sheet. In my view, the political risks of operating a policy with a very large balance sheet, of potentially unlimited size, are just too great. The floor system makes our balance sheet largely a new discretionary instrument, yet we have almost no theory on how we use this new tool, except perhaps at the zero bound.

How big is too big? What criteria will we use to decide the size of our balance sheet? Without some constraints imposed on the size and uses of the balance sheet, we will find many ideas proffered from all over government as to how we should use it to someone's advantage, whether it be to reduce government debt or to be a development bank for some grand industrial or infrastructure policy. I think these risks overwhelm any efficiency gains one could posit that are associated with the floor system. Besides, the corridor system likely captures the biggest portion of the efficiency gains, so the marginal benefits of going to a floor system, I think, are relatively small.

The background memo suggests that we don't need to decide now whether to use a corridor versus floor system, because we will learn along the way about the calibration between the IOER and the funds rate. True, but this doesn't address my concerns. There will be learning, but I think we need to know where we're headed and to convey that to the public if we are to develop an appropriate strategy because, as Bill said, it may affect the pace of sales you choose and other aspects of your exit strategy. Moreover, clearly signaling that we will be shrinking our balance sheet to a more normal size would help anchor expectations of inflation by reassuring the public that we will not let our large balance sheet lead to higher inflation. If we are to prevent our balance sheet from creating unacceptable inflation down the road, we will have to

sell assets maybe at a pace more rapidly than some would prefer at this point. Thus, one of the aspects that we need to communicate is that we will need to be able to signal to the market that we are prepared to do just that. In the early stages of this crisis, we talked about the speed at which we cut rates and adjusted policy, and we also talked about the chances that on exit, we may have to be just as aggressive coming out as we were going in. And we need to make sure the public understands that we are prepared to do that, if necessary.

Getting to a corridor system will require us to shrink our balance sheet within a reasonable time frame and will require asset sales. If our goal is to return to an all-Treasuries portfolio, we will need to sell MBS. In general, I believe we should aim to sell assets fairly quickly but without disrupting the market. We have argued all along that the effect of asset purchases is through stock effects, not flow effects; thus, I don't think selling assets will be that disruptive, nor do I see why there seems to be so much concern about a moderate pace of sales similar to the pace at which we purchased those assets. Moreover, holding on to assets, which are a good source of collateral in the financial markets, when there is an appetite and a growing economy for these types of assets in the marketplace could be more distortionary than supplying that collateral.

Finally, I think that the pace of sales should vary with economic conditions—that is, it should be state-contingent. Now, I offered one such suggestion on how to do that in my exit strategy memo—namely, because the public generally understands how our interest rate decisions reflect the outlook for inflation and growth, we could tie our sales to the interest rate changes. Let me clarify that I am not suggesting that we use asset sales as a separate policy instrument, as the staff memo seems to suggest; I believe we should rely on the interest rate as our primary policy instrument. Instead, I want our sales pace to be responsive to economic

conditions. Tying the volume of sales to changes in interest rates is just one way of doing that. Actually, the way I think about it, such a strategy eliminates asset sales as a separate discretionary policy tool, as the sales are triggered by the same criteria as our interest rate decisions. If economic conditions are such that we want to raise our policy interest rate, then we should be able to speed up our asset sales, because in such cases economic growth would be stronger and inflation likely to be rising. Once the balance sheet is normalized, we have full control over the funds rate, and, obviously, the sales program would come to a halt. I also think that the alternative of separating these tools and using them independently is dangerous. It risks having either the interest rate instrument or the balance sheet getting behind the curve in our exit strategy.

I think we have less confidence in exactly the effect on market conditions and interest rates from our asset sales than we do about the effect of interest rates, so the degree of tightening we are likely to be achieving with asset sales is highly uncertain at this point. Now, others might prefer a different method of achieving a state-contingent policy. That's fine, so long as we articulate what criteria we will be using for determining that pace of sales. But leaving sales to be a wholly discretionary decision only adds uncertainty and confusion to the marketplace. And making the sales completely unresponsive to the economy by putting them on some predetermined path is likely, as President Bullard suggested, not to be optimal, and it may not even be very credible. Or if the economy was likely to weaken, this Committee would most likely choose to slow the pace of sales if they thought that was necessary.

We justified the first round of asset purchases as credit easing to help stabilize fragile financial markets. Financial markets are no longer fragile. Hence, we should begin unwinding

these purchases and explain that we are doing so not as a tightening move, but as a move toward normalcy as markets return to normalcy.

Let me summarize by highlighting the questions that were submitted in the memo. On question 1 regarding investments, I do think that the natural first step in exit would be to stop reinvestments of both agencies and Treasuries. The natural time to do that is in June when the LSAP2 is completed. I note that the Chairman will have another press briefing in June, and that will give him the opportunity to fully explain what we are doing and add commentary.

On question 2, regarding whether asset sales should be on a predetermined or preannounced path or actively varied with response to the economic outlook, I do think we need to announce a plan so the public understands where we are headed and how to get there. I also think we should vary the pace of sales with market conditions. My guess is that we will do that anyway. Therefore, we should explain to the public the criteria that we'll be using. The idea of tying it to interest rate decisions simply says we are using the same decision for asset sales and interest rate decisions. If you really believe they are substitutes, you could do them together. If you really wanted to calibrate the difference, you could raise interest rates at a little lesser pace and sell assets at a more rapid pace to get the same effect. I'm not as confident that we can calibrate it that carefully, but you certainly could do that.

Regarding the sequencing of actions in question 3, I would not be in favor of delaying liftoff of the funds rate in favor of asset decisions. I think we should sell assets and raise them concurrently. The policy rate will remain our instrument of monetary policy even if, practically, it is the IOER for a while. In my memo, asset sales would simply be a byproduct of the decision, not an independent decision. The point of asset sales is to return our balance sheet to a more normal size and composition so that we can run a corridor system.

Finally, question 4—I agree with all the points. We should shrink the SOMA portfolio to the size necessary to implement our monetary policy framework. I think the framework should be a corridor system. We should return to an all-Treasuries portfolio, which means we will need to sell agency securities. We should be transparent and communicate our exit plan, including how our asset sales will be adjusted in response to changes in economic conditions. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser, I think you did answer this question, but just so I understand it: If you're tying interest rates and asset sales, suppose the Taylor rule says interest rates have to rise by 25 basis points. Presumably, you would then actually raise it by 12½ basis points, and then—

MR. PLOSSER. Well, again, that's where I was talking about the calibration. If we were comfortable enough with the calibration, you could choose to split the difference, if you will. I don't know that I'm as confident about that calibration, but I would be open to discussing that. The key, I think, is that we tie the two together, so that they're not two independent decisions that we are making in some way; that's what I was trying to get at.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I found the staff memos immensely helpful, and I thank the staff for their work on them.

Exit has two components, timing and sequencing, and I will focus my remarks in this go-round on the issue of sequencing. Timing, of course, is critical, but I will have more to say about that in the later go-rounds.

In general, as my own memo suggested, I like the sequencing in option 1. With that said, I will describe three ways in which I think option 1 in the staff memo could be improved. I will

answer the four questions and then close with a comment about the FOMC statements that the staff proposed for use in connection with exit.

Option 1 in the staff memo has four steps that take place over 15 months: step 1, end reinvestment; step 2, three months later, drop “extended period” language and begin reserve draining; step 3, six months after that, raise the fed funds rate; and step 4, six months after that, increase the fed funds rate and begin a gradual process of asset sales.

I would make three changes to this plan. First, I want to continue to reinvest payments received from MBS, because one of the things I felt I learned in 2010 was that failing to reinvest MBS payments is a way to generate pro-cyclical monetary accommodation. More specifically, when conditions weaken and long rates decline, people prepay their mortgages; a policy of MBS redemption then implies a fast withdrawal of accommodation, exactly what we don’t want when conditions weaken. This is a poor paraphrase, I think, of words that Vice Chairman Dudley uttered last August. Hence, when we end reinvestments, we should do so only for Treasuries.

Second, I don’t see the need to begin redemptions before dropping the “extended period” language. We will still need to drain reserves before raising the fed funds rate. Ending reinvestments three months earlier than dropping the “extended period” language will have little intrinsic macroeconomic impact, and I think that it is going to introduce lots of uncertainties into the minds of market participants. What I would be willing to do is to combine what I called steps 1 and 2 of option 1—that is, do three things at once, which is to drop the “extended period” language, begin reserve draining, and end reinvestments of Treasuries all at one time. The staff’s plan defers sales until six months after the increase in the fed funds rate. That deferral is okay with me, but I have to say that I don’t really see the sharp economic distinction between

redemptions and sales. So I would also be willing to start selling MBS and Treasuries simultaneously with ending reinvestments.

Third, as written, option 1 puts six months between dropping the “extended period” language and raising rates. I’m not sure why six months is the right length of time. This was the context of my discussion with Brian and Bill earlier about how much time we really need to be thinking about reserve draining. That’s the operational gap that I think we have to contemplate, but basically I would consider a two- to four-meeting gap, so three to six months, as being a more appropriate interpretation of the term “extended period.” And I think we could do a reasonable amount of reserve draining in that time frame as well.

Those are my three changes. I want to continue reinvesting payments from MBS. I would not use ending reinvestment as my first step. I would, instead, combine that with dropping the “extended period” language and beginning reserve draining. And the final thing is that I think we don’t have to wait six months between dropping the “extended period” language and raising rates. I think three to six months is probably a more appropriate interpretation.

Let me turn to the questions. I have answered a lot of them already, but I’ll go through them anyway. As I said earlier, I would not use redemptions as the first step; the first step should be to drop the “extended period” language and simultaneously begin reserve draining. Redemptions could take place at the same time as that. As indicated, I would want to continue to reinvest MBS proceeds into Treasuries.

I like a slow, largely predetermined path of sales. I agree with President Plosser and Bill that asset sales and fed funds rate increases are largely substitutable ways of affecting the economy. And I think that our economic understanding of the impact of asset sales on the economy is pretty much in its infancy, so I would not use something we don’t have such a good

understanding of as an active tool of policy. We needed to use asset purchases because the fed funds rate was at zero, but we can always reduce accommodation by raising the fed funds rate. If the fed funds rate were to hit zero again—as President Bullard points out, negative shocks could hit us in the midst of what we consider our exit strategy—we may need to slow or reverse the path of sales if the deterioration in economic conditions were sufficiently severe.

My answer to question 3—I’ve used sales and redemptions as basically substitutable ways to reduce the size of the balance sheet. I don’t think that balance sheet reduction should begin before you remove the “extended period” language from the statement. Other than that, I don’t have strong views as to when we start. As long as the staff is confident in the efficacy of reserve draining—and I hope we will be able to build that confidence—sales and redemptions can begin after raising the fed funds rate. I don’t see why we need to wait six months, but I’m also happy to do so.

Okay. On question 4, the true–false–uncertain choices, I think I’ve got “true” on all of these. I realize, of course, there was no right answer to this question, but—[laughter]

MR. PLOSSER. What really matters is your explanation, Narayana.

MR. KOCHERLAKOTA. I’m going to be terse on these. In terms of 4a, I agree with the statement. Consistent with the view expressed in 4a, I prefer a corridor system to a floor system, ultimately. There are definitely some economic benefits to the floor system, which research around the System has pointed to, but all in all, I think the benefits are outweighed by its relative unfamiliarity. I agree with the statement in 4b as well, and I agree with the statement in 4c, except that I always want to be thinking about asset sales and redemptions as being a bundle, a way of reducing the balance sheet as one, so I would talk about asset sales and redemptions being implemented within a framework.

Let me close by saying a word about the suggested FOMC statement about raising the fed funds rate target. This is on page 16 of the exit strategy memo. These are certainly early days to be talking about this kind of stuff, but there are some subtle governance issues we are going to be facing as we move into our exit strategy here. The suggested statement includes a reference to the Board of Governors' action on interest on reserves. I think including the Board of Governors' action in the FOMC statement is confusing and potentially problematic from a governance point of view. I would, instead, make the FOMC statement about the FOMC's actions. The Board of Governors can release a separate statement, presumably at the same time, that could read, "Consistent with the FOMC's change in its target for the fed funds rate, the Board of Governors voted to change the interest rate on reserves to be" whatever it is. Thank you, Mr. Chairman.

MR. ENGLISH. Well, our intention here was to follow what was done in the past when there were changes in the discount rate and we were aligning the discount rate with changes in the fed funds target. We had the FOMC statement and then, at the very bottom of the press release, there were a couple of sentences saying that the Board of Governors had moved the discount rate. So we were not aiming to do anything new here—just what we thought was the standard procedure.

MR. KOCHERLAKOTA. I guess what I'm thinking is, maybe we should be doing something new, given the novelty of the situation. That's all I'm suggesting.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Yes. This is a question both to you, Mr. Chairman, and Narayana. If we think about sales and the IOER—federal funds rate as substitutes, let's suppose the Taylor rule says that the funds rate ought to be 2 percent. Assuming that these are really substitutes, if we

haven't sold assets—and let's just say there's 200 basis points of ease within the portfolio—that means we need to set the IOER at 4 percent. That means if we don't sell, we are going to have to be raising rates faster than we might otherwise choose to do in that environment. Am I understanding that correctly?

MR. KOCHERLAKOTA. That is a correct interpretation of what “perfect substitutes” would mean.

CHAIRMAN BERNANKE. That is right.

MR. PLOSSER. Whew, I'm glad I passed that test. [Laughter]

CHAIRMAN BERNANKE. And by the same token, if you sell, then you can delay the increase in the fund rate. I would point out, just as a factual matter, that if we begin a redemptions process in December of this year, for example, that 200 basis points is going to shrink away pretty quickly.

MR. PLOSSER. Well, over four years, right?

CHAIRMAN BERNANKE. No. I asked the staff to look at this, and because of the anticipation of a declining balance sheet, even though they estimate that there is a 200 basis point effect as of the fourth quarter of 2010, by the fourth quarter of 2012—that is, a year and a half from now—that would be down to 70 basis points just from redemptions. So that part will get smaller over time, even if we just do redemptions. And part of that is because it depends not just on the size, but on the expected path of sales.

MR. PLOSSER. Okay.

CHAIRMAN BERNANKE. Okay. Are we ready for President Fisher? President Fisher.

MR. FISHER. Thank you, Mr. Chairman. You asked for some principles. The principles, or desiderata, that I would suggest before going into the questions are, first, we wish

to normalize the conduct of monetary policy as quickly as economic conditions allow. To me, that means returning to a system of an active funds market in which the funds rate is the principal instrument of monetary policy.

A second principle would be an obvious one but I think needs to be restated—that we support growth in real activity while guarding against both deflation and excess inflation. To me, that means getting the monetary base back on an approximate 5 percent pre-crisis growth path within a reasonable time—say, three to five years.

The third would be to stop distorting the allocation of capital in favor of housing. To me, the faster we get out of MBS, the better. Shedding those holdings need not result in a rapid shrinkage of our balance sheet. We can always reinvest some or all of the proceeds in Treasuries, but I do believe that we must get away from that kind of asset allocation and social engineering.

Fourth, this may be offensive, but I think we must shut the door, lock the key, and throw it away from the principle that we are ever again going to proceed down the path of monetizing the debt of our government.

And, fifth, we should seek to reduce our exposure to capital losses, but I think that any good portfolio manager, particularly given the mix that we have, can balance that out. I don't accept the formal aspect of not worrying about capital losses because of whatever leeway we have been granted by Treasury or other authorities. I think we are subject to political criticism there. Part of my principles, or desiderata, would be to reduce our exposure to capital losses or at least balance out the losses and gains. To me, that means probably reducing and moving away from our long-term exposure as we proceed to sell assets.

And then, the sixth principle, which is very important to me, would be that we, in all our decisionmaking, maintain the full power of the Federal Open Market Committee in making these various decisions. So now let me turn to the questions that were asked.

With regard to the first—Should the first step be to stop the current policy of reinvesting principal payments from agency securities?—the decision to reinvest principal payments was motivated by having the funds rate at zero. To me, it's a no-brainer that we would want to end the reinvestment program as soon as the Committee was convinced that the time had come to start normalizing policy, just as we have now decided or, I believe, will decide—we will see what the policy round indicates—to stop QE2 expansion. I call the principle the “stop digging” principle, and to me I would stop digging at least in terms of mortgage-backed securities as soon as we have the leeway to do so.

In terms of the second question about removing policy accommodation—Would we prefer to put asset sales on a largely predetermined or preannounced path?—I think I have heard my previous interlocutors reference this, but to me the “prudent man” principle applies here. We have never been in a situation like the one we find ourselves in now. You could detect that in the little mini debate or discussion between Bill English and Brian in response to the question of Mr. Hoenig. I think we need to retain as much flexibility as possible to respond to unforeseen or unforeseeable developments as we get back to normal. I do believe some forward guidance would be important. I think President Plosser's proposal is a good attempt to suggest some forward guidance, but we've got to make sure we don't put ourselves in a straitjacket, and not be carried away with confidence about rational expectations or efficient markets. There are some competing needs here. I think we need to allow maximum flexibility.

With regard to the third question about sequencing actions to remove accommodation, and whether we would sell assets before or after or at the same time, I would again suggest that we maintain as much flexibility as possible. I am very sympathetic to President Bullard's argument for LIFO accounting. It is eminently sensible, but, again, maintain flexibility. One advantage of cleaning out the balance sheet before raising rates is that it would at least potentially eliminate the issue of whether the funds rate or the IOER becomes the main policy instrument. I feel strongly that a channel system is preferable, with the funds rate being the main policy instrument and the IOER being some distance below that in normal conditions. But, in my opinion, as long as we have trillions of dollars in excess reserves sloshing around the banking system, the funds rate and the IOER are going to have to move pretty much in lockstep with one another, with the IOER being the real determinant of a bank's willingness to lend out reserves. I am not so sure about the real practicability of the massive use of reverse repos and term deposits to prevent excess reserves from spilling out into the broader economy. I know we've tested those channels, but, given the newness of those instruments, Brian, one might wonder whether they can be used on a scale sufficient to control the excess liquidity that is out there. A middle course of raising the funds rate, IOER, and selling assets all at the same time is probably the best course of action. I think we will have to feel the market to see which is the most effective.

With regard to the statements in the fourth question, the answer is yes, yes, and yes to the first three. With regard to the fourth, about asset sales being communicated to the public in advance, again, I want to be careful we don't put ourselves in a straitjacket. As a former portfolio manager, I would want to maintain as much flexibility as possible. The answer, really, comes down to where I started this discussion or where others have raised the question: What are we trying to get to? What is the purpose of our normalization? I would want to make sure

that we don't put the words before the subject. If we determine the *res*, the reason for what we're going to do, then it might be more easy to communicate what we intend. But, again, maintain the flexibility. Do not place us in a straitjacket. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. I, too, would like to commend the staff on their memo. It was very helpful in thinking about many of the practical issues involved in implementing an exit strategy. I think these are very difficult issues. I have been listening to each person who has gone before me, and I completely agree with the importance of flexibility and with the principles that should be guiding the policy. Many of the thoughts that people have already expressed I agree with, although I come to slightly different conclusions. I am actually, in the end, going to be closer to President Kocherlakota in my views, but I think these are very fine differences, and these are just difficult issues in terms of communication. I think we have to recognize that going forward.

In approaching the questions, I too found it useful to focus on what I thought of as the underlying principles of what we're aiming to do. To me, the most important consideration in designing our exit strategy is to get the timing right in terms of the macroeconomic objectives that we have. Obviously, we have the long-run objective of normalizing our balance sheet. But in terms of the details of sequencing, I think that saying when to begin redemptions or drain reserves or exactly how this is structured should not obscure or hinder our pursuit of the appropriate policy stance.

Now, in thinking about the different choices, I think the evidence shows that the effects of the LSAPs depend on the expectations of the future size and composition of our balance sheet. That's where I start from in terms of thinking about how this works. I view reducing the size of

our balance sheet as working through the same basic channels on the economy as increases in the funds rate, and I see these as being substitutes in terms of the macroeconomy. I also agree with President Kocherlakota's point that both redemptions and sales affect the size of our balance sheet, and I tend to think of those together as opposed to separately. However, there are some critical differences that make these instruments imperfect substitutes in practice. They have already been mentioned. I'll briefly go through two of them. Although our recent experience has provided us with a much better understanding of the effects of the LSAPs than we had just a few years ago, there is still a great deal of uncertainty around these effects. I think the uncertainties about the effects of changing LSAPs far exceed those of comparable movements in the fed funds rate, and this high degree of uncertainty suggests, per the Brainard conservatism principle, that we should follow a cautious and gradual approach to changing the balance sheet going forward.

Second, compared with the fed funds rate, the public still has limited experience and understanding regarding the use of the balance sheet as a policy instrument. This suggests that an active use of the balance sheet, as suggested in option 2, would face greater communication challenges and risks of confusing markets, compared with using the funds rate as our principal policy instrument. These considerations, along with the operational constraints, in terms of the maximum size of asset sales, argue for a steady path of reducing our balance sheet that is preannounced and well communicated. I don't like the word "deterministic" because it obviously could change in response to conditions. But there should be a relatively high hurdle to modifying the path. I think this approach leaves the fed funds rate as a primary instrument of adjusting the stance of policy either up or down in response to change in economic conditions.

This brings me to another consideration in sequencing the exit strategy: the fact that the short rate is currently constrained by the zero lower bound. To me, this argues for holding off on shrinking our balance sheet until the short rate is well away from the zero bound so that we have the needed flexibility to add accommodation through a rate cut if economic conditions warrant. Again, I'm thinking that the fed funds rate is the primary instrument that you move up and down in response to a change in conditions. So, in this way, I think I would prefer to begin the process of shrinking the balance sheet, both in terms of redemptions and in terms of sales, only after we have instituted a few rate hikes, as envisioned in option 1.

Let me go through the specific questions quickly. On number 1, again, I've viewed redemptions in the same way as asset sales, so I would actually prefer to hold off on any reinvestments until after we raise the funds rate. On number 2, I prefer a path of asset sales that is preannounced and well communicated. And on 3, my view is that we want to lift off the zero lower bound first in order to regain the flexibility to use that instrument as appropriate before we begin asset sales. On number 4, I thought that was an apple pie question, and I'm all for apple pie, so I agree with all of the statements in number 4. [Laughter] I am in favor of eventually returning to an all-Treasuries portfolio with a corridor operating framework. Thank you.

CHAIRMAN BERNANKE. Just for my notes, you said to begin the redemption process after raising rates.

MR. WILLIAMS. And basically thinking of it symmetrically with asset sales.

CHAIRMAN BERNANKE. Okay. It's 12:30 p.m. I understand that lunch is ready. Why don't we recess until 1:00 p.m., bring our lunch back here, and we will still be eating at 1:00, but we'll just recommence the meeting at that point. Okay? Thank you.

[Lunch break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence our meeting? We will continue with President Lacker.

MR. LACKER. Thank you, Mr. Chairman. My preferred strategy for removing policy accommodation, like several others of you, would involve using the funds rate target supported by movements in the interest rate on reserves as the primary instrument of monetary policy. I think asset sales should begin quickly, and I'd advocate that they should proceed at a pace that's significantly more rapid than any of the options shown in the staff's memo. I think that at approximately the rate at which we purchased assets is a good benchmark. The pace of sales should be more or less predetermined, and while we should reserve the right to alter the pace in light of incoming information, I think as President Williams said, the bar for such alterations should be set on the high side. I'll explain my preferences before I touch on the four "Exodus" questions.

Our asset purchase program was designed to address problems in credit markets and to ease monetary policy, with short-term interest rates at their lower bound. Credit markets seem to be functioning reasonably well right now, and the zero bound doesn't interfere with using interest rates to remove policy accommodation.

The arguments for using asset holdings as a policy tool, thus, aren't symmetric, and they have less force when interest rates are rising. So for me, our large-scale asset sales program—and I'm assuming we're going to refer to this as the LSAS?

CHAIRMAN BERNANKE. You heard it here first. [Laughter]

MR. LACKER. For me, the LSAS should be designed primarily to return our portfolio to normal as rapidly as possible and to help facilitate, as best we can engineer it, the use of the

federal funds rate target as a policy instrument, and not to use our sales program to make short-term, contingent adjustments to monetary conditions.

Now, it is true that heroic work has been done by the New York Fed staff and others as well to try to estimate the term structure effects of LSAPs, but I think we should be careful not to place too much weight on those estimates. They're not very precise, and the identification assumptions are open to serious questions. As a result, I don't think they provide a really strong, reliable basis for using the LSAS as a substitute for interest rate policy or constructing a policy menu in which asset sales trade off against interest rate increases.

As I said, I think asset sales should occur at a relatively rapid pace—specifically, about the same pace at which we purchased assets, around \$100 billion a month. I see several reasons for doing so. First, I haven't heard any objections or any convincing stories or theories or evidence about how a well-communicated program of sales would impede market efficiency. I am sure that the more rapidly we sell things, the more rapidly prices might fall or adjust, but I think we've all come around to the stock view rather than the flow view. Price effects, I think, are separate from the efficiency effects that I was discussing with the System Open Market Account Manager earlier.

Second, I see high levels of reserve balances as exacerbating the uncertainty about the effects of our policy rate on the economy, and this is evident in the Desk survey. It showed significantly more variation in what the average view of the spread would be with high balances than with low balances, and I would assume that the uncertainty around those estimates is larger for high balances than for low balances as well. I think high reserve balances are likely to push down other interest rates relative to the interest rate on reserves, and as the Manager said, the zero bound undoubtedly limits that effect; I don't think we have a good sense of just how strong

that limiting effect is. So it seems likely that the magnitude of the effect of high reserve balances on other rates relative to the IOER is going to be different; it's going to change as we increase the interest rate on reserves. Related to policy uncertainty is that I think the high level of reserves amplifies the ever-present risk associated with ex post policy mistakes. With \$1½ trillion of excess reserves, banks essentially have many months of rapid loan growth that's prefunded, and they could draw on that if they view lending opportunities as evolving more favorably. Now, this would quickly become apparent, of course, but I don't think we can rule out the idea that inflation expectations would become unhinged simultaneously with an explosion in lending.

Another reason I prefer a rapid pace of asset sales is to get us out of the credit allocation business. This obviously has the most force with the MBS. Our MBS purchases were unique; they were exceptional and motivated by an assessment that the functioning of those markets was in some sense impaired. Whatever one's view about that assessment of market functioning, those unique and exceptional circumstances clearly have passed, and I think we should acknowledge as much by selling those assets quickly. One way to drain reserves without having to rapidly reduce our asset holdings is for us to issue our own short-term debt, and I want to acknowledge the hard work the staff has done to design, build, and test systems for conducting reverse repos and selling term deposits. But I think these are very unattractive tools, and I strongly oppose using them. Issuing new short-term debt in order to reduce reserve balances and in order to avoid having to sell longer-term debt to effect a similar reduction in reserve balances constitutes a really excessive fine tuning of our intervention across the term structure. It sets the precedent of essentially running a hedge fund, issuing—that is to say, shorting—some securities in order to go long on some other securities. This is more credit allocation to the extent that we

use this to avoid having to sell MBS. And if it's Treasuries we're avoiding selling, this amounts to offsetting the term structure of the debt issued by the Treasury. Either role strikes me as fundamentally inappropriate for an independent central bank. We should issue monetary liabilities funded by a broad, evenly weighted portfolio of Treasuries and leave it at that. I understand that it's possible market rates will not track the IOER closely if we raise interest rates before asset sales have made much of a dent in the balance sheet, but if this occurs, let's accelerate asset sales rather than issue our own debt.

Let me briefly address the four questions. Should our first step be to stop reinvesting MBS proceeds? I say yes.

Should we stop reinvesting Treasury proceeds? Here we're asked to think about reinvesting Treasury proceeds or not, and I prefer to think of this in terms of the size and composition of our balance sheet. Given a path for the size of our balance sheet, how do we want to achieve that? My preference is for a corner solution in which, for any given reduction in asset holdings, we achieve it through MBS sales, and under that principle, the next step after halting MBS reinvestments would be to sell MBS rather than stop reinvesting the Treasury proceeds.

Should asset sales be predetermined or preannounced or highly contingent? As I've said, and with due respect to others like President Plosser who have argued for a more contingent approach, I would prefer a relatively predetermined pace. Of course, nothing we do is predetermined, but I'd envision the funds rate being our main tool and there being a fairly high bar for deviating from a preannounced pace of sales.

Should we start selling before or after we raise the funds rate? I'd prefer to move fairly quickly in winding down our balance sheet. I think we ought to move quickly toward selling

assets along the LIFO lines that President Bullard and others have suggested and sell them at a fairly rapid pace, barring some unforeseen dramatic worsening in the outlook.

So, question 4, do you agree with each of the following statements? Yes.

CHAIRMAN BERNANKE. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I also want to compliment the staff on the background memos and an excellent summary of the options for the exit strategy. I found them to be quite helpful.

As I look around the table, it appears, as individuals, we look like we're in pretty good shape, but our balance sheet has put on quite a few pounds. The staff has given us two paths to weight loss, a gradual path of weaning us off second helpings and bad calories and a more aggressive strategy of balance sheet bariatric surgery. [Laughter] Although we don't have to accept either one of these options in its entirety, I personally prefer option 1 largely as it is laid out in the staff memo. I favored this option last year, and I still find it to be a framework that is clear and reasonably simple to articulate.

I'd like our exit process to appear as familiar and understandable to the public as possible, with the effects that we can reasonably predict from past experience. Therefore, I'd like short-term interest rates to be our primary policy instrument.

Turning to the questions that were provided, in response to question 1 on sequencing our actions to remove policy accommodation, I support beginning the exit process by halting reinvestment of principal payments for agency and Treasury securities. I prefer to get to an all-Treasuries balance sheet over time, which taken by itself would favor halting only the reinvestment of agency securities. However, there are other issues to consider, and we could shrink the balance sheet somewhat faster and explain our actions more simply and effectively in

this first phase by halting all reinvestments of both agencies and Treasuries. Next I would begin to increase our fed funds rate target and the IOER.

In response to question 2, I would prefer to commence asset sales some time after we begin to increase interest rates. I would sell agency debt and agency MBS over a five-year period. I strongly prefer to sell them gradually and on a preannounced path. I think that a preannounced path would help to minimize market concerns about surprise asset sales. That approach would also reinforce a focus on short-term interest rates as our primary policy instrument. I'm not in favor of tying asset sales to changes in the economic outlook unless the outlook were to shift significantly. By putting our asset sales in the background, we can again better focus the public on our adjustments to the fed funds rate and the IOER.

In response to the third question, as I said, I do prefer to sell assets some time after increasing the fed funds rate. I don't place a high priority on rapidly reducing the size of our balance sheet. Instead, I envision us operating for some time with total reserve balances in excess of what would be required in a mature interest rate-targeting framework, even though we would be shrinking the balance sheet over the intermediate term through redemptions and passive asset sales. As we shrink our balance sheet through asset sales, I would put greater priority on reducing our holdings of agency securities than Treasuries. As the economy strengthens and we renormalize policy, we should return to the bedrock principle of Treasuries-only that we've followed in the past.

I agree with the statements listed under question 4. I would make one clarification to the third statement because, as I said, I would adjust the pace of asset sales only if there's a significant change in the economic outlook. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman, and thanks to the staff for a couple of very nice memos, which were very helpful in thinking about these issues.

I find that I can't completely separate my current assessment of appropriate monetary policy in discussing the exit strategies here, but I'll try to do that. I think it is important that however we go about approaching this, we want to continue to focus on our policy goals and the loss function that we'll be facing and make the appropriate choices in that way. With that in mind, a couple of the—"principles" is too strong a word, but—things that I'm thinking about are that I favor an approach that allows for considerable patience in our initial steps toward tightening. I think we want to have the opportunity that, if we start embarking upon this and things happen differently than we are expecting with the economy and inflation, we haven't committed ourselves to a path that is too difficult. We want to maintain flexibility, and we want to have flexibility in both directions because, again, things can happen. We want to maintain optionality in each direction. Now, fortunately, I think that both of the options described in the staff memos can allow for this flexibility, and I simply point to the fact that they have calibrated options 1 and 2 to have about the same amount of policy restraint imposed along the way. So I don't find myself in wild disagreement with either approach.

I do continue to modestly favor option 1, which would entail increasing the federal funds rate before we embark on asset sales, but the way that I tend to think about monetary policy is perhaps a little too simplistically, given the complexities that we have right now. I tend to think of it in terms of the single dimension of our policy restraint, and I think I can map a lot of what you're talking about into that dimension.

I do worry a little bit when we talk about how the funds rate is a familiar tool, we've used it before, and everybody understands that. I think that's certainly true when we're able to put

pressure on reserves the way we always have in the past. But as soon as we start wondering about whether or not our reserve draining tools will actually be as effective as we think and whatnot, we're going to be relying on arbitrage between interest on excess reserves and the funds rate. And while in theory that should work, in practice I'm not quite sure how all that will play out. If we find that we start off on that path and, it is not working out, there will be credibility risks, but at any rate, that's the approach I favor.

On the four questions, yes, I think the first step should be to stop reinvesting. I think of this more in terms of the signaling effect that we get from that because of the unique feature of redemptions versus sales. I think the Treasuries could be reinvested if the balance sheet, the size of it and its composition, was satisfactory, along the lines that President Lacker was suggesting. We ultimately want to end up with a Treasury balance sheet, and so if that works, that's fine.

In terms of actively varying the pace of asset sales, that's not my first choice. I would use the reserve draining tools. But if the state of monetary policy required a quicker restraint, then we'd want to consider upping asset sales faster. Ultimately, that could be a point of compromise between the different views.

In terms of sequencing, I think option 1 is best in my opinion, so that would be sales later—again, making sure that the response to the ultimate stance of monetary policy is really important. And I agree with all of the last three statements as well.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. As I think about exit strategy, my philosophy would be driven by three guiding principles. First, tightening occurs when we shrink our balance sheet or raise interest rates. If we were to choose to shrink the balance sheet in the late fall, as in the Tealbook, that would, in effect, be our first monetary policy tightening, even

though the federal funds rate would still be at the zero bound. In my view, the start of any tightening action should be primarily focused on when, looking ahead two to three years, the tightening is needed to prevent us from overshooting our inflation or employment mandate. Second, returning to more traditional monetary policy is desirable and requires shrinking the balance sheet. We should shrink the balance sheet in a way consistent with achieving the right macroeconomic outcome. In the short run, that probably means relying on a floor system. And third, while returning to an all-Treasury portfolio is a long-term goal, it should not be a short-term goal. Given the fragility of the housing market, I would not sell any of the mortgage-backed securities until after we have commenced raising short-term interest rates.

So how would I apply these principles to the actual sequencing? Once tightening was appropriate to avoid overshooting on inflation or employment mandates, I would start by allowing mortgage-backed securities to roll off the balance sheet as they matured, which would begin the process of shrinking the balance sheet. After determining the impact of not reinvesting the proceeds for mortgage-backed securities on long-term interest rates and the economy, and assuming further tightening was appropriate, I would begin allowing both Treasury and mortgage-backed securities to roll off the balance sheet as the securities matured. If even more tightening was necessary, I would consider selling short-dated Treasury securities, which would reduce our balance sheet more quickly without realizing significant capital losses or having as large an effect on long rates or mortgage-backed securities.

If we use a rough rule of thumb that's a little bit more conservative than what was discussed before—\$250 billion in excess reserve reductions as roughly equivalent to a 25 basis point reduction of the federal funds rate—we have roughly six 25 basis point increases in balance sheet reductions. Should the economy falter, we could slow down redemptions, and if

further tightening was appropriate, we could speed up the time we would return to a normalized size for the balance sheet. Given the natural runoffs in the balance sheet once we begin the redemptions, the balance sheet does begin to shrink relatively quickly if we allow both Treasury and mortgage-backed securities to run off, as the Chairman earlier observed.

If even more tightening is necessary before our balance sheet size has normalized, we would begin by raising interest on excess reserves. Given the Tealbook forecast, I can imagine this would be necessary a year or more after we begin the redemption process. I would use the interest on excess reserves as our principal short-term interest rate until we had normalized the balance sheet. After we had normalized the size of our balance sheet and begun raising interest rates, I would commence with sales of mortgage-backed securities. However, depending on housing conditions, the status of Freddie and Fannie, and our willingness to realize capital losses, I could imagine extending the asset sales to be more gradual and to have an all-Treasuries portfolio by 2020.

In terms of the four questions asked, for the first one, I am fine with reinvesting the principal payments from agency securities, but as I just mentioned, I would stagger it. I would start with mortgage-backed securities and then let the Treasury securities roll off. The reason I want to shrink the balance sheet is that I have somewhat more uncertainty about how the tools are going to work with large excess balances, so I would actually prefer a strategy that gets our balance sheet to shrink initially, just to have more certainty about how our short-run tools are going to work.

In terms of the second question, I think we could conduct it much the way we did the increase in securities. We would announce a reduction in the balance sheet over a fixed period of time, but it would be conditioned on what the economic outcomes were, and we could change

either the time or the amount, but the presumption would be that we wouldn't change it unless something relatively significant had occurred.

In terms of sequencing in the third question, one of the challenges is that sequencing in part does depend on conditions. So if we're going to have a very gradual tightening, then a strategy of asset redemption may actually take care of, at least initially, some of the tightening that we would need to do. If it needs to be more rapid, then we have to include not only asset redemptions, but also the interest on excess reserves going up.

And in terms of the three statements in the fourth question, despite all of us having guiding principles that are different, I think we all agree on all three of the statements.

CHAIRMAN BERNANKE. It shows there is constructive ambiguity. [Laughter]
President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I, too, would like to thank the staff for their framing of a complex set of issues and tradeoffs. Before I answer any questions, I'd like to express some preliminary views.

First, as others have said, I see the endgame as a return to a balance sheet configuration that aligns with more-normal conduct of monetary policy and has the best chance of effectiveness in shaping economic conditions consistent with our mandates. I see that configuration as all-Treasuries, scaled at a level that supports the use of the fed funds rate target as the central policy instrument operating within a corridor structure.

To some extent, removal of accommodation will effectively begin with an announcement effect resulting from our first communication about exit. I think it is possible with good communication to limit the announcement effect on the announcement of ceasing reinvestments, and I think we may be able to limit an announcement effect even with the initiation of small asset

sales, but this will require skillful communication, and it seems to me that the timing would best coincide with the Chairman's press conferences so that he can explain that a rise in the fed funds rate is not necessarily imminent.

The unknown of the announcement effect associated with the first step may be an argument for not taking this action too far in advance of the decision to implement the full exit plan. I think the objective should be that any substantial announcement effects on long rates would occur when we have decided to actively begin removal of accommodation and not before. Said differently, I'd place a high priority on avoiding any actions that inadvertently cause policy tightening to begin before the Committee has arrived at a consensus that tightening is warranted by economic conditions. Because in my view we will be in new territory in unwinding the policy actions of the last three years, I prefer an approach that recognizes that there are a number of unknowns. This in my mind argues for a simple and conservative plan that minimizes the risks of market distortions and can be relatively easily communicated. I would favor an accelerated pace of asset sales only to the extent that policy effectiveness and market function are not put at risk.

With those preliminary comments, let me give answers to the four questions. For question 1, I agree that the first step should be stopping reinvestment of principal payment of agency securities, and I would also stop reinvestment of Treasuries at that time.

For question 2, along with the question of starting the cessation of some or all reinvestments comes the question of when. My thinking is that we would stop reinvestment when the Committee agrees that conditions have evolved to the point that any notion of QE3 can be taken off the table. I favor a predetermined and announced-in-advance path for asset sales. There may be some learning involved as the asset sales proceed, so my preference would be for

an approach that is relatively conservative in terms of the pace of sales. As I said, I do not view a quick reduction of the balance sheet as an end in itself. I would not want to implement sales at a pace that would add a lot of de facto tightening beyond what we intend with interest rate policy. I think it will be possible to communicate a predetermined asset sales program and at the same time convey that the program could be revised or halted if conditions dictate.

For question 3, I would prefer to start asset sales simultaneously with beginning to move the fed funds rate and the interest rate on excess reserves. Given the unknowns, I'm wary of too much sequencing and too many moving parts that have to be coordinated. In my thinking, when the Committee decides it's time to move, all the wheels are set in motion.

I agree with the thrust of the statements in question 4. In some respects, I think the exact process we use to remove policy accommodation is less important than our communications about the timing, magnitude, and conditionality of our planned actions. I would not want any early communications on a framework to impact private expectations in such a way that we end up with a de facto removal of accommodation before we make the decision to change the policy stance.

To summarize, the approach I would recommend tries to achieve simplicity and the least risk, and it's really a two-step approach. At a point not long before active exit, we cease reinvestment of both MBS and Treasuries. Then, simultaneously, we raise the interest on reserves rate and the fed funds rate target, and begin a gradual, orderly, preannounced program of asset sales. We leave to the Desk the decision on draining operations as a tactical move to improve the ability to hit the fed funds rate target, and we communicate that the pace of sales will be reviewed periodically in light of economic conditions. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. A couple of people around the table have mentioned 1937, and I think it's an interesting comparison and one we should keep in mind. I think it was in that period that we have some similarities to today. There were efforts to increase taxes and concern about excess reserves that were sloshing around, and I think we doubled reserve requirements overnight, which caused a major shock to the economy. And I certainly would agree that we do not want to shock the economy. And I don't think we're going to double reserve requirements—I certainly hope not—or take actions that would move us in that direction.

The second thing I want to observe is that, as we deal with this exit strategy, I think we will be adjusting it as we learn because whether you like the definition of “perfect substitutability” or not, we have no idea what the substitutability is between our fed funds rate moves and our removal of the sizable assets on our balance sheet. So it's going to be a careful learning experience for us.

The third thing I want to note is that in part our comments on option 1 or option 2, as I have listened to them around the table, depend on our own intuitive feel for how close we are to needing to take action. I can understand that, because it has influenced my own view; I think that as we look at the economy today, we should be talking about where we are in terms of our accommodation, and that we should in fact be thinking about removing accommodation. It is highly accommodative, as we will talk about later today and tomorrow, and we need to think about doing that. That means I would focus on the fed funds rate, as we always do. And to your point, President Bullard, I think that is what people understand best. They don't understand QE3; they just know it's out there. But they do understand moving interest rates, especially the fed funds rate. And that's what we need to focus on. One other point—I don't know that we

will know whether QE2 has been successful at least until the year 2015. It's a long, long gestation process.

Around those issues, then, how do I answer the questions? How do we proceed, subject to the idea that we need to be thinking about our fed funds policy? I do say yes to the first question that we should in fact stop reinvestments as conditions allow us. But my first step in the exit strategy is to change the forward guidance from exceptionally low interest rates for an extended period of time. That is the key, that is the signal, and we should be thinking about that as we think about exit. With that, our next move should be to move the fed funds rate up—1 percent by year-end or something—but that means the process has started.

Then, the second question. I think, after raising the fed funds rate to some point, I would pause and assess our economic prospects—where we are, what the effects have been, whether we shocked the market, what are the conditions. When and if conditions warrant, I would then begin again to normalize policy at a deliberate pace, raising the fed funds rate and redeeming and selling securities concurrently to the extent that we can. There is judgment here. We would regularly review changes in the fed funds rate and asset sales in light of incoming information and adjust the exit program as needed to best foster maximum employment and price stability—long-term, stable variables, not short-term ones. As long as conditions unfold as expected, I would also expect to continue normalizing policy at some regular pace. Of course, if economic conditions do not unfold as expected, then we should prepare ourselves to normalize policy more or less rapidly based on those conditions, as we judge them at each meeting.

For the third question, my preferred sequencing is that we raise the fed funds rate from its crisis level to closer to 1 percent as quickly as possible, ideally by year-end. I believe we should then normalize both the fed funds rate and the balance sheet in terms of size, composition, and

duration. I think that part of the reason we are doing these repos and so forth rather than selling assets is that we want to keep the duration on our balance sheet and out of the rest. I think we should try and get that transitioned as well, so we should be selling assets as we can, and on a faster timeline as well.

On question 4, yes, I agree. Of course, my definition of “intermediate term” may differ from your definition of “intermediate term.” And that should be a discussion that we have here. I think it’s important. I would expect that we can renormalize policy and our balance sheet more timely than either option 1 or option 2 outlines. But I am willing to debate that over time, as long as we get on the path to take this excess accommodation out of the system before we get a very bad surprise on the other end.

With three interest rates—the federal funds rate, the interest rate on excess reserves, and the discount rate—I believe we will eventually move to either a floor system or a corridor system. Before making this decision, though, I would prefer to see how events unfold as we move toward a more normal stance on monetary policy overall. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. My preferences pretty much track option 1. First, I prefer to start with ending the reinvestment of agency debt and agency MBS. While I agree with President Kocherlakota’s point on the pro-cyclicality of agency MBS, and because I made that point last August—[laughter]—I would point out a couple of important caveats that I think make it less important right now. One, the amount of prepayments is actually quite low today. Two, if we are actually tightening and long-term rates are going up, then the prepayments will drop even further. We won’t be in that range of where the pro-cyclicality is very powerful. And, three, if the economy is strengthening and housing turnover picks up, the

pro-cyclicality will actually go the other way. We will get more housing turnover, and there will be more churn in the agency MBS market from a healthier housing market. So I am willing to accept what I would view as more limited pro-cyclicality in exchange for wanting to shrink the balance sheet. Second, I would end the Treasury reinvestment. And third, I would eliminate the “extended period” language.

Now, whether you do these as a package or you do them in a sequence, I think it really depends on economic conditions at the time. I really don’t want to prejudge whether we do all three together, or whether we do one and then the other and then the other. It depends on why we are tightening monetary policy. I can imagine if we were tightening monetary policy because inflation expectations were rising, we might want to do it in a more subdued sequence. But if we saw that the economy that was very strong, we might want to do it all together as a package.

Second, I’d drain a large quantity of reserves. I don’t think this is absolutely necessary for the conduct of monetary policy, but to the extent that people are worried about the large quantity of the reserves in the banking system and that this could lead to an inflationary problem, we should take steps to attenuate those concerns.

Third, I would raise the interest rate on excess reserves. I do believe this tool is sufficient to manage monetary policy. The signal I take away from the change in the deposit insurance premiums and its impact on the IOER–fed funds rate spreads is that the arbitrage works pretty efficiently because we had a little test case here where we basically changed the arbitrage conditions slightly, and we had a slight impact on the IOER–fed funds rate spread in a way that was pretty predictable. So this tells me that I think the arbitrage is going to work pretty well. We’ll see a federal funds rate that is modestly below the interest rate on excess reserves.

And then, last, I would sell the agency MBS and agency debt assets, and I would do so at a measured, predictable pace. I don't think it's necessary to sell these assets; I'm less hung up on the fact that we have agency MBS assets on our balance sheet. But in the medium term, I think the Committee has a consensus that we want to go back to an all-Treasury portfolio. If you want to get there in any reasonable time frame, then you are going to have to sell agency MBS.

I don't believe it makes sense for time-varying sales tied to changes in interest on excess reserves. I think it is too complicated and too difficult to explain. Also, if the sales effect works through changes in expectations on how fast the stock is likely to change, shifting around the sales rate will cause changes in people's views of what the future stock is likely to be. I think that will create volatility in longer-term rates and might even lead to a higher risk premium and higher long-term rates as a consequence. So I think that's a risky strategy.

I generally believe that the sales rate should be relatively slow, because faced with a choice of a flatter yield curve or a steeper yield curve, I would favor a flatter yield curve. The more you rely on asset sales, the more you are going to steepen the yield curve, which I think potentially has negative consequences for financial stability. Also, the more asset sales you do, the more likely you are to incur losses on your portfolio that can create political difficulties for the Fed and potentially pose a threat to the Fed's independence. So, on the asset-sales side, I would like to go relatively slowly. The asset sales pace, of course, could be adjusted, but I think the bar to adjustments should be pretty high because I don't think we want to create uncertainty about what those stock effects are likely to be over time.

With respect to question 4, I think that we all agree that we want to go back to a SOMA portfolio that is no larger than what is consistent with implementing our monetary policy framework. But we should recognize that that size might be somewhat different, depending on

whether we are going to a floor system or a corridor system. We might want a slightly bigger balance sheet if we are headed to a floor system. I think it is premature to decide whether we want a floor system or a corridor system, because we are going to find out a lot about how well a floor system works over the next few years. If that system works very well, we might decide that the simplicity, in terms of how you actually implement a floor system, might make it attractive. So I wouldn't want to rule it out a priori.

I think we should be heading back to an all-Treasury portfolio, but we shouldn't be heading back to the same Treasury portfolio we had before. I think we should have a Treasury portfolio that is much more weighted toward short-term Treasury securities, so that in a crisis you can just let the Treasury securities run off very quickly—you don't have to sell Treasury securities, and you don't have to worry about whether you are taking losses. At some point, it's going to require us to actually buy a bunch of short-dated Treasury securities, if we agree that that is a good portfolio to have. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thanks, Mr. Chairman. I wanted to follow up on this point that I learned from Vice Chairman Dudley last August, and now I'm apparently going to have to unlearn it. [Laughter]

My concern is that if we adopt a policy of redeeming MBS—suppose we do that in December 2011—and conditions soften in 2012 and longer-term rates fall, we will then be put in the position of stopping the policy at that point, because it could well be at that stage that we will begin to see people starting to pay down their mortgages more rapidly, just as we did in August 2010. My vision, as I think I have heard from others around the table, is that the balance sheet track should be going on slowly downward in the background. If we redeem MBS, we are going

to be in the position of balance sheet management immediately. That is what I took away from that.

VICE CHAIRMAN DUDLEY. Can I respond to that? I think what you are describing is an environment where you don't want to be tightening at all. If you start tightening and then all of a sudden decide you don't want to be tightening, then I don't really have a problem reversing the agency MBS reinvestment policy.

CHAIRMAN BERNANKE. Okay. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. And let me add my thanks to the staff for their helpful background papers and to President Plosser for his thoughtful memo.

As I reviewed those materials, I was struck that the problem before us is a classic example of an underdetermined optimization problem. There are a number of free parameters and a multiplicity of ways we can set our instruments to attain any particular macroeconomic outcome. In selecting among the various options, I believe we should focus on approaches that, first, serve to simplify and, therefore, facilitate our internal decisionmaking as we respond over time to evolving economic developments. And, second, we should focus on approaches that facilitate clarity in our external communications to the public.

An analogy might be helpful in explaining what I have in mind. Imagine that our Committee is the flight crew of a Boeing 747. We need to land at night at a nearly deserted airport, but we discover that the air traffic controller has fallen asleep on the job. [Laughter] The good news is, we have a brilliant and highly experienced pilot, and all of us trust him to accomplish a safe landing. Nonetheless, we have to keep in mind a few key facts. First, the instrument panel of a Boeing 747 has lots of dials and instruments. There is no unique right way to adjust them during the approach. Second, the cockpit is crowded, and the crew needs to work

together harmoniously to execute a successful landing. And, third, the passengers are all listening on the intercom system—[laughter]—and may be prone to panic. Our communications need to be clear, simple, and reassuring.

How does this analogy apply to our exit strategy? Well, first and foremost, I suggest that we agree on where we're landing. [Laughter] In the context of our exit strategy, where we are landing includes a number of distinct components. The first relates to our dual mandate objectives. We need to be clear, both internally and in our public communications, that, first and foremost, our exit strategy is designed to facilitate their attainment. Second, the Federal Reserve is also responsible to contribute to the effective and efficient functioning of financial markets, so we should avoid needless disruption. And, finally, there are questions relating to the ultimate size and composition of our balance sheet and the operating strategy we've planned for the conduct of policy when life returns to normal. I consider it desirable for us to decide and communicate early our decisions concerning all of these matters, not leave them unsettled for months or years to come.

In this regard, I support all three principles listed in item number 4 of the "Questions for Discussion" handout, and I think it would be very helpful, Mr. Chairman, for you to convey them in your press conference tomorrow. I think it would also be beneficial for us to reach some consensus on our long-run operating framework. And I personally could support a return over time to a corridor-style operating framework in which the fed funds target is our primary instrument of monetary policy, even though I do see some advantages of a floor framework.

Turning next to our landing procedures, the memos and our previous discussion make clear that there are many options consistent with any given macroeconomic outcome. All in all, I see a strong rationale for following a KISS—or Keep It Simple, Stupid—approach. I see a

compelling case for setting the path of the federal funds rate target in a state-contingent manner that would be consistent with our past practice and with market experience and expectations. Those of us in the cockpit have followed this approach in the past, so it should facilitate our decisionmaking process. For the passengers, too, it is familiar, and therefore likely to be reassuring. And, in particular, I would be strongly opposed to an exit strategy in which adjustments for both our balance sheet and the federal funds rate target are highly state-contingent.

Making use of two monetary policy instruments at the same time has no clear benefits but would surely introduce a further layer of complexity into our decisionmaking process and our public communications. I think we should follow a largely predetermined approach to normalizing the size and composition of our balance sheet. I would prefer for us to agree on that approach as soon as possible and explain it clearly to the public.

Regarding the initial stages of the descent, I would support stopping reinvestment of principal as a first step, and my assumption has been that that would include both Treasury and agency securities. But I think it would be useful, in light of the issue that President Kocheerlakota raised, to maybe just see a bit more staff analysis on the implications of allowing MBS to run off. I suspect that a decision to suspend our reinvestment policy will clearly signal the onset of policy firming to the markets and the public. Therefore, I am not certain there is any particular advantage in waiting to drop the “extended period” language. It might, instead, be helpful to follow a simpler exit sequence in which we move simultaneously to suspend reinvestment policy and change our forward guidance.

Turning to the issue of asset sales, I think they should be gradual, predictable, and announced in advance. Beyond that, I am open to considering various possibilities. For

example, I would be open to decoupling our strategy for normalizing the size of the balance sheet from our strategy for normalizing its composition. My assumption is that it is the size of our longer-term securities holdings, rather than their composition as between agency and Treasury securities, that affects term premiums and the stance of policy. I also assume that such a shift would have only a negligible effect on MBS spreads. If these assumptions are correct, we could begin to normalize the composition of our balance sheet fairly soon. For example, the Desk could initiate gradual and predictable sales of agency MBS maybe on the order of \$10 billion or \$15 billion a month, reinvesting the proceeds into Treasuries.

I would only want our balance sheet to begin shrinking when we have concluded that the process of policy firming should commence. When that point arrives, though, along with suspending the reinvestment policy, we could also stop rolling over the proceeds of these MBS sales into Treasuries. This strategy would facilitate a moderately faster shrinkage of our balance sheet and would reduce the quantity of bank reserves by a nonnegligible amount before any increase in IOER. An advantage of this strategy is that, with a smaller quantity of reserves, we may have greater confidence in the ability of our reserve draining tools to sufficiently tighten the link between IOER and the federal funds rate. I may be wrong to worry about this link between IOER and the federal funds rate, but, like President Evans, I do have some concerns about how tight that link will be. And I think a tighter linkage between these rates would prove helpful for both internal decisionmaking and external communications.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I would also like to commend the staff for the work on the memos, and I will confess that I failed to identify this as an underdetermined optimization problem. [Laughter]

Over the last several years, I have supported asset purchases as our only option for easing. But when it comes time to tighten, we can return to the short-term interest rate tool, and I believe we should. I agree with Brian Sack; it is still the strongest tool in our kit. I can't quarrel with the political risk of maintaining a large balance sheet or the credit allocation argument. But, still, I favor the use of the short-term interest rate tool whenever and as soon as it's available and would address our concerns about the balance sheet only when our interest rate tool is fully functional again. We have experience with it. The public has experience with it. It's easier to calibrate and to communicate.

In December 2008, when we made the decision to reduce the fed funds target to its current level, I worried about many of the consequences that we've discussed again here today—the narrow potential for spreads to adjust to preferred levels, pressure on the recovery of operating costs in money market funds and in banks. I am also concerned about the potential distortions created by near-zero short-term interest rates. So I favor the strategy that gets nominal short-term rates back into a normal range the soonest. I say “short-term interest rates” because I think there is some risk in focusing on the fed funds rate as long as that market is limited to GSEs and a handful of counterparties. I think the lesson we should take from the recent experience with the FDIC assessments is that short-term markets may react differently depending on whether they are dominated by U.S. banks that can earn interest on excess reserves and must pay FDIC assessments, foreign banks who can earn interest on excess reserves but do not pay FDIC assessments, or other players who do not have access to excess reserves as an investment alternative but also do not pay FDIC assessments. Along these lines, I believe we may observe different results in the use of the reverse repo tool compared with term deposits,

and I believe banks will bid differently on term deposits when they are offered in size and with an expectation of increasing rates.

I'm a little bit concerned about the airline analogy, because now I am going to talk about throwing fuel overboard in order to reduce our landing weight. [Laughter] While I favor the exit sequence outlined in option 1, I fear that we might have to reduce our balance sheet more than we think to get reserves down to the point where temporary draining tools can tighten the link between IOER and other short-term rates.

Turning to the specific questions asked, I agree that the first step should be redemption of agency securities, and I would favor redemption of Treasury securities only if that step was not anticipated to push back the first use of the interest rate tool. I would put assets on a predetermined, preannounced path, subject to infrequent adjustments. I would not be in favor of any asset sales that delayed liftoff of the funds rate. However, once the funds rate was returned to a level that allowed us to use it for tightening or easing—say, fed funds at 2 percent—then I might favor asset sales that reduce the balance sheet more rapidly but delay further increases in the funds rate. I agree with all the statements in question 4, as long as adjustments to asset sales are not viewed as an active policy adjustment tool. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Bill Nelson suggested that there may be some variants on the two options he presented. I have counted 14 so far. [Laughter] And I think I am going to use a strategy taken in the very best exam that I ever read from any of the roughly 2,000 students I have ever had, which was to refuse to answer the question that I had put on the exam. I should also add some of the worst exams I ever got were ones that followed a similar strategy. [Laughter]

As I have listened to everybody today, I am a bit concerned about where we're heading and what we think we are communicating by this discussion. And mindful of the Chairman's introduction where he suggested we are trying to find some principles, I am going to try to identify some principles rather than programs. I think many of you have felt the tension between these and have suggested where there is some flexibility or where you are open to other things. But for present purposes, I think it is particularly important to arm the Chairman with a smaller number of first principles that can be developed, as appropriate, over the coming meetings.

First, I think that the strategy we pursue here should be about, and principally about, our monetary policy aims in the short run. That may sound almost tautological, but I don't think it is. Some people are offended by having MBSs on the balance sheet, and some people are worried that we appear to be monetizing debt by having Treasuries on the balance sheet. Well, we've got both of them on the balance sheet. And those decisions were taken, and I wouldn't want to see our exit strategy affected by some idealized desire to either have or not have some of these assets on the balance sheet as an ongoing matter. Let's instead focus on what is the best way to achieve, as we believe appropriate, the removal of accommodation when the time comes. So that translates into, I think, a fair number of operational decisions that need to be made along the way, but ones that should be pretty straightforward.

Second, as the Chairman suggested, I think anything that we communicate ought to be provisional. And although I didn't take the notes that he's been taking, because I don't have to synthesize everything, it seemed to me that at least half of you have suggested—whether state-contingent or provisional or conditional—some adjective that suggests we shouldn't be locking ourselves in too much right now.

Third, I also would like to see a pretty clear separation of the “when we exit” from the “how we exit” questions. I think Tom is absolutely right—everybody’s views are affected, at least on the margin, by our policy predispositions. But, again, in terms of public communication right now, I think it’s really quite important to keep those distinct, even though it is perfectly legitimate to address both of those questions.

I would say that my fourth principle would be a certain degree of caution, particularly with respect to unintended consequences of things we don’t understand as well as we wish we did. Narayana suggested that we don’t rely too much on models for thinking about what the impact of large-scale asset sales will be, and I think that’s a caution well taken. I, like Bill, worry about yield curve effects if, for example, you had too many assets sold too quickly. Listening to you and trying to pull some of what different people have said together, it seems to me there have been concerns about getting the balance sheet to a manageable state so that our effect on the federal funds rate will proceed as we would like it to. At the same time, a lot of people have shown concern that there not be too much riling of the markets because we are not really entirely sure of how asset sales will be received. A number of you have also said that some measure of predictability will both advance the aim of avoiding too much riling of the markets and allow people to plan a little bit more going forward.

All of those suggest to me that a fairly cautious but straightforward and largely, though not totally, predetermined approach to asset sales, redemptions, or both is probably what’s warranted here. I see a certain appeal to going in reverse, what Jim described as the LIFO approach. But I think there are a couple of points of distinction that we should be aware of. One is that the effects of these sales may differ from the effects of the purchases of the same assets precisely because the macro and financial environments in which the transactions are taking

place are quite different. Second, to a considerable extent, we didn't have a whole lot of choice about the sequence that was followed on the way in. You guys moved interest rates down to zero before I got here. Then you had your "extended period" tool, and then it became necessary to think about large-scale asset purchases. But on the way out, we do have a choice, and I think that assessing the pros and cons of various sequences and various combinations is probably the better optimization of policy here.

There are multiple instruments available for the removal of accommodation, and I think a number of you have identified them. I genuinely don't have strong priors on those, so I would just reiterate that I think the principle should be a focus on the desired near-term monetary policy effects, thereby putting into a secondary position what I termed "idealized aims"; second, that this is provisional; third, that we separate "when" from "how"; and, fourth, that, particularly with respect to asset sales, we try to adopt a gradual and predictable approach. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. I appreciate the richness of this debate regarding the parameters of exit, and while I believe it premature to begin the exit program, it's certainly not premature to discuss the contours of what will be a process that, if poorly conceived and poorly communicated and poorly received, could lead to unintended macroeconomic consequences. For that reason, I applaud the fact that we're now having this discussion, and while not being present for the precursors to the analysis that began in April of last year, appreciate both that there's been a lot of careful thought on this topic and that the duration and components of the accommodation are different now than they were in April of last year.

I have several observations. First, I want to underscore the Chairman's view that public statements regarding exit not confuse the notion of "when" with the notion of "how."

Second, both options for sequencing, as presented in the staff memo, assume that a sizable amount of reserve draining will be conducted before the first anticipated increase in the federal funds rate target. I'm still grappling with how such a sizable amount is going to be reduced in a mere six months in option 1 or in a mere three months in option 2. I understand President Lockhart's concern about starting the draining too early, but if reserves are as high as \$1.6 trillion and the required reserve level at which movements in the federal funds rate affect loan balances is at something like \$74 billion, how do we drain \$1½ trillion in the short period of time without disruptions? If these reductions prove to be too slow and there is strong evidence that a recovery is self-sustaining, perhaps we would then feel it necessary to engage in some accelerated asset sales ahead of a preannounced schedule in order to drain.

Third, I want to make sure we understand the current effect of the GSEs in the federal funds markets. Commercial banks are awash in reserves. So my question is whether the largest sell-side participants right now are Fannie Mae and Freddie Mac. Now, footnotes 17 and 18 of the staff's memo on the long-run policy implementation frameworks describe why limits to arbitrage have resulted in market rates typically being in the range of 10 to 15 basis points below the interest rate on excess reserves. So if we suppose that the Chairman and the Secretary of the Treasury agreed that Fannie and Freddie could no longer be part of the federal funds market, would we then remove the ability for commercial banks to trade with the GSEs in such a way as to eliminate the gap between market rates and the interest rate on excess reserves? So then if the federal funds rate were at the IOER, the FOMC, it seems to me, would have greater control when it begins to raise the IOER because the fed funds rate would move exactly with it.

Fourth, regardless of whether Fannie and Freddie remain part of the federal funds market, I want to underscore the communication challenge that was raised by President Bullard and others that will need to be addressed, and that is that raising the interest rate on excess reserves will result in annual payments to banks, which will certainly require some explanation to the Congress and others in the public.

Finally, when we discuss asset sales, we assume that such sales include sales of Treasuries in addition to sales of agency debt and agency MBS. As we've heard, there are permutations to how these sales are executed that involve sales of one type before sales of another type, and from this perspective, I think it's worth remembering that MBS have a more direct linkage to mortgage rates than do Treasury bills. Also, it's worth noting that President Kocherlakota's observation regarding the pro-cyclicality in MBS sales needs to be factored in ahead of time as well, if we decide to start MBS sales ahead of Treasury sales.

I will turn quickly to the questions. One, Should the first step in exit be to stop the current policy of reinvesting? I would say, yes. I think that redemptions would generate a significant reduction in the balance sheet under an approach that is operationally simple, easily communicated, and not disruptive to markets. For the second question, it is also my view that putting asset sales on a largely predetermined and preannounced path is preferable. I haven't yet bought into the full substitutability of the two tools primarily because of a lack of a robust experiment in that regard. Third, at this moment I probably would favor starting to sell assets after the increase in the federal funds rate. I don't place a high priority on reducing the size of the SOMA portfolio quickly, especially if that would delay liftoff of the federal funds rate. Of course, I would say that subject to the caveats I mentioned regarding the ability to drain or a

dangerous supply shock that would trigger a big jump in inflationary expectations. And I do agree with the three statements in question four. Thank you.

CHAIRMAN BERNANKE. Thank you very much, and thanks, everyone, for a very useful discussion.

In terms of synthesizing [laughter] this discussion, we have a short-term and a long-term issue. In the weeks ahead as the staff adroitly puts together the minutes, as they always do, I hope that they will go carefully through the transcript and try to identify the main themes that will help us think about how we'll go forward.

I have a more immediate problem, which is that tomorrow I'm going to be asked what the Committee has determined about exit strategy. So I'm going to try to put some principles or bullet points down here—Debbie is going to write them down for me—and then let me go through them, and we can decide if some should be struck or qualified or whatever.

First is that we had a useful discussion.

MR. TARULLO. I disagree. [Laughter]

CHAIRMAN BERNANKE. And second, relating to what Governor Tarullo said, the most important thing, of course, is to meet our monetary policy objectives, and the pace and sequencing of our actions will be driven by those objectives. In particular, the fact that we're discussing exit does not necessarily carry implications for near-term monetary policy.

Now, getting into more substance—first, I think most people were willing to say that they thought that the federal funds rate/IOER should be the principal tool for responding to macroeconomic developments. I would add that, as a practical matter and taking into account President Lacker's very astute comments, to make IOER effective, it will probably need to be

supported by the draining tools that we've discussed in this room for some time. So I would put the funds rate /IOER in the center of our strategy.

Second, I would say that our forward guidance and our communication will provide as much warning as possible as we move toward the point where we begin to raise the short-term interest rate.

The remainder of the points, some of which may perhaps be controversial, bear on how we're going to deal with the balance sheet. The first one is that I believe that a pretty strong majority agreed with the view that restarting redemptions—and I wouldn't be specific about agencies versus Treasuries, et cetera—could be something that might happen relatively early in the process. Next—and here I would turn to the three statements on the sheet—one objective we have is that in the intermediate term we want to return to a normal monetary policy framework. I don't think it's time to start talking to the public about corridors and floors, but maybe a “normal framework” that I think most people would interpret as something close to a corridor system.

The second of these principles is that our exit strategy involves going to an all-Treasury balance sheet.

The third principle bears on the question of the pace and conditionality of asset sales, and there we got quite a bit of divergence, particularly when weighted by enthusiasm. Now, a majority of the speakers did prefer a relatively steady pace of sales, although a couple of those folks were for very rapid sales and others were for more gradual sales, so it's a little hard to rank those views. On the other hand, I think most of the people who favored a relatively gradual sales process were open to the proposition that the pace of sales could be adjusted if macroeconomic conditions called for it. So I would propose to summarize that detailed discussion with the last of the three bullet points, which says that there will be a framework that will be “communicated

to the public in advance, and at a pace that potentially could be adjusted in response to changes in economic or financial conditions.” I think the “potentially could be adjusted” leans a little bit toward nonconditionality, but I think it includes the possibility that we can respond and we will respond if economic conditions warrant.

Finally—and this is a difficult one—When will the asset sales take place? Now, again, in simple counts, a pretty clear majority, but again with different motivations and different perspectives, favored asset sales after the increase in the federal funds rate. We had a few people who suggested a contemporaneous move, such as President Plosser and President Lockhart. President Bullard, of course, made his very interesting intervention about the LIFO principle. A few people, like President Lacker, wanted to move very quickly, so that, implicitly, sales would come very early. I think, looking at the balance of the discussion, what I’d like to do is say something like “most, but not all,” or “many,” or something like that, “saw sales as taking place,” and I would say here, again, vaguely, “relatively late in the process,” which would encompass, perhaps, “contemporaneous with the increase in rates,” like President Hoenig suggested, or “afterward”—but again, acknowledging that some people had a different perspective.

So these would be some interim things that I would try to report, again, as asked. Some of these details may not come up, but I suspect some of them will.

MR. FISHER. Could you clarify, Mr. Chairman, that last point? I have a feeling that will come up.

CHAIRMAN BERNANKE. The last point, yes. I’ve got a little diagram here that shows the interest rate being increased, and then the question is: Where do asset sales come on this timeline? I note that a few people were in the contemporaneous camp—and, President Fisher, I

have you there with an arrow pointed to the left, meaning that you're happy to go along with the Bullard perspective. That being said, a pretty significant majority still were on the right side of that line—that is, suggesting that asset sales should begin after the interest rate increases would begin, and that's consistent, I think, with the view that the federal funds rate is the key policy tool. I think this is an area where there was legitimate and interesting ongoing discussion that we shouldn't cut off.

Again, what I proposed was to hedge in two ways. One, we would say that “most, but not all,” or “many,” or something like that, “preferred,” and then to use some term like “relatively late in the process” to encompass contemporaneous or later sales. This may be even a little too weak, but that was my thought.

I'd be happy to go through any of these again. I don't promise even that they'll come out exactly as I just spoke them. President Plosser.

MR. PLOSSER. I have just two observations. I think you're being asked to synthesize a lot of diverse views, and I understand that. I think your first point was that the asset sales or the reduction in the balance sheet would depend on economic conditions. I would encourage you to say that they can either be slowed down or speeded up, because I think the tone of how you say it will suggest that it's only likely to go one way. It would be helpful to say that it could go either faster or slower depending on economic conditions.

CHAIRMAN BERNANKE. Okay. Well, “at a pace that potentially could be adjusted in response to changes.”

MR. PLOSSER. Up or down.

CHAIRMAN BERNANKE. Yes, up or down.

MR. PLOSSER. Okay. On the last part, I would recommend against the phrase “relatively late” because I think that connotes a longer period of time, and it may not be longer. I would suggest that you consider something like, “Many of the participants agreed that asset sales would begin after”—just “after”—“initial rate increases.” And “after” can mean it could be short or it could be long. It just leaves it undefined.

CHAIRMAN BERNANKE. Can I say “after” if I say “many” and I’m very clear that there’s still an open debate on this question?

MR. LACKER. Would it help to say “after in the sequence?”

CHAIRMAN BERNANKE. Okay. In the sequence we had last year the redemptions weren’t much of an issue. Now we have redemptions early or one of the first steps. We have changes in the language, obviously, as one of the first steps. We have in the center of this process the increase in interest rates supported by draining tools. And then, most, but certainly not all—and we have an ongoing debate—preferred that the sales begin after the first increase in the IOER.

President Bullard, I know you’re going to be giving your point of view, and I think it’s an interesting point of view, but I’ll try to make sure that I am clear that these things are not fine lines.

MR. BULLARD. I do think you’re summarizing the disparate views of the Committee fairly well, but I think this issue about redemptions being a lot different from asset sales is potentially confusing. In a sense we are starting with the balance sheet if you went by the sequence, but we’re going to start in a certain way with the balance sheet.

CHAIRMAN BERNANKE. Yes.

MR. BULLARD. And it's just that the Committee seems to be reluctant to go as far as I would in wanting to adjust that.

CHAIRMAN BERNANKE. Well, it's true that they both shrink the balance sheet, but redemptions are predictable, passive, but I agree that there is sort of a LIFO principle there though.

MR. BULLARD. Yes.

CHAIRMAN BERNANKE. So I agree with that. Any further comments? Governor Tarullo.

MR. TARULLO. Can I just ask a question? In the same spirit in which I spoke in the go-round, I guess I would just ask the question of how deeply you want to get into this tomorrow, given where the Committee is right now. That is, one strategy is to try fairly, as I think you have in your summation, to characterize how the Committee breaks down on a number of substantive dimensions with some specificity. Another would be to try to identify genuine consensus where it's there, and I think you've got it on those three true–false questions, but in other areas, maybe intentionally to generalize so as not to get too deeply into some of these questions. For example, as I was listening to these guys at the end of the table, I found myself thinking a little bit differently about the redemption versus asset sales point than I had before, and to me it's not so fundamental to our approach. Maybe it is to some people. I guess I just wonder whether in a press conference you want to begin talking about those things, thereby potentially inviting further specific questions. My question is not a rhetorical one. It's a genuine one.

CHAIRMAN BERNANKE. I think I have to balance, as you say. I mean, I can't go into too great a detail, but I hardly can deny that we had this conversation because the minutes will come out and many of these issues will be on the table. President Fisher.

MR. FISHER. I want to second that point. I think the more you begin to process, the more you're likely to get questions that force you further to process. I think providing these general outlines and a direction is what counts here. You're going to have subsequent press conferences, but it could be a trap. So I agree with Governor Tarullo on this front, and I would just be as general as possible.

CHAIRMAN BERNANKE. On the other hand, the point of this is to be more transparent and to provide some help and guidance.

MR. FISHER. Still, you're going to get questions on specifics of sequence and all of these kinds of things if you're not careful.

CHAIRMAN BERNANKE. Well, I obviously won't be able to answer detailed questions, because I don't know the answer.

MR. TARULLO. I don't think this is a matter of being more or less transparent in a sense because I think you're trying to communicate where we are at this point.

CHAIRMAN BERNANKE. I will try to do that, but I did want to make sure I knew where we were. [Laughter] President Lacker.

MR. LACKER. I find myself very sympathetic to Governor Tarullo's points. On this last issue, which seems to be the one where it comes to a head, do you worry that just mentioning the views of a majority might lead a stampede of opinion to focus on that and treat it as if it's a decision? And the constructive alternative would be to mention that there are a range of views. The majority seems to favor, but there are those who have other views and we haven't decided.

CHAIRMAN BERNANKE. I said I would say that.

MR. LACKER. Oh, okay. Mention the other views as well.

CHAIRMAN BERNANKE. I will be clear. Where appropriate, I will give a range of views. I just don't want to be clearly less forthcoming than the minutes will be on something like that, if asked. I'm not going to go out and say, "Here's the deal, guys," and give them the story. But if asked about that, I'll try to convey the sense that there was a range of views.

All right. Well, I hope that all the press conferences will not generate this problem, but thank you for that conversation. Any other comments? [No response]

CHAIRMAN BERNANKE. Well, wouldn't this be a great time for a break? [Laughter] I'm informed the coffee is at—three o'clock?

MS. DANKER. We can just go look and see if it's there.

CHAIRMAN BERNANKE. All right. My right-hand woman is going to go look. Is it ready?

MS. DANKER. Keep going.

CHAIRMAN BERNANKE. We should keep going? Okay. We can hear the staff presentation and then at three o'clock we will have a coffee break. So let me turn this over now to David Wilcox.

MR. WILCOX. Thank you, Mr. Chairman. It's been a humbling realization as the hours have gone by that the only shot I have at garnering a round of applause would be to say, "Nathan and I will now be happy to take your questions." However, I am going to dash any hopes you might have along those lines and give you my full prepared remarks.

As you know from the Tealbook, a lengthy list of indicators came in to the disappointing side of our expectations during the intermeeting period. I will keep the recitation here short and come back to some of these items later in my remarks, and simply note now that both the residential and nonresidential construction sectors succeeded in tripping on the already-low bars we had set for them in the March Tealbook; state and local spending was similarly even softer than we had expected;

and federal purchases took a puzzling dive in the first quarter, especially in the defense area.

That said, not all of the news about first-quarter spending was disappointing. You may recall that just before the March FOMC meeting, we received a softer retail sales report that instantly put a dent in the forecast we had published just two days earlier. But the data since then about consumer spending have been generally encouraging—enough so to restore our forecast for the growth of real PCE in the first quarter to where it had been in the March Tealbook. Similarly, business investment in equipment and software looks on track to post a solid gain at an annual rate of roughly 10 percent in the first quarter, only slightly below our March forecast. Furthermore, the available indicators of business sentiment, including the regional and national surveys of purchasing managers, bode well for the near-term outlook for E&S investment.

All told, the pluses from household and business spending were far outweighed by the minuses from construction and government spending, and we downgraded our first-quarter real-GDP growth forecast by $1\frac{1}{2}$ percentage points from the March Tealbook to just $1\frac{3}{4}$ percent. Moreover, we chiseled down our forecast for second quarter growth by $\frac{3}{4}$ percentage point, to 3 percent.

The larger question that we wrestled with in putting together the forecast was how to interpret the weaker tone of the incoming data. What underlying economic mechanisms might be at work, generating an even more sluggish recovery in spending than we had anticipated? And most fundamentally, has the economic recovery become more tenuous?

We don't think so, but I think it's fair to say that there are some hairline cracks in our confidence.

One important factor encouraging us in the view that the recovery remains on track was the news from the labor market. The improvement in labor market conditions still appears to be proceeding at only a measured pace, but a range of indicators continue to suggest that it is, in fact, proceeding: Private payroll employment increased nearly 200,000 per month, on average, during the first quarter, up from an average of roughly 150,000 per month in the preceding quarter. The unemployment rate edged down another tenth in March to 8.8 percent, and for the next few months we have it essentially following the same trajectory that we foresaw in the March Tealbook. Initial claims for unemployment insurance benefits in the past several weeks have flattened out in the neighborhood of 400,000; at that level, they (as well as other indicators such as hiring plans and help-wanted indexes) are broadly consistent with payroll employment gains continuing during the next few months at about their recent pace. Informed by these data, we left our forecast for employment gains in the second quarter unrevised from our previous projection.

Another source of generally encouraging news about the pace of the recovery was the industrial sector. Manufacturing IP increased at a robust 9 percent pace in the

first quarter, and the gains were relatively widespread across industries. Moreover, apart from the disruptions to motor vehicle production associated with the earthquake in Japan, the available hints about manufacturing activity in the second quarter are mostly bright. The IP data are reassuring because they derive from a measurement apparatus that is essentially independent of the one that is used to estimate real GDP; moreover, manufacturing still accounts for a little more than a tenth of the value added in the overall economy, and for about half of the volatility of overall output. If a more-deep-seated cyclical weakening were under way, it might well leave an imprint in these data. Thus far, they continue to look solid.

Finally, I would note that our forecast of gross domestic income—in principle, a different way of measuring the same underlying concept as gross domestic product—is still running at a more robust 3½ percent pace in the first quarter, essentially unrevised from the March Tealbook—a tenuous bit of evidence, to be sure, but suggestive that the latest reading on real GDP may be understating the forward momentum of the economic recovery.

All told, we interpreted the range of evidence as suggesting that the greater weakness in the first half of this year is mostly concentrated in a few specific sectors, and reflects some forces that may be imposing even greater restraint in those sectors than had earlier seemed evident.

One case in point is the housing sector. Although the inventory of unsold new homes is historically low, the tidal wave of other properties becoming available for sale is large and looks unlikely to subside materially any time soon. A remarkable fact is that roughly half of all sales of single-family homes recently have involved distressed properties—that is, homes that were either in possession of the lender or involved in a short sale. Banks and others disposing of these properties appear willing to take relatively steep price discounts in return for being rid of them. Although these distressed properties are not perfect substitutes—this was written before the “substitution” dialogue today—for newly built homes, they are substitutes nonetheless, and their presence in the marketplace appears to be putting substantial downward pressure on the prices of and demand for new homes. We responded to the intermeeting news by flattening out considerably the trajectory of our single-family-starts forecast. By the end of 2012, single-family starts in our current forecast are no higher than they were in the third quarter of 2008, long after the collapse of the sector was well in train.

A roughly similar story obtains for the nonresidential construction sector. Higher energy prices are supporting more investment in drilling and mining structures, but elsewhere, the still-high vacancy rates for retail and office space, among others, are driving investment down even more steeply than we had expected.

The surprisingly steep drop in state and local government investment spending during the first quarter—nearly 14 percent at an annual rate—suggests that the budget pressures under which these jurisdictions are operating is even greater than we had

thought. Furthermore, state and local governments cut jobs in the first quarter at an average rate of 28,000 per month, again somewhat worse than we had expected.

Although I put consumer spending in a favorable light earlier, I will mention one cloud behind the silver lining. In particular, the prices for energy and food seem to be weighing on sentiment—and by enough, we estimate, to take a couple of additional tenths out of the growth of real PCE over the next few quarters.

All that said, we still think the basic ingredients of the recovery remain in place. The accommodative stance of monetary policy, the waning of the negative wealth effects, the eventual improvement in the availability of credit to bank-dependent customers and, importantly, continued gradual improvement in labor market conditions should give the recovery some additional traction over the medium run. The recovery may be proceeding a little more slowly than we had earlier diagnosed, but we still see the analysis that we gave in the March Tealbook of the dynamics driving the recovery as a reasonable working hypothesis.

As we discussed in the Tealbook, we continue to see the risks around our projections for the growth of real GDP and the unemployment rate as elevated relative to the standard of the past 20 years, and the risks around our projection as reasonably balanced.

On the inflation front, most of the news we received during the intermeeting period was a little higher than we were anticipating, and in response, we made a small adjustment to our outlook. Regarding core inflation, prices for motor vehicles came in higher than we had expected in both February and March. The likelihood that inventories will become even leaner may put further upward pressure on these prices in coming months. Indeed, some of the motor vehicle manufacturers have already announced upcoming price increases and reduced incentives. More broadly, we think goods prices are being pushed up some by the slightly faster-than-anticipated increases in import prices, services prices in earlier months were revised up, and retail energy prices appear on track to rise even a few percentage points faster during the first half of this year than the sharp increases we had already been expecting. None of these upward revisions have large implications for core inflation taken alone, but they all lean in the same direction.

We gave these developments some persistence into next year based on the fact that in many of our model specifications, inflation appears to have some intrinsic momentum. That is, even after controlling for inflation expectations, there seems to be some carryover of inflation from one period to the next. Commonly, for example, empirical implementations of the now-conventional New Keynesian Phillips curve include both a forward-looking term explicitly identified with inflation expectations and a backward-looking term that might reflect a variety of factors such as costly price adjustment or the use of backward-looking rules of thumb by some firms in setting their prices. Regardless of its source, the empirical regularity implies that the slightly faster pace of core inflation this year should leave some imprint next year as well.

Based on these considerations, we boosted our forecast of core PCE inflation both this year and next by 0.2 percentage point, to 1.4 percent.

As for headline PCE inflation, factoring in the direct effects of the incoming data on domestic retail energy and food prices brought our forecast for topline PCE inflation this year up to 2.2 percent—three-tenths faster than we had projected in the March Tealbook. Next year, we have food and energy prices decelerating sharply, essentially in line with available readings from futures markets, and as a result, topline PCE inflation falls back to 1.2 percent.

It's a little difficult to compare our inflation outlook with those of outside forecasters, partly because the most recent available Survey of Professional Forecasters dates from mid-February, and partly because the Blue Chip survey does not poll its participants about PCE inflation but focuses instead on the CPI. But it might be worth noting that our outlook for overall CPI inflation is essentially the same as the Blue Chip's forecast for this year and 1 percentage point lower next year. With regard to core PCE inflation, our projection is a couple of tenths higher than Macroeconomic Advisers' for both this year and next, and a couple of tenths lower than the somewhat dated SPF projection for next year.

Similar to our analysis with regard to real GDP and the unemployment rate, we continue to see the amount of uncertainty surrounding our inflation projection as elevated relative to the standard of the past 20 years, and we see the risks around our forecast as balanced. And now, Nathan will continue our report.

MR. SHEETS.³ Even as recent readings on economic activity in the United States have surprised on the downside, data for the foreign economies have come in somewhat above our expectations. With the notable exception of Japan, industrial production and PMIs in the advanced economies have generally remained upbeat. And monthly indicators for the EMEs have also shown strength. We now estimate that foreign GDP rose at a 4 percent pace in the first quarter, nearly ½ percentage point more than in our last forecast. Looking ahead, we see foreign growth in the current quarter dipping to 2¾ percent, down more than ½ percentage point from March, mainly reflecting the effects of the Japanese earthquake. Thereafter, growth abroad should recover to a 3½ percent pace, as the rebuilding process in Japan commences, supply chains normalize, and strong growth in the emerging market economies continues.

Given the favorable expected performance of foreign activity, coupled with continued projected depreciation of the dollar (mainly against the emerging market currencies), we see net exports making a positive contribution to U.S. GDP growth of roughly ¼ to ½ percentage point on average over the forecast horizon. Notably, our forecast implies that the trade balance excluding oil imports will turn positive in 2012 for the first time in two decades, marking an important milestone for U.S. external adjustment.

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

In addition to the tragic human dimensions of the Japanese earthquake and tsunami, the disaster also damaged physical capital amounting to roughly 3 to 5 percent of GDP, including 10 to 15 percent of the country's electricity generation capacity. While most large Japanese factories have resumed production, they are generally operating at levels well below normal. In addition, production of certain specialized components, especially those needed for some high-tech and automotive products, remains offline. This shortfall in specialized parts has disrupted production chains not only in Japan, but also around the world, including—as David has noted—in the United States. And it is unclear whether the power grid will be able to meet peak electricity demands this summer, making a resumption of rolling blackouts a further risk for production. All told, we expect Japanese GDP to decline at an annual rate of 3½ percent in the current quarter, down 5 percentage points from the March Tealbook. Going forward, rebuilding efforts should eventually spur economic activity, leaving the level of GDP by the end of next year only slightly lower than in our last forecast. But suffice it to say that the risks—including the ongoing problems at the Fukushima power plant—are both substantial and skewed to the downside.

In the euro area, the authorities continue to make uneven progress in their efforts to resolve the region's fiscal and financial stresses. In the days before your March meeting, European leaders agreed in principle to increase the lending capacity of the European Financial Stability Facility (EFSF) to a full €440 billion, a crucial step toward putting a sufficient backstop behind Spain. However, these negotiations have subsequently stumbled, and implementation may not be achieved until well into the second half of this year.

As a more encouraging development, the IMF on April 1 activated its expanded New Arrangements to Borrow, which increases the fund's available lending capacity from roughly €130 billion to €300 billion. Not all of these resources can—or should—be used to fight crises in Europe, but the fund now has additional resources to finance programs for the peripheral countries should the need arise.

Also in early April, the Portuguese authorities—faced with sizable debt repayments over the next few months and soaring financing costs—requested an EU-IMF assistance package, which will likely be sized at somewhere around €60 billion to €100 billion. Assuming that this program is successfully concluded, we see this move as an important step forward, as it reduces the risk of a full-blown crisis in Portugal, which could in turn create contagion for Spain and the other peripherals.

Over the past couple of weeks, the possibility of Greek debt restructuring was highlighted by public statements from German officials, including the Finance Minister. ECB officials sharply countered, arguing that a restructuring would have devastating consequences for both Greece and other countries in Europe. Our analysis has shown for some time that Greece's debt burden is unsustainable, but we do see a case for delaying the restructuring for a while longer in order to put in place a more compelling firewall around Spain and to provide scope for other countries to decouple from Greece. In any event, as Brian Sack has noted, debt spreads for Greece and Portugal spiked upward during the intermeeting period, while those for

Italy and Spain were little changed. This apparent decoupling is an encouraging sign, but there is still much work for the European authorities to do. Two key steps are, first, as I noted earlier, the expansion of the EFSF and, second, the successful completion of bank stress tests in June.

The paths of oil and non-fuel commodity prices in the April Tealbook are on balance little changed from those in March, as prices declined sharply in the aftermath of the Japanese earthquake but subsequently rebounded. However, just as I was getting ready to take a victory lap to celebrate the accuracy of our forecast, the price of oil moved up appreciably late last week. With this further upward lurch, the spot price of WTI is now nearly \$7 per barrel higher than in the March Tealbook. This increase has largely reflected the continued disruption of Libyan production. Contrary to earlier reports, recent evidence suggests that Saudi Arabia has not increased production to offset this shortfall. Indeed, last week the Saudi oil minister stated that the Kingdom's production was down 800,000 barrels per day in March.

The rising trajectory of commodity prices has pushed inflation higher in countries around the world, prompting monetary policy tightening by many central banks. Notably, despite the ongoing turmoil in the periphery, the ECB in early April nudged its policy rate $\frac{1}{4}$ percentage point higher, in response to headline inflation well above its 2 percent ceiling and solid performance among the core countries (particularly Germany). The Bank of England has not yet moved, but with headline inflation hovering at 4 percent and signs that inflation expectations may be drifting upward, we expect a hike there as well over the next few months. In addition, many EME central banks have continued to tighten monetary policy in response to concerns of overheating. These moves have been coupled in some cases with moderate currency appreciations, and in Brazil, Indonesia, and Korea with additional capital control measures, as capital flows into the EMEs appear to have picked up again in recent weeks after showing softness through much of this year.

As promised, the International Finance division has launched an intensified research program examining the behavior of commodity prices. Although this is very much work in progress, I would like to provide you with an early look at what we are finding. To date, we have confirmed the broadly held view that, relative to a random walk, the forecasting properties of the futures curves are typically limited, at best. However, we have also found that during times when the futures curves exhibit considerable slope (such as when the economy is emerging from a recession), futures prices have often contained meaningful predictive information.

Perhaps more importantly, we are also getting a better handle on how movements in underlying fundamentals—and, in particular, how surprises in those fundamentals—influence the evolution of commodity prices. The exhibit that I have distributed to you focuses on this issue. The top two panels of the exhibit document what you already know well: Futures markets were surprised again and again by higher commodity prices over the period of 2003 to 2008. In each of those years, the futures curves for both oil (on the left) and copper (on the right) suggested flat or declining prices going forward, even as spot prices continued to march upward.

But my colleagues David Bowman and Joseph Gruber have observed that these upward surprises in commodity prices came in step with corresponding upward surprises regarding the strength of emerging Asian economic growth. As shown in the bottom panels, consensus forecasts of the long-term growth rates of industrial production in China and in the rest of emerging Asia also were consistently revised upward over this period. As we have noted previously, these emerging Asian economies accounted for much of the increased consumption of oil and other commodities over the past decade. In addition, on the supply side, forecasts of world oil production and copper extraction have tended to surprise analysts on the downside, falling short of projections over the past decade. This work underscores the role of fundamentals in explaining commodity prices, but it also finds that movements in commodity prices are driven by surprises in growth, more than by the pace of growth per se. This suggests that it may be fruitful to adjust the futures curves to account for differences between staff forecasts of global growth, exchange rates, and other relevant variables and the private forecasts that implicitly underpin these curves. We have not yet fully tested whether this approach would in fact produce commodity price forecasts that have improved forecasting properties, but it would at least yield projections that were directly conditioned on the staff's outlook. We plan to have more to say about these issues by the time of the June FOMC meeting. Fabio will now continue our presentation.

MR. NATALUCCI.⁴ I will be referring to the package labeled “Material for Briefing on FOMC Participants’ Economic Projections.” Exhibit 1 depicts the broad contours of your current projections for 2011 through 2013 and over the longer run. As shown, you continue to expect a gradual economic recovery over the next three years, with GDP growth—the top panel—picking up modestly for this year as a whole and accelerating further in 2012 and a bit more in 2013, while the unemployment rate—the second panel—slowly trends lower. With regard to inflation—the bottom two panels—although you anticipate that total PCE inflation will move up this year, you project this increase to be temporary, with headline inflation moving back in line with core inflation in 2012 and 2013. However, you generally see core inflation gradually edging higher over the next two years.

Exhibit 2 reports the central tendencies and ranges of your projections for 2011 through 2013 and over the longer run; the corresponding information about your January projections is indicated in italics, and the current and January Tealbook projections are included as memo items. On balance, your forecasts for this meeting point to somewhat lower GDP growth and slightly higher inflation over the forecast period than you projected at the time of the January meeting. In your forecast narratives, almost all of you indicated that these changes were the result of weaker-than-expected incoming data and higher commodity prices. A number of you also pointed to greater odds of a tighter stance of fiscal policy during the forecast period. All of you marked down your projections for real GDP growth this year, with the central tendency of your estimates, shown in the top panel, noticeably lower than in January: Most of you now anticipate that real GDP will increase about 3 to

⁴ The materials used by Mr. Natalucci are appended to this transcript (appendix 4).

3¼ percent in 2011, versus nearly 3½ to 4 percent in the previous forecast. By contrast, the revisions to your growth forecasts for 2012 and 2013 were modest: You continue to see the recovery strengthening, with the pace of real GDP growth stepping up to about 3½ to 4¼ percent in 2012 and remaining near those rates in 2013. This general pattern of revisions is similar to that reflected in the updates to the Tealbook forecast since January.

Your unemployment rate projections are summarized in the second panel. Reflecting the decline in the unemployment rate in recent months, nearly all of you lowered your forecast for the average unemployment rate in the fourth quarter of this year, with the central tendency of your projections for 2011 at roughly 8½ to 8¾ percent, versus about 8¾ to 9 percent in the previous SEP. Your projections for 2012 and 2013 continue to trace a gradual downward path that is little changed from the projections submitted in January. Consistent with your expectations of a relatively moderate economic recovery, most of you project that the unemployment rate will be about 6¾ to 7¼ percent even in late 2013—still well above the about 5¼ to 5½ percent central tendency of your estimates of the unemployment rate that would prevail over the longer run in the absence of further shocks (shown in the right-hand column). This general pattern of revisions is broadly similar to the updates in the Tealbook forecast since January.

Turning to inflation—the bottom two panels—all of you raised your forecast for total PCE inflation this year, with the central tendency of your estimates significantly higher and the dispersion of your projections noticeably wider than in January. Most of you now anticipate that headline inflation will run about 2 to 2¾ percent this year, versus about 1¼ to 1¾ percent in your January projections. However, most of you expect the increase in headline inflation to be temporary, with the central tendency of your estimates moving down to about 1¼ to 2 percent next year and running about 1½ to 2 percent in 2013, at or below the about 1¾ to 2 percent central tendency of your estimates of the “mandate consistent” inflation rate shown in the right-hand column. The central tendencies of your projections for core PCE inflation for 2011 and 2012 have shifted up a bit and now run about 1¼ to 1½ percent this year and 1¼ to 1¾ percent next year before rising to nearly 1½ to 2 percent in 2013. The Tealbook forecasts for both total and core inflation in 2012 and 2013 are in the lower part of the central tendency ranges of your projections.

Your longer-run projections—detailed in the column to the right—anticipate that over time the annual rate of increase in real GDP will converge to about 2½ to 2¾ percent, with an unemployment rate of about 5¼ to 5½ percent and total PCE inflation between about 1¾ and 2 percent. Of note, the central tendency for your projections of the unemployment rate in the longer run is now somewhat narrower than the 5 to 6 percent interval reported in January.

Your final exhibit summarizes your assessments of the uncertainty and risks that you attach to your projections. As indicated in the two panels on the left-hand side, a sizable majority of you continue to judge that the levels of uncertainty associated with your projections for both real GDP and inflation—as well as for the unemployment

rate (not shown)—are greater than the average levels that have prevailed over the past 20 years.

As shown in the upper-right panel, about half of you continue to view the risks to output growth as balanced, although a number of you now judge that those risks have become tilted to the downside. The most frequently mentioned downside risks to GDP growth included further increases in commodity prices, a tighter-than-anticipated stance of fiscal policy, and an even-weaker-than-expected housing sector.

Your assessments of the risks attending your inflation projection—shown in the bottom-right panel—have shifted noticeably to the upside, reflecting concerns about further increases in commodity prices, a potential rise in inflation expectations, and the possibility that the current highly accommodative stance of monetary policy will be maintained for too long. These concerns, along with the upward revisions to your projections for inflation that I noted earlier, help explain why many of you believe that the Committee should begin to remove monetary policy accommodation earlier than is assumed in the Tealbook. This concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. Questions for our colleagues? President Fisher.

MR. FISHER. I have two questions for Nathan. We are still accommodative. The Brits appear to have stopped, but, as you mentioned, the Europeans are tightening and others are tightening. What do the Europeans see that we don't see? In your opinion, is it a difference in mandates, or do they see the world differently?

MR. SHEETS. I think it's a variety of factors. The difference in mandate and perspective may be a bit of it. But the real challenge for the ECB is the heterogeneity of performance and what the ECB Governing Council is trying to do is trying to balance this. The German economy is just absolutely performing at an extraordinary pace. Unemployment there in February actually fell to 6.3 percent, so they are getting to a point where unemployment is almost 3 percentage points lower than when the crisis started. And Germany is 30 percent of the euro-area economy. So you have the vast majority of that economy performing at a pretty solid pace and where slack is more limited. And then you've got a fraction of the economy that is struggling in extraordinary ways. But, you know, putting that into perspective, Portugal, Ireland,

and Greece together amount to roughly 6 to 7 percent of GDP in the euro area. So it is very small; it's just a small fraction of Germany.

We have looked at this by a variety of metrics, and it seems like where they are is reasonable based at least on one benchmark Taylor rule. So I think that the differences really equate to differences in economic conditions between the United States and the euro area. But then I think, as a secondary factor, there are some differences in perspective and mandate that also are having an effect.

MR. FISHER. Mr. Chairman, when we talk about our U.S. situation, one of the restraining factors we envision on inflationary pressures, even though we revised our numbers upward, is our amount of slack, and particularly significant unemployment. So I'm wondering, Nathan, if you would describe to us how much slack you see outside the United States. And, how well and how able are we to measure global slack?

MR. SHEETS. Okay. Well, to answer your second question first, our ability to measure global slack is very, very limited. We do our best; we have some benchmark estimates, but there are huge confidence bands around our estimates. But our sense is that right now activity for the emerging market economies is pretty well close to what our best guess of potential is. And for what it is worth, we have sort of massaged some of the IMF estimates. That said, our estimate of slack and what the IMF is seeing are not that different. For the major emerging market economies, output is approaching potential. Then, as I described, the situation in Europe is that the vast majority of that economy is performing pretty well, but then you've got this extraordinarily soft spot where, frankly, I don't even know how to begin to think about what the output gap is—in Spain, for instance, where you've got a 20 percent unemployment rate, or in Ireland. I do believe that there's a fair amount of slack in the United Kingdom, but, on the other

hand, you've got offsets there with inertia in the inflation process that I don't fully understand. And then, Canada seems to be performing very strongly.

So my sense is that, for the global economy as a whole, there is still a little bit of slack mainly in certain industrial countries, but the global economy is performing very well, and the amount of slack is diminishing.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Again, for Nathan. At least if you've followed the press, there has been an intensifying discussion of Chinese inflation and their tightening. Do you see any concern that they will actually have to tighten enough to materially slow down their growth rate?

MR. SHEETS. Chinese inflation has been creeping upward. The latest reading was 5½ percent, 12-month change, which is higher than what they are comfortable with. The Chinese authorities are moving their monetary policy, both interest rates and reserve requirements, as well as a number of the quantitative tools that they have—maybe these days we would call them macroprudential instruments; previously, we would have called them interventions in the economy [laughter]—to try to rein in credit. And it seems like that they are having some success. So our baseline forecast for China is one where the Chinese economy slows to 8 or 8½ percent, and inflation comes down some, but, as you point out, I would say there are both upside and downside risks around that forecast. It may be that the economy doesn't slow as much as we think it will, and then the authorities will really have to put on the brakes. That could generate an outcome there of sharper slowing than what we expect.

That said, the Chinese authorities have been faced with these kinds of problems a number of times over the last decade, and each time have been successful in guiding the economy onto the smooth-landing course, and that is our expectation again. If something different happened there, then our outlook for the global economy would be quite a bit different. We really are getting to a point where China is becoming another engine of global economic growth, and without it we would have a softer global outlook than what I've discussed.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I have a question about the debt ceiling. As noted in the Tealbook, it appears that investors are still pretty sanguine that some kind of deal will be reached, and that the debt ceiling will be raised by July. In my own thinking, though, I see this as being a risk that we should take account of. I was wondering what the staff perceives to be the economic and financial risks or consequences if the debt ceiling really isn't raised.

MR. SACK. As I mentioned in my briefing, I think the markets are very sanguine about the debt ceiling issue. It's hard to find any evidence that they are anticipating a significant problem. I mentioned the Treasury bill curve, which doesn't show any effects. Implied volatility of long rates has come down.

MR. KOCHERLAKOTA. Markets have been wrong, though, before.

MR. SACK. Well, my point was going to be that many of us are surprised that there is not a bit more concern. I think it's uncertain how the Treasury would deal with the situation. We know they have a set of tools that they would employ. But if pushed to the brink, there is the question of what other steps they may take to be able to service the debt.

If it went to the worst-case scenario where there was actually a default-type event on U.S. Treasury debt, I think it would be a significant market event. And the effects would be in the directions you would expect—a bigger risk premium priced into the Treasury curve, a weaker dollar, and downward pressure on U.S. asset prices if foreign investors and others reevaluate the situation here. So I think it could be consequential if we got there, but certainly our hope and expectation is that we won't end up there.

CHAIRMAN BERNANKE. Other questions? [No response] Okay. Seeing none, I understand now the coffee is ready, so why don't we take a 20-minute break and be back at 3:25 p.m.

[Coffee break]

CHAIRMAN BERNANKE. Okay. Hope that was refreshing. We are ready for our go-round on the economy, and we'll start with President Evans.

MR. EVANS. Thank you, Mr. Chairman. My business contacts continue to report good economic fundamentals, similar to our March meeting. Despite the projected first-quarter GDP growth rate of 1.7 percent, there were very few indications of slower momentum in growth. My manufacturing contacts continue to be upbeat. Only the auto sector suggested a temporary slowing in growth prospects due to the supply chain disruptions from the Japanese difficulties. Labor markets are continuing to improve. With regard to pricing, there are many reports of first-round price increases due to higher energy and commodity costs. At the moment, second-round effects seem minimal.

Turning to the national outlook, I had been relatively optimistic about economic growth prospects. At our previous meetings this year, I indicated that I expected GDP to grow about 4 percent in 2011 and 2012. We don't appear to be seeing that kind of pace in the first half of

this year, but as of today, I don't see a fundamental change in economic momentum. So I think the 4 percent mark is a good projection for the second half of 2011 and for 2012. That puts us broadly in line with the Tealbook.

That said, this is the second time we are facing a period of sluggish growth following the trough of the 2008–09 recession. Suppose first-quarter GDP growth comes in at the Tealbook's 1.7 percent projection. I'd see that as a reminder that achieving escape velocity from our liquidity-trap conditions is still not a slam dunk. We shouldn't forget that a successful launch must still overcome a number of significant headwinds. Households have lost a lot of net worth and now face a hit to purchasing power from higher gasoline prices. Both of these limit the scope for a sustainable pop in consumer spending. Housing's contribution to this recovery is AWOL, and nonresidential construction isn't doing much better. And state and local governments are still trimming expenditures and payrolls. Indeed, listing these headwinds also is a reminder of why we are writing down 4 percent growth numbers instead of the 5-plus numbers that we'd like to see following a very deep hole from the recession.

In terms of inflation, the U.S. economy is being hit by substantial relative price changes from global economic forces with respect to food, energy, and commodity prices. We likely are going to see some larger quarterly numbers for inflation in the first half of the year, but the key question centers on the medium term. What PCE inflation are we likely to see in 2012 and beyond? Clearly, we do have a large amount of monetary accommodation in place, which makes many nervous about rising inflation. However, it would be quite unusual for inflationary momentum to build in the absence of rising labor costs and wages. I know there are disagreements around the table, but I still see the evidence favoring the view that a substantial

degree of resource slack is holding back inflationary pressures. I think it's important to defend this view vigorously, and I'd like to do that now. [Laughter]

Theoretical and empirical research objections have been leveled at this kind of analysis. These often note the unobserved nature of output gaps and resource slack. By my reckoning, Presidents Plosser, Kocherlakota, Lacker, and Bullard have spoken on this issue, and I suppose I should add President Fisher after today's reminder. In addition, President Lacker has often voiced skepticism of numerous statistical relationships between observable variables and inflation. As I understand the context of such comments, these correlations are uninformative for policy due to the endogeneity of the variables. There is a literature on this.

I would like to report some results from my staff's work with DSGE models that attempt to pin down the exogenous factors that are influencing inflation dynamics. In the policy debate over statistical correlations, economic structure, and truly exogenous factors, this is a clearly useful way to proceed. It is in line with the research program articulated by Lucas, Sargent, and others.

The Chicago research model builds on my 2005 *Journal of Political Economy* article with Christiano and Eichenbaum, and if you like the discipline of peer-reviewed work, you have to love this one because we spent over five years in that review process. [Laughter] The Chicago model is estimated on data over the period from 1987 to 2008 and has many desirable attributes that allow it to describe quite well the quarter-to-quarter movements in macroeconomic data. Here is the recent policy development: The model has been surprised by the increase in core inflation over the past six months. The forecast error for core inflation relative to what we thought six months ago is about $\frac{1}{4}$ percentage point higher on a year-over-year basis. Coming over two quarters, that's a substantial increase. In studying the model's results, it seems to be

struggling with the apparent softer growth in productivity as well as the increase in core inflation.

What factors account for these developments? In the model, part of the rise in inflation reflects announcement effects of our continued accommodative forward guidance for monetary policy. That was an objective of our asset purchase program. In addition, the Chicago model sees four other exogenous factors as important in explaining these observations. The first factor is that a small, adverse, neutral technology shock has hit the economy. In the model, this will reduce output and productivity growth and increase inflation. This is a potentially troubling shock because it imparts inflation persistence. That is, it has staying power, and I was nervous when the staff showed me this development.

The second factor captures an exogenous increase in households' willingness to supply labor and is also persistent. In the model, this increases both hours and output while productivity falls due to diminishing returns in production. But here, inflation is lower, due to lower marginal costs. The net effect of these first two shocks leaves productivity growth lower, as the data have shown recently. The initial rise in inflation is somewhat smaller when both factors are accounted for: The technology shock was up; the labor supply shock was down.

The last two exogenous factors that the model finds important in explaining the data are transitory shocks to the markups on prices and wages. These shocks boost core inflation but have only a temporary effect. These are the types of shocks that give rise to commentary in past Tealbooks, like: "We think the movement down or up in core inflation was temporary and unrelated to resource slack or other fundamentals."

Our final model analysis finds a substantial and constructive role for these transitory shocks. So, summing across all of these recent developments has interesting implications for the

time path of the Chicago DSGE model's inflation forecast. The model's projection for core inflation over the four quarters of 2011 is higher at 1.6 percent. But core inflation falls to a bit under 1.0 percent in 2012 and 2013.

What's my bottom line here from the DSGE model? My staff's analysis of the exogenous factors indicates that a good portion of the recent run-up in core inflation is likely to be transitory, and I didn't refer to resource slack or output gaps once. The model analysis is in terms of exogenous factors. Changes in pricing pressures work through variations in marginal costs, a fundamental economic concept. That recent inflation developments are most likely transitory is also a robust finding from analysis of recent inflation and term structure data. That is, this conclusion is also supported by a modern finance model we run that produces inflation forecasts from no-arbitrage affine models of the term structure of interest rates.

These implied inflation forecasts also revised up a good deal in the near term, but they are only up a tenth or two in 2012 and still just reach 1.4 percent by 2013. This is analysis of market data with state-of-the-art term structure finance modeling. This model allows for feedback from energy prices to core but finds that feedback to be very small, which is also consistent with the alternative but complementary VAR evidence I discussed at our March meeting. Furthermore, this assessment also aligns well with our standard battery of Stock-and-Watson-style statistical models, which continue to forecast very low core inflation throughout the projection period. As it turns out, the endogeneity issue didn't disturb the result as it aligns with the structural model analysis.

We in Chicago have searched high and low for research-quality evidence on the nature of the inflation persistence over our projection period using a variety of state-of-the-art models. Taking into account recent developments, it continues to be exceedingly difficult to find

analytical research-based evidence that inflation is about to overshoot our target over the medium term. Consequently, I feel quite comfortable that my views, which lean strongly toward continued substantial accommodation, are well within the mainstream of modern macroeconomic and monetary research. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I'm going to focus mostly on anecdotal reports from the Sixth District, and those anecdotal reports that I've recently received from directors and other contacts are more positive than the tenor of the incoming data. While these contacts acknowledge that the pace of economic activity weakened in the first quarter, there has been no significant falloff in business confidence about the outlook since the last meeting. In many cases we are getting reports that suggest a stronger economy than the macro numbers would indicate, and this is puzzling considering the incoming numbers.

On the positive side, manufacturing activity remains quite strong in the District, consistent with the national numbers. The strength in auto manufacturing, in spite of some rescheduling associated with Japan-based supply chains, heavily influences this perception. Transportation- and logistics-related businesses continue to experience very strong demand. Tourism is strong in Florida and other tourist areas in the Southeast, helped in part by international visitors. Convention business is returning nicely, which is taken as a sign of improving confidence in the economy. This has spurred a significant increase in capital expenditures in the tourism sector.

On the more negative side, housing markets in my District remain distressed with no clear signs of improvement, but, at the same time, with not a lot of deterioration. Perhaps more noteworthy, some retailers reported a falloff in sales as the quarter proceeded. One large home-

improvement retailer has measured fewer visits, which is attributed to shoppers reducing their outings to save on gasoline. And there is acknowledgement that poor weather, of course, in the early part of the quarter affected first-quarter numbers.

Overall, however, retail sales in the District appear to be up modestly from the last meeting. In our monthly survey of Sixth District retailers, the majority of respondents reported a slight increase in both sales and traffic in March. About three-fourths of them indicated that they expect sales to increase in the coming months, and overall sentiment continues to be positive.

Consistent with the measured optimism expressed in most of our conversations, we did not as of yet detect any widespread backing-off of investment plans. However, our director that represents the large retailer that I mentioned earlier did note that cap-ex budgets would have to be cut if the decline in the pace of activity that they're experiencing persists much longer, and many of our directors agreed. So in this instance, I did pick up some wavering on the outlook.

Labor markets in my District appear to have firmed a little. Demand for workers has improved in line with the pickup in hiring nationally. I think it's a reasonable thesis, broadly speaking, that firms have pushed productivity enhancements close to their limit and are now reaching the point of needing new workers to keep expansion going. In our first-quarter survey of small businesses, 42 percent of respondents reported that they expect to add workers over the next six months, up from 29 percent at year-end. Views on wages and on wage pressures have shifted slightly. Wage and benefit pressures have moved from neutral or even downward to moderately upward. We did hear greater concern about talent retention, and I note that the NFIB and the Duke CFO survey in March showed upticks in the wage–cost outlook.

Our contacts continue to voice concern over cost pressures, especially material costs deriving from commodities. What is noteworthy is how broad-based these material cost

pressures seem to be. We are hearing some concern that margins are tightening and are projected to tighten, and that pass-through inhibitions are weakening.

Chief among the commodity prices, of course, are oil and fuel. I see the direction of oil prices as a major swing factor in economic performance for at least the near term. Based on so-called expert analysis, if there is such a thing, and conversations with knowledgeable observers of developments in the Middle East, I think there is no better working assumption than the one that oil prices have leveled off but will remain elevated near current levels for some time. The possibility of a spike from current price levels represents a significant downside risk to my outlook.

Our District-level soundings suggest to me that the economy is at something of a pivotal juncture. Gasoline prices and energy prices more generally will influence the evolution of the economy in the near term. Right now the general sentiment seems to be that the negative influence of higher energy prices is likely to be transitory, but this view is cautiously held, and there is a sense that the prevailing optimism about the balance of the year is fragile.

As I said, anecdotal reports I've heard seem mostly inconsistent with professional interpretation of incoming data and are in tension with the results of our recent model runs. The suite of models that we ran in preparation for this meeting almost uniformly suggest a downward revision to our 2011 growth outlook on the order of $\frac{1}{2}$ to $\frac{3}{4}$ percentage point, and this is similar to the downward adjustment of the Tealbook baseline. In my forecast submission, however, I decided to give some weight to the economic intelligence we're getting from our contacts. So I'm holding to the view that the economy is on a moderate growth path, and that the slowdown in the first quarter suggested by the incoming data is really an initial shock effect that will not persist. This is to say that the fundamentals have not changed that much.

As regards the balance of risks, I see the risk to economic growth to the downside connected to the risk of a further oil price shock. My assessment of the inflation risks is clearly weighted to the upside. Although expectations remain in the territory reasonably described as “anchored,” expectations have drifted higher and are at the top of the recent historical range. Despite exceptionally high rates of unemployment, wage growth seems to be firming. This, along with the drumbeat from businesses that inflationary pressures continue to build, raise some concern on my part that we may not be able to count on inflation expectations as a restraining influence on underlying inflation. Although normally one would think of these two risks, the oil price shock to growth and the inflation risk, as moving against each other, in my view there is a scenario where we get higher inflation and a weaker economy. But this is not my base-case outlook, and, as I said, that outlook holds to a moderate-growth path with a slight backup on the full-year growth estimate and tame core inflation measures for the forecast horizon. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. The judgment on the data since our last meeting is a split decision. Labor markets are improving, albeit slowly, but spending is slower than I expected. Most of the good news has come from the labor markets. Payroll employment in recent months is growing at a rate consistent with a gradual decline in the unemployment rate. The unemployment rate has fallen a full percentage point over the past four months, to 8.8 percent, lower than I expected last fall.

This improvement in the labor market is still not affecting labor costs, with wages and salaries growing quite slowly. The quiescence in wages and salaries is consistent with substantial slack in the labor market. This assessment of slack is consistent with the significant

revision in the JOLTS data, which now show many fewer vacancies over the past five years. The revision was primarily a result of reestimating the birth-death model, which had overestimated the number of new firms and job openings being created during the crisis. The very low quit rate also suggests that considerable slack remains in the labor market. A worker concerned about the outlook would be reticent to quit a job for fear of the inability to secure better employment elsewhere. While the quit rate has risen off its lows, it remains substantially below its level after the last recession. With existing workers reticent to move and the low participation rate indicating that opportunities are not attracting workers back into the labor market, we need much more improvement in labor markets than we have seen to date.

While progress in labor markets has been slower than I hoped but more than I forecast, recent data on spending have been slower than I hoped and less than I forecast. GDP growth over the past four quarters has averaged only 2.8 percent, just slightly above potential. At the beginning of the year, I had expected growth in the first quarter to be well above potential, but now it looks as if growth will fall well short of that.

Over the past four months, most forecasters have been revising down their first-quarter estimate with each new data release. Like many of these forecasters, I have been surprised by weaker-than-expected consumption, housing, and state and local spending. A key question is: Given the surprise in incoming data and the likelihood of more fiscal tightening than I originally expected, how much of this weakness should be carried into future quarters? While I'm assuming that this is a lull rather than a trend, the strength in spending for this year is in the forecast but has yet to be reflected in the data.

Despite the significant food and energy shocks, my estimate of core inflation, like that of the Tealbook, remains well below 2 percent over the forecast period. I focus on core inflation

because over the period from 1985 to the present, whenever total inflation has diverged from core inflation, total has tended to return to core, perhaps consistent with well-anchored expectations. While we need to continue to monitor inflation expectations and inflation trends, the evidence to date is consistent with inflation over the forecast horizon remaining under 2 percent.

Like the Tealbook, my forecast has an unemployment rate at the end of 2013 well above full employment, and core and total PCE inflation well below 2 percent. However, my forecast achieves this outcome with a federal funds rate that remains at the zero bound longer than assumed in the Tealbook. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Mr. Chairman, economic growth in our regional economy appears to be accelerating, and, notwithstanding some soft spots, we think that the Eleventh District is about to turn in its best performance since 2007. Our payroll employment grew at a 2.6 percent rate in the first quarter and at a 3.6 percent rate in March, and on almost every front we have significant activity, including multifamily construction and rents that are on the rise across the Texas metropolitan areas. We've been assisted by robust economic growth in Mexico, which is growing at 4.8 percent.

There are some areas of concern, particularly that input and selling prices are increasing faster. And as I mentioned last time, we did find a typical Texas way to resolve the budget—by cutting everything, including education and social services. The joke is, and it's a horrible one, that we've gone from the electric chair to electric bleachers in Texas. It's a hideously interesting way to resolve our program issues.

From the standpoint of employment growth, as you know, I like to brag on the percentage of jobs we've created as a percentage of the whole in the United States. The good news is, while we continue to grow, the rest of the United States is catching up with us, and I think it reflects the comments that have been made at the table.

Bearing in mind the great virtues of modeling and academic precision, I'd like to turn to the U.S. economy and address three questions that were raised in the domestic briefing. One is that employment is proceeding. Second, GDP may be understating the momentum of the economy, a point that I believe President Lockhart made in his presentation. And a very important point he made is that inflation seems to have some intrinsic momentum. These are the points that I'm picking up from my anecdotal evidence, and as you know, I do a fairly thorough survey, to the best of my ability. Mr. Chairman, you know who is on my list. I'd like to summarize that for the group since we've heard a lot of macroeconomic data, but I'd like to provide for the table the microeconomic inputs.

What was previously a faint theme is now a very loud, uniform drumbeat on two fronts, according to my interlocutors—that is, the CEOs and CFOs that I talk to across all of our Districts. The first is that cost inflation is pushing forward price increases in all sectors beyond energy and basic commodities, and the second is that excess liquidity is giving rise to faster and looser decisionmaking by financial intermediaries, something that I referenced before. Final demand is growing, although at a lesser pace, and the reason given by my interlocutors is that inflation in basic necessities is becoming a factor dampening consumer confidence and tempering the rate of expansion. The ease with which credit is available is being exploited by businesses, but it is simultaneously giving rise to trepidation of what might ensue. As one of them said, we've seen this movie before, and just recently.

To a person—and I mean to a person across all sectors: public, private, large, small, whatever sector in which they operate—my contacts feel that they and, in general, American businesses large and small, public and private, have, as President Lockhart pointed out earlier, achieved tremendous operational efficiency such that they have no fat from which to absorb widespread and pervasive cost increases, and they must protect their margins by passing these cost pressures on to consumers. To be sure, they're not sure how much leeway they have, but it does alarm me to hear from one interlocutor—whose name I will mention because I think it's of value, Bill Simon at Walmart—that Walmart has approved increases. These are not yet announced, and they're not for public use. They are to be implemented in the June time frame in much higher orders of magnitude than I would have expected—for example, dairy products up 15 percent, all Proctor & Gamble products up 5 to 7 percent. As reported in the *Wall Street Journal* this morning—I presume everybody reads section B? Nobody reads section B [laughter]—5 to 7 percent in diapers and tissues from Kimberly Clark; blue jeans up 8 percent.

Walmart is an interesting interlocutor. They force their suppliers to go through their entire cost structure. In the ugly parlance of one of them, they're known as the cost proctologists because they examine absolutely everything. They have concluded, and I quote, “Practically all of our suppliers' cost structures have been rationalized. They've achieved remarkable operating efficiencies, which is revealed in the macroeconomic data. They have severely limited room to absorb broad-based inflation,” end of quote.

An example—a separate retail chain, Michaels, which sells 40,000 products in 1,040 stores in 48 states, is planning price increases of seasonal goods, which is one-third of their 40,000 products, of 8 to 10 percent, and their CEO put it this way: “Commodities will swing up

and down in price, but wage inflation is real in China, India, Vietnam, and the inherent cost to manufacture everywhere, including the United States, is going up.”

My smallest contact, John Faulkner, a dry cleaner with 20-odd employees, was almost offensively blunt in echoing what I heard from everyone in size up to Rex Tillerson at Exxon, or, say, Burlington Northern, or TI, or AT&T: “I have no problem getting credit or money. That’s the good news. The bad news is that inflation in all my inputs is killing me. I haven’t increased wages for my people. I’m sure as heck not going to hire more until I sense my other costs can be controlled even if bankers pay me to take their money.”

Every CEO I talk to, large or small, public or private, is now budgeting for and managing to inflation, and I think this addresses your point of the inherent carryover of inflationary numbers. The question is for how long, and perhaps we could turn to Chicago’s model to get a sense for that.

As to the effects of excess liquidity on behavior of financial operators, I see only an intensification of the very disturbing patterns I reported at the last FOMC. Continued accommodation is encouraging a debasement of prudent credit practices and an enhancement of speculative impulses, some of which only add to inflationary pressures. I note that in the Tealbook on page 59, the pace of institutional leveraged loan issuance in the first quarter was about the same as the pace for the entire year of 2007, and the expected nonfinancial year-ahead defaults have come down significantly; I note also that they have come down to nearly the same level that they were in 2007 before all the defaults occurred. As an example, I’ll point to Energy Future Holdings. You may remember, that’s the electric utility that just refinanced the \$45 billion leverage buyout that was done by KKR, TPG, and Goldman. Their CEO confided in

me that the covenants in the refinancing they achieved last week were “even better this time than what we got in 2007.”

I agree that many current inflationary variables may be transitory. I accept that over the past 25 years inflation expectations have been largely unaffected by commodity price fluctuations because of the inflation-fighting mindset that we have at the Fed, which is not in question. I can also understand the reasoning behind the initiation of the current LSAP program. Even though I did not think it was necessary, I will grant that it has lifted stock prices and increased investor returns. But here’s the summary point. Based on anecdotal input, for what it’s worth, I fear that we are, first, on the edge of losing the faith of the business community and households as to our inflation-fighting resolve—I think that needs to be reemphasized, a very important part of what you will do tomorrow afternoon, Mr. Chairman—and, second, planting seeds of financial recklessness, some of which are beginning to sprout. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Economic conditions in the Third District improved moderately over the intermeeting period in all sectors except construction. Employment in our three states increased at an annual rate of 1.4 percent during the three months ending in March, comparable to the pace in the nation. The unemployment rate now stands at 8.4 percent, 0.4 percentage point below the national rate.

Pennsylvania has shown considerably more strength than New Jersey, where the government sector has been shedding jobs at a very rapid pace. The stress on state and local budgets is probably the biggest risk at this time in our District’s economy: Large budget deficits loom. In fiscal year 2012, the Center on Budget and Policy Priorities is projecting a budget

shortfall in Pennsylvania of \$4.2 billion, or about 16 percent of the 2011 fiscal year budget, and a shortfall of \$10.5 billion for New Jersey, 37 percent of its budget. Delaware's is more modest—a shortfall of only \$208 million, about 6.4 percent of its budget.

The region's manufacturing output continues to increase in April, but to no surprise, it did pull back from its 30-year high, which is what it was in March, to a more moderate pace, but still one consistent with continuing modest growth. The indexes of new orders, shipments, and employment also weakened somewhat this month but still point to continued expansion. Exports account for a little more than 12 percent of manufacturing output in our District. In response to a special question, 80 percent of the firms said they haven't experienced supply disruptions from the recent crisis in Japan or any other international event. Ten percent indicate they were currently experiencing some problems, and another 10 percent expressed some concern of possible future effects. This is something we will continue to monitor, but the effects are modest.

In the real estate sector, talking to two very large homebuilders suggests that traffic to date is up significantly over last year this time, and their sales volumes over the first quarter of this year are well above what they were last year.

We continue to see signs of increasing price pressures on firms who are becoming better able to pass along their increases to their customers. Although the prices-paid index in our April survey decreased, it remains at a very, very high level. The prices-received index, though, unlike the other indexes in April, moved up again; that is eight consecutive months in which the prices-received index has risen. Firms are continuing to expect that they will be making further price increases over the course of the second half of the year.

In an environment where policy is very accommodative, the key to assuring that commodity price increases don't pass through to general inflation is that inflation expectations remain well anchored, which in turn depends on the credibility of the Fed to deliver on its price stability mandate.

Core inflation has been accelerating, and the Tealbook has been revising up its forecast. Forward inflation compensation 5 to 10 years ahead has been moving up, and the Tealbook says that the staff models indicate that the rise is driven mainly by liquidity and inflation in risk premiums rather than increases in expected inflation. Unfortunately, I don't take much comfort in the fact that inflation risk premiums are rising. I read that as an indication that our credibility may be less stable than I'd like it to be.

My forecast has not changed much since January. I revised down slightly my economic growth for the first half of 2011 because of the weaker consumption data we saw in the first quarter. But I held the second half of 2011 and 2012 roughly the same. I believe the weakness we have experienced is due to temporary factors, such as the severe weather we had in January and February, the initial shock from the sharp rise in oil prices, and some supply disruptions from the earthquake and tsunami in Japan. Financial markets have taken all that potentially bad news in stride, suggesting that firmer recovery is shaping up. Earnings continue to be strong, and firms are doing well. I continue to expect output growth in the United States to be slightly above trend over the next two years, employment growth to strengthen, and the unemployment rate to move down. I revised up my inflation forecast for this year but expect some reversal of that increase next year as oil and commodity prices stabilize or perhaps reverse course.

As the economy continues to recover, we will need to begin withdrawing policy accommodation. Given inflation developments, I think that time may be sooner than what's

priced into the federal funds market, which expects the funds rate to increase in the first half of next year, and very likely sooner than what is in the Tealbook, which assumes no change in the fed funds rate until the third quarter of next year. My forecast incorporates a steeper policy path, with a reduction in accommodation beginning sometime in the second half of this year.

Our colleague Tom Hoenig has been saying that even after exit begins, policy will remain very accommodative for some time to come. I think we should make an effort to explain this to the public and prepare them for the start of normalization. I have also been sympathetic to his view that moving away from the zero bound could be very beneficial to the functioning of financial markets and would not amount to significant tightening as policy would continue, as I said, to be very accommodative. We have a very good opportunity to convey some of these ideas over the next two meetings—this meeting and in June—and begin to change our language substantially, because the Chairman will be holding press briefings at which he can be more expansive than a one-page statement can be. I think we should take advantage of that opportunity. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. The incoming data point to a more mixed picture than I was expecting when we last met. We are again in the position of trying to judge whether a slowdown early in the year will extend further into the year. Overall, I agree with the Tealbook that most of the slowdown is transitory. In my remarks, I will focus on how I revised my projections since our last submission in January.

First, I do see the incoming data as pointing to a surprisingly weak first quarter. Given the range of weak indicators, I agree with the staff estimate of 1.7 percent GDP growth in the first quarter. There is no shortage of potential explanations for a softer quarter, ranging from

severe winter weather to the run-up in oil prices related to the developments in the Middle East and North Africa.

While much of the softness looks temporary, there is reason to take some signal from the recent data and expect some additional softness in growth beyond the first quarter. In projections from our econometric model in Cleveland, rising materials prices play a lead role in slowing the anticipated pace of GDP growth relative to a few months ago. While I have previously reported small effects of commodity price changes on GDP growth, in our model, overall materials prices affect the economy more than commodity prices do. While I don't anticipate that materials prices will continue to soar, the increases that we've already seen were enough to modestly slow the projected pace of growth. I should also note that my manufacturing contacts have mentioned that materials price increases are importantly affecting activity and profit levels, although not enough to derail growth in their businesses. Putting all of this together, since January I have pulled down my forecasts for GDP growth for 2011 and 2012 by about ½ percentage point to around 3 percent in both years.

The one bright spot among an array of disappointing data releases was the April report on labor market conditions, which confirmed the downward trend in the unemployment rate and confirmed a pickup in private employment gains. Taking a closer look at the implications of unemployment for slack in the economy, my staff presented evidence that labor market slack is not going to go away very quickly. One reason is that despite recent declines, unemployment remains stubbornly high. A second reason is that, based on historical norms, firms have plenty of room to increase both hours per week and the number of workers. Finally, the labor force participation rate is likely to rise as many individuals who would normally be participants in a stronger economy finally return to the workforce. So while labor markets are improving, there is

still a lot of slack in labor markets, and therefore, I don't see wage pressures picking up any time soon.

Labor market slack aside, the upward drift in core inflation in recent months and the rise in materials prices have led me to bump up my core inflation projections from my January submission. I now expect core PCE inflation of about 1¼ percent in 2011 and 1½ percent in 2012.

At our last meeting, there was some discussion about how quickly core inflation can rise in light of the significant increase in core inflation that surprised the FOMC in 2004. My staff examined the chances of a similar rise in core inflation in the current environment. To formally assess this risk for 2011, they relied on a small forecasting model that incorporates current conditions, which include variability of economic growth and inflation that is somewhat higher today than it was in 2004. According to that model, even with today's elevated volatility, the chance of a significant jump in core inflation, combined with modest GDP growth, is only about 20 percent. Now, clearly, this is enough of a risk to merit paying attention to, but we should not react too hastily when higher probability outcomes show a more gradual increase in core inflation. In my view, the chance of a surprise rise in core inflation is much lower today than in 2004, because our economy is much weaker today than it was then. For example, the unemployment rate is more than 3 percentage points higher than it was in the first quarter of 2004.

On inflation expectations, in the Cleveland Fed model, which accounts for a time-varying inflation risk premium, inflation expectations are at or below 2 percent out to 14 years. That said, inflation expectations at horizons of three to five years ahead have risen and are now similar to the levels they were last spring. After the spring of last year, inflation expectations

started to drop with the growing signs of weakness in the economy. This was a critical factor in my decision to support additional asset purchases. So we should not be worried about inflation expectations at these levels, but I would not want to see them continue to rise.

In my judgment, the risk to the outlook for GDP growth remains balanced. While the recent weakness in most of the incoming data point to a risk of a sustained soft spot in the recovery, the surprising strength of employment suggests the potential for a stronger recovery.

On inflation, I think the risks are more to the upside than the downside because of the rise in input costs and the threat that inflation expectations could move higher in response. Still, the most likely outcome is a gradual rise in core inflation with moderate GDP growth. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I have talked to a number of business contacts throughout the Ninth District over the past six weeks, and the high rate of headline inflation was very much on their minds. One concern was that elevated oil and food prices would drive down demand for other goods and so choke off the recovery. But the other real concern was that headline inflation would leak into what we at the Fed like to term “underlying inflation” and generate a persistent high-inflation scenario.

In terms of the latter concern, many retailers pointed out that increases in input prices were putting upward pressures on their costs. However, they remained uncertain about their ability to pass those cost increases on to consumers. One offered story, though, is that they believe that the current high rate of headline inflation will give them, quote–unquote, “more cover” to initiate price increases in nonfood and non-energy goods and services. According to this story, a firm can raise its prices more rapidly because households believe that all of their

prices are rising more rapidly. This story would mean that the apparently transitory increase in headline inflation has the potential to generate a self-fulfilling increase in expectations about core inflation—a self-fulfilling increase that could well prove to be persistent. This story—that transitory movements in headline inflation can translate into persistent movements and inflationary expectations—is one that bears watching. Fortunately, there is little evidence so far that this upward pressure on longer-term inflationary expectations is happening. For example, the five-year, five-year forward breakevens remain in historical ranges. The Cleveland Fed’s measure of expected inflation over the next 10 years, which President Pianalto was just referencing—I like that, because it attempts to strip away both liquidity and risk premium affects—has risen since last summer, but it does remain below 2 percent.

So medium-term and longer-term inflation expectations do seem stable for now, but this risk that the transitory becomes permanent is one that we need to be prepared for. And I’m not sure that we are. If we look at our standard monetary policy rules, they are silent about how to respond to changes in longer-run inflationary expectations. What triggers are we using to tell us that longer-run inflation expectations have risen? Do breakevens need to rise to 3½ percent, 4 percent, 4½ percent? Do the Cleveland Fed measures need to hit 2.2 percent, 2.5 percent? How aggressive should we be if the economy were to hit these triggers? As far as I can tell, we don’t have a systematic approach to dealing with this kind of scenario, and I think we do need one.

In contrast, our policy rules are clear that the level of accommodation should track core inflation. I took what President Evans was describing from the very interesting work that was being done in Chicago as proposing not tracking core inflation but some filtered vision of core, which is trying to tease out the persistent component of core. That would be different from the

kind of rules we have traditionally been using, and it would be interesting to see if those kinds of rules, using historical data, would actually perform better than the rules we've typically used. But for now, I think I would rather stick to the rules the Committee has typically used, the ones that track core. And as a result, and as my memo on reducing accommodation indicated, I am going to be tracking PCE core inflation carefully in thinking about the appropriate timing for reducing policy accommodation.

The Tealbook now forecasts that core PCE inflation will be 1.4 percent over 2011. My own outlook has not changed that much. It continues to be that PCE core inflation will be 1.4 percent or possibly even higher. And our own rules indicate that the FOMC should respond to that increase in core inflation by raising the fed funds rate. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Williams.

MR. WILLIAMS. Thank you, Mr. Chairman. Well, we've heard a lot about disappointing news on the economy. There was some good news that baseball's regular season has begun. And as you all know from reports from John Moore, we follow very carefully the relationship between the U.S. economy and how the San Francisco Giants perform on the field. Unfortunately, like the U.S. economy, the Giants got off to a lackluster start so far this year, but these early stumbles haven't yet caused me to change my assessment that they'll both perform well for the remainder of the year.

The recent economic data and the anecdotes I hear from my business contacts have generally fallen short of expectations in terms of economic activity and suggest upside risks to inflation. Nonetheless, I still see a moderate recovery in train, with underlying inflation remaining low. The open question is whether my optimism, both regarding the Giants and the economy, reflects an accurate reading of fundamentals or just a form of denial. [Laughter]

Overall, my projection is very similar to that in the Tealbook, with the unemployment rate falling only gradually over this year and next, and headline and core PCE price index inflation dipping back down to around 1¼ percent next year as the effects of the surge in commodity prices recede. I'll focus my remaining remarks on just two issues. One is the disappointing tone of recent data that David Wilcox commented on, and the other is the implications of price increases of oil and other commodities.

First, like the Board staff and most private forecasters—I am taking from what I've heard so far from most people here—we have significantly revised down our forecasts for the first quarter in response to the weaker-than-expected incoming data but have left our medium-term forecast largely intact. For me a key question is whether these data might be signaling significantly less underlying strength in the economy than we're expecting. In this regard—and this may be different from what President Lockhart reported—I am struck by how pessimistic and cautious my business contacts sound these days—much more downbeat than a month ago, let alone at the beginning of the year. Indeed, they speak of a crisis of confidence among households who see gasoline prices going up, up, and up, and who everyday read tales of sovereign default, nuclear meltdown, and war. One homebuilder says he sees no shortage of qualified, interested buyers, but they are afraid to pull the trigger; they worry that if they lose their job, they won't find a new one.

So far, despite the angst I sense from my contacts, I am sticking to the story that the recent data have been a temporary aberration and that the pace of recovery should get back on track. In this assessment, I am encouraged by the continued gains in payrolls in the manufacturing sector and the resilience of consumer spending in the face of significant increases in food and energy prices. And even though lending conditions still appear relatively tight,

overall financial conditions have continued to improve. Still, the weakness in recent data and the lack of confidence I hear from my business contacts raise a red flag of possible downside risks to the outlook.

Second, prices of oil and other commodities have continued to move up. These are unwelcome developments both for output and inflation. In terms of output, higher gasoline and food prices are a drag on household spending. And I'm particularly concerned about how they're affecting confidence in line with the crisis-of-confidence views I mentioned earlier.

In terms of inflation, rising food and energy prices are pushing headline inflation uncomfortably high in the first half of this year. I expect that these price increases will leave some imprint on core inflation. Indeed, my business contacts, very much like President Fisher said, continued to stress that they expect businesses to try to pass on past cost increases. They mentioned specifically China and other sources of imported goods, along with energy prices, and they will continue to try to pass these cost increases on to their customers—in particular, they mentioned the second half of this year. This is a comment that we have been hearing pretty consistently for the past few months. I will emphasize, as I think I did last time, that they used the word “try” in terms of passing this on, given the economic climate, but it is something that we definitely hear, especially from retailers in our District.

But I also expect these effects on underlying inflation, in terms of the inflation rate, will be transitory, consistent with the academic literature, and President Evans's recent analysis; here I was referring to your analysis from the last meeting, but your new analysis would be consistent with that, too. I'll highlight two reasons for this expectation of muted second-round effects from the bump-up in headline inflation under wages or underlying inflation. First, importantly, the U.S. labor market today is characterized by relatively little real-wage rigidity. And here I am

thinking about COLAs, or automatic cost-of-living adjustments, or other impediments in the labor market. Now, this contrasts starkly with many European economies where institutional features of labor markets likely contribute to real-wage rigidity and the second-round effects of inflation on wages that were in evidence there. I think the United States is very different from Europe in this regard, and that's important in terms of thinking about inflation.

Second, inflation expectations, I would say, remain remarkably stable in the United States, despite the sizable swings in commodity import prices. Admittedly, households' short-term inflation expectations surged in the past few months, and this does raise the worry that workers could try to bargain for higher wages, and that could potentially ignite a wage–price spiral. I don't see that as a major risk. Research at the San Francisco Fed has consistently found that household inflation expectations tend to be overly sensitive to recent data. In particular, as reported in the Tealbook, household inflation expectations are highly responsive to food and energy price inflation. Futures prices suggest that the prices of most commodities won't keep rising at double-digit rates and will probably stabilize. And based on past patterns, as food and energy prices stabilize, household inflation expectations should also come down to more normal levels.

In sum, I expect the recovery to remain on course and for underlying inflation to remain low. But there are numerous risks to this outlook, and I'll be watching the data carefully, looking for signs of a shift in the underlying trends, both in terms of output and inflation. Thank you.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. First of all, our region of the country is doing well-to-booming. If you look at the downside, our housing market is comparable to other areas

where there was a buildup of supply that exceeded the buildup in household formation; that we're working through. Once you get by that, our manufacturing sector came down slightly in our most recent survey, but that was from a record high and we are seeing that continue to expand. Our retail sales did slow down in the first part of the quarter, but did pick up pretty significantly in March, which, from our point of view, is very positive. Agriculture is continuing to do very well—a boom—and energy is also in a boom environment.

To add an anecdote on my concern for leverage, I think it is worth sharing this. We have a pretty sizable energy company, recently formed in the past five years. It shifted its strategy toward oil, away from natural gas. And they were able, because of the low cost to leverage, to buy 1 million acres of development rights on land in our region for about \$200 million—\$200 an acre of development rights. They then formed a royalty trust and took approximately 65,000 of those acres from which they had borrowed the \$200 million, went on an international tour and raised money from sovereign wealth funds for rights to this royalty unit, and then closed their deal here in the past few weeks for rights on 65,000 of the 1 million acres for \$238 million. So leverage is doing well in our part of the country: low cost of borrowing, easy money, lots of liquidity sloshing around, here we go. So I bring that up as a caution to this Committee.

On the national level, I agree—information we have received since the last meeting indicates that the economy recovery continues and that our labor markets are improving modestly but steadily. Household spending and business investment in equipment and software both continue to expand, while at the same time improving their balance sheets, which is good, from my point of view. Since the last meeting, we have also seen that inflation expectations have remained, as we say, contained, except that what we are seeing for energy, food, and now a broader basket of goods indicates confidence may be waning in that particular sector. One thing

on unemployment—if you break it out, we are seeing pretty significant improvements in employment for college graduates. We are seeing less in terms of high school and non-high school; I'm not sure monetary policy can solve that, and I think we should be mindful of that.

One other thing that I worry about is that while we talk about our very accommodative policy as necessary, we also see these energy and commodity costs rising and moving forward. And, yes, they may be transitory, but I'm afraid that when you have wages that are not rising, real income is falling, and high prices in that environment actually kill demand because incomes can't keep up. And the effect on that middle income group that we are so concerned about supporting is going to be negative, not positive. So we may not see the inflationary pressures three and four years from now, but that may be because we have a new economic crisis built around the fact that we put all of this liquidity into the system, built these commodities up, and when the prices adjust and come down, it will be because we have starved the middle class in terms of real-wage increases.

I think we need to be careful about how long we leave this very accommodative monetary policy in place, because we are creating imbalances. They are going to correct. And that, of course, will fall most heavily on those with middle and lower incomes. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Reports from our contacts indicate that the Fifth District economy continues to grow. Our April survey released this morning indicates that manufacturing is expanding, though not quite as broadly as before. Our respondents remain quite optimistic about future conditions, though, and many have plans to hire in the first half of the year. Several firms told us of difficulty finding adequate workers, because they preferred to collect unemployment benefits or can't pass drug tests. Service-sector activity is expanding

more broadly now, and our retail index swung strongly into positive territory this month with big gains posted for sales revenue and shopper travel. Expectations for demand over the coming six months improved noticeably as well.

Commercial real estate markets continued to show signs of improvement in some areas of our District. While vacancy rates are mixed across the District, strong markets such as Washington have been able to attract financing and investment. Several contacts have noted the availability of construction financing for federal buildings, educational institutions, and medical facilities. They called this the “feds, eds, and meds sectors.” And the data center market is said to be exploding.

Commentary on inflation pressures was once again widespread, as many of you have remarked as well. Price growth picked up in both our manufacturing and services surveys this time, and is at or approaching the all-time highs for those series that they reached in 2008. Manufacturers report passing on cost increases to industrial users but indicate difficulty passing them on to retailers.

It’s worth noting that the current wage index has picked up in both manufacturing and nonretail service sectors, and the manufacturing wage index number is the second highest on record. At the national level, in response to softer data, the Tealbook has lowered its near-term forecast for GDP, and I think that makes sense. It seems reasonable to pull down projections for consumer spending in light of the energy price increases and other gloomy news, although I haven’t pulled down my forecast quite as much as the Tealbook’s. In addition, the Tealbook has written down a lower trajectory for residential investment this time, which I also wholeheartedly endorse. The first-quarter numbers for housing managed to underperform my already minimal expectations, and I continue to expect housing activity to remain at exceptionally low levels for

an extended period. In fact, my housing forecast looks more like the Tealbook's fed funds forecast—[laughter]—for that matter, my fed funds forecast looks more like their housing forecast.

On the other hand, the outlook for exports and business investment in equipment and software looks pretty good at this point. I'd part company with the staff with respect to second-half core inflation; they have it, I think, settling down, and I have trouble dismissing the many anecdotes we've heard from firms that are having their margins squeezed and are expecting to raise prices later this year. We've gotten those reports for several months now, and they come from various-sized firms and various industries and various locations around the District, and they are reminiscent of what we were hearing in 2004 when core and overall prices did accelerate appreciably. My best guess is that we'll see a relatively permanent step-up in core inflation to near 2 percent. I don't view this as inconsistent with our reads on the expectations of the public regarding inflation beyond the near term, and those appear to be reasonably well anchored at this point. And I think that is going to temper the extent to which a significant part of firms' cost increases are incorporated into final prices, and that should keep core from rising much above 2.

But I don't think we can take those favorable expectations for granted. I think we need to be sure to validate those expectations. They rest on some presumptions about our actions and statements, our reaction function. So we are going to have to make sure our actions and statements in the coming year do validate those expectations. In my view, this is going to require that we return policy to a neutral stance more promptly than the Tealbook assumes.

Two final comments. One, President Kocherlakota very aptly noted that the policy rules to which we make frequent reference leave out changes in inflation expectations, because when

we apply them in the models we leave out any doubt in model agents' minds about the likelihood that we are going to stick to that policy rule. There is empirical work done by a former colleague of mine, Marvin Goodfriend, an essay from about a decade and a half ago called "Monetary Policy Comes of Age" in which, for the period after Volcker and Greenspan, he documented instances in which longer-term bond rates rose by a substantial amount in a very short amount of time, more than could be attributed to a change in expected real rates, and from which the Committee inferred were changes in inflation expectations. And the Fed reacted strongly to counteract that and to tighten policy by more than we otherwise would have. I think that's the place to look for guidance as to what magnitude of response one ought to presume in a reaction function like that.

Finally, in response to President Evans's remarks, I would like to disavow any unhealthy preoccupation with endogeneity or exogeneity [laughter] and ask you to consider an experiment: Start a DSGE model projection with initial conditions in which slack variables are less than they really are—say, in your last period, say the fourth quarter—because of a configuration of shocks that lead them to be less than they otherwise would be, and in which marginal costs are commensurately lower. My conjecture is that you would get a higher inflation forecast, and I think that experiment could motivate commentary to the effect that slack will keep inflation low. As you can see, there is nothing essential about endogeneity or exogeneity there. I don't think that thought experiment is inconsistent with anything you said, so the attribution to exogenous shocks versus slack—I just don't see the distinction there.

Now, I haven't seen your group's research, and it's been a little while since I reread Christiano, Eichenbaum, and Evans, at least a few weeks—[laughter]. But more to the point, my guess is that agents in that model and in your paper—back to my other comment—have

100 percent confidence in a reaction function. I don't believe real-world agents are quite that confident. For evidence, you could look at the five-year, five-year forward last year when in the summer we had this fall in inflation expectations, and it seemed inconsistent with us being believed with 100 percent probability to be following a constant rule.

I will say, though, to President Evans's credit, he has given me a brilliant idea. I think I am going to ask my staff to do research extending my *JPE* article.

CHAIRMAN BERNANKE. It'll take five years to get published, though. [Laughter]
President Bullard.

MR. BULLARD. Thank you, Mr. Chairman.

MR. EVANS. Mr. Chairman, can I say something?

CHAIRMAN BERNANKE. Do you want a rebuttal?

MR. EVANS. No—the reason I mentioned slack is that there's not an output gap in that model. I mean, slack is when you put it into the Woodford-type of style, and you talk about the different type of market equilibrium. We can construct a slack variable; that's a concept that we did for the inflation dynamics. But per se, marginal cost is really the relevant thing. So you have to work pretty hard to come up with a concept that looks like a Woodford slack variable. But the object that you would work on to get at what you are talking about—which is a valid experiment, I'm not denying that—would be to pump different shocks in there.

MR. LACKER. What you say is exactly true. The inflation dynamics run off marginal cost. There is this link that one can draw in many models, a one-to-one relationship between the level of marginal cost and the level of the variable that seems to accord with the notions of slack.

MR. EVANS. I was trying to skip that additional assumption, which often is at the heart of what people are objecting to, which is, it's not observable. But we can talk about this more. I

understand that we're going to have some discussions about DSGE models at upcoming meetings as well.

MR. LACKER. Okay, great.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. The Eighth District economy continues to expand at a moderate pace. Businesses associated with agriculture, in particular, seem to be doing quite well. This may be affected by recent wet weather in the District, but we'll have to see on that. Land sales, as I have reported before, seem to suggest pretty rich valuations. Commodity price increases are a key concern, as they are all around the table here. Gas prices are nearing levels which might importantly influence household behavior but don't seem to have done so quite yet. I agree with Presidents Fisher and Lacker that many CEOs view higher commodity prices as forcing price increases for other goods, and in particular, for their own goods. That seems to be a very prevalent view and much on the minds of business leaders.

Reports on housing and commercial real estate in the District were mixed. Foreclosure rates in the District remain lower than for the nation as a whole by a substantial margin. Anecdotal reports in the District seem to indicate moderate improvement in labor markets—more ideas about hiring from more firms. Banks continue to report relatively weak loan demand, and I think we should all keep in mind, there's an awful lot of banks out there that are in pretty weak condition still, and we've got a long way to go on that dimension.

Transportation businesses in the Eighth District seem to indicate moderate to strong growth ahead. They are worried about energy prices possibly increasing further from here, but they seem to be okay for now. Most of these firms make surcharges to cover energy price changes. They do worry about that cutting into demand eventually, but for now, things seem

pretty robust. There is some shifting that is occurring in the industry to lower-cost, slower transportation and away from the higher-priced products and the faster products. Technology businesses also report robust activity—in fact, incredibly robust activity. There is something of a boom in certain technology labor markets. Competition for talent is fierce. The comment I got from a major technology firm was, “It’s like 1998 when it comes to hunting for talent in this area.”

Nationally, it appears that the first quarter will be weaker than was once expected, and weaker than I expected late last year and early this year. But I agree with the Tealbook assessment that the second quarter and the second half of this year is likely to be stronger than the first quarter. Part of that is based on somewhat stronger labor market performance over the last six months than expected. I also agree with President Lockhart that anecdotal evidence that I have heard seems to be at odds with the pretty soft Q1 numbers. To me, that suggests that there are special factors driving the first-quarter number. We will see what it is; we haven’t actually seen the first-quarter number yet.

We obviously face substantial risks in the economy, and the ones I am going to list here are the same ones cited by President Williams. I do worry about all of them. First and foremost is oil prices and continuing turmoil in the Middle East and North Africa. My main comment on that is that it does not appear to be a so-called Hamilton shock so far. Jim Hamilton is a leading researcher on this topic. For him, the price would have to go quite a bit above the moving average of the price over the past three years, so that would be actually a very large number on West Texas Intermediate. I’m not sure quite what to think about that, but I do think that households are maybe a bit better equipped to handle high energy prices than they were in 2008 when it really was a shock. One of the things that happened in 2008 was that we went through

\$100 a barrel oil for the first time in March 2008, and then it went up almost 50 percent from there in the next three months. People started to wonder, is the world coming unhinged? And I think that really changed household behavior. I'm not quite sure what we'll get this time around, but obviously it bears very close watching.

On Japan, I just don't see the situation getting worse from here. I see it slowly getting better. There are anecdotal reports in the Eighth District about plant shutdown or slowdown, so that is affecting manufacturing, as we heard in the staff reports. That is important, but I see those as temporary factors. It may be a little bit more persistent than I would have thought over the past couple of weeks.

On Europe, I was in Europe. I do see renewed tension there. I do see some potential for continuing problems. I got two views in Europe. The private-sector view seems to see bad math for Portugal, Greece, and Ireland. They see trouble ahead. I saw a public-sector view that sees delay as a strategy. I didn't think this is a good mix. The private sector seems to smell blood in the water, and I'm a little worried that this is going to get away from the Europeans. They have been very good about addressing problems. Hopefully, they'll come through again this time, but I am a little worried about that situation. The problems there are not really resolved. It continues to be a risk from our perspective.

The U.S. fiscal situation—your guess is as good as mine. Outcomes remain unclear. It is still a wild card, in my view. Despite these risks, though, the best bet is, all of these will be resolved in a reasonable way and that the outlook for the U.S. economy is still reasonably good for 2011.

I'm going to turn now to remarks on core versus headline inflation, because this is a key topic for us, and I have several remarks. First of all, in my view, control of headline inflation

over the medium term is the policy goal. These are the prices that people actually pay, and so this is the index that we have to work with. Core is not the policy goal, though I think it sometimes seems to be, because we refer to core so often and use it so much in our analysis. It's true that headline inflation is generally more volatile, but so what? That is the policy problem that we face, and that's our job. It is not really our job to make our policy problem simpler than it really is. There are stories that take the view that if we adjusted policy in reaction to the volatile consumer price index, or PCE inflation index, we would get an unstable feedback loop and cause havoc in the economy. Stories about unstable feedback are unproven, in my view. There's very little research on this. And, anyway, you'd have to adjust your policy rule so that you adjust in an appropriate way given the volatility of the inflation rate that you are looking at.

One reason to look at core, obviously, is as an indicator of future headline inflation. I am not convinced by this argument, and I have five remarks on it. The statement that core predicts future headline is usually associated with univariate forecast models. That is, inflation as a function of past inflation alone, appropriately measured, without other variables. This is not how we normally forecast inflation as a Committee; we include other variables such as inflation expectations and slack variables, as was just being discussed. One example would be Stock and Watson at the Jackson Hole conference last year, but there are many other examples.

A second remark is, in my view, core has little theory behind it. It comes to us from the 1970s where we just threw out certain prices because they were inconvenient to look at. It has a long and venerable tradition around the table, but it doesn't have much to commend it from any statistical perspective or any theoretical perspective.

One might think that what we're doing is throwing out the components of inflation that have the highest signal-to-noise ratio for the various components. If you look at simple measures

of the signal-to-noise ratio, energy indeed has the lowest signal-to-noise ratio, so it would make sense, if you want to pick one off, to throw out energy. Food is actually not the second-lowest signal-to-noise ratio in the inflation index, and in fact food actually has a relatively high signal-to-noise ratio. So the food part doesn't make very much sense. Results like this, and all the things I am going to talk about, are also very dependent on the sample considered; that is always a problem when we are looking at issues like this.

You may not care about theory as much as I do, so let's just think about empirics alone. But the empirics are also weak. In the paper by Julie Smith, which is sometimes cited on this topic—forecasting future headline inflation with some measure of core inflation, including a traditional core inflation measure—the traditional core inflation measure actually has the highest root mean square error in predicting future headline inflation. So other types of core measures do better in that particular paper. Results, again, are sensitive to the sample period for all measures. And as is typical of empirical work in this area, it's going to be very sensitive to what time period you are going to look at. It is hard to get really clean results that warrant the kind of emphasis that we put on it around the table here.

Now, a very legitimate issue for the Committee is: What subset of prices, if any, could be the central bank target? If you don't want to target the overall measure of inflation, there may be reasonable ways to think about some subset of prices that are the prices that you want to emphasize and that you want to target and talk about. There is a literature on this question, and that literature does have the potential to rationalize a focus on a subset of prices instead of the overall price index. But so far, this literature seems to have very little influence at the FOMC, and this may be because the typical recommendations that come out of the literature are almost nothing like what we typically talk about here at the table.

One result from the literature is that you should focus on the sticky-price sector; that comes from Woodford and his coauthors. You would arrange the prices by the ones that are the most sticky, you would create an index of that, and then you would target that. That would be an argument for looking at some subset of prices instead of the overall prices. We don't do anything like that as far as I know. Another result, if you look at it in an international context with sticky prices, comes from Clarida, Galí and Gertler who have a multicountry model. In that model you would focus on the domestic sticky prices and forget about the import prices. We don't seem to do anything like that.

Even though these are not popular conclusions—and maybe they shouldn't be, maybe they are not established enough in the literature—it may be fruitful to think more carefully about why we might wish to focus on a subset of prices, or, otherwise, just abandon that, and say we are going to focus on the overall price index. Then we could better rationalize what we do than what we do now.

Now, if you don't care anything about that, then let's just talk about practical concerns on core versus headline. Obviously, it is a problem for us to refer to core measures because people say that they have to pay the other prices. That always happens when commodity prices are rising in the U.S. economy. So I think we should certainly deemphasize core inflation as an ultimate goal, and, indeed, some of our rhetoric has moved away from talking so much about core inflation to talk about headline inflation as the medium-term policy goal. I would go so far as to possibly take core PCE inflation out of the FOMC projections. I think it gives it too high of a status. And, as I'm arguing here, it doesn't have enough credibility to warrant that status.

Temporary headline inflation movements can just simply be called “temporary.” We can just say, yes, inflation is high right now, but we don't think it's going to continue to be high, and

that's the way it is. We don't have to refer to core to make that argument. And we can do other things to smooth out data measurements. We can look at inflation movements from one year ago, for instance, as a way to smooth out movements in inflation as opposed to excluding certain categories of prices.

One final practical consideration on commodity prices. We often say that the increases in commodity prices are due to global demand, evidently outstripping global supply. I have made this argument many times myself, and presumably China and India are key drivers in this argument—that is, they are key drivers of the global demand in commodities markets. But then we turn around and we say that we think the situation is temporary, but the situation with China and India is not a temporary situation. This is going to go on for decades. I think that citing the global factors that you know are going to continue for decades gets us in a bit of a trap when we turn around later and say, “I think these are going to be temporary factors.” Even though I've done it myself, I'm not sure that that is always the best argument.

The bottom line is that I think core versus headline inflation is a long-standing issue for the FOMC. It's certainly a hot topic right now, and I'm sure it will continue to be in the future. Maybe now is the time to deemphasize core inflation. If you want a less volatile measure, use one that is perhaps more defensible, something that we can point to and say that we've got a better rationale for it, other than that it has been used for decades here. I think that might be helpful to the Committee going forward. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard, you raise valid points about the relationship between core and future headline, but I think the idea that we target core inflation is kind of old. I think everybody around the table does target forecasted headline inflation, and I just want to mention that tomorrow in my press conference I will be highlighting

the projections, and I'll be focusing entirely on headline inflation, but on the forecast of headline inflation in the medium term. Your comment about taking core out of the projections is an interesting one, though. I'll have to keep that in mind. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. On the activity today, I think I share the views of many people around the table that, while activity looks better than last summer—faster job growth supported by a healthier financial system, and a trade sector that looks more likely to make a persistent contribution to growth, which I think is very valuable—it's disappointing relative to where we were at the last FOMC meeting, with real GDP growth in the first quarter quite slow and the rebound in the second quarter quite modest.

I think what is striking to me is that this is occurring at a time that fiscal and monetary policy is on very stimulative settings. The state of monetary policy ease will start to moderate if we complete our large-scale asset purchases, and fiscal policy is going to turn significantly restrictive in 2012, even in the absence of additional fiscal measures by the Congress. We calculate that we are on track for fiscal restraint in 2012 of about 1 percent of GDP, which is pretty sizable if the economy is going into that growing at a 3 percent-plus type of rate.

In terms of the first-quarter GDP print, I agree with David Wilcox's comments, it does seem to overstate the weakness. The ISM surveys, the industrial production data, the consumer spending, and the labor market developments all seem more positive than that. So either we will have upward revisions to the data over time or the production will go into inventories. We'll just have to wait and see how that plays out.

I do think, though, that there are some significant risks to economic growth posed by higher energy prices. I note that the magnitude of the increase in the oil bill for households is roughly comparable in size to the payroll tax cut. The problem is that the payroll tax cut is

temporary and reverses the beginning of next year, and it's not clear how long the energy prices are going to stay elevated.

On inflation, I think that there is no great surprise that the higher oil prices are feeding into headline, and, of course, there's a little bit of spillover into core. Where I'm maybe a little bit more concerned than the staff is on inflation expectations. I think you can point to the data and say, well, they're still reasonably well anchored in the sense that the University of Michigan consumer expectations five-year measure has come down in the April survey after going up a lot in March, and you can point to different measures of five-year, five-year forward TIPS breakevens showing different things, but I do think there's quite a bit of risk here if you take a look at the whole picture. We have very stimulative monetary policy with a large Federal Reserve balance sheet. We have fiscal policy on an unsustainable path. We have significantly higher gold prices, significantly higher silver prices. We have a dollar that's actually weakened quite a bit over the past few weeks. I think that while you could still argue that inflation expectations are well anchored, if I worry about what is going to happen next, I think the risks are very predominantly on the side that they could become less well anchored.

In terms of the systemic risks that we face, there are a number of things that are concerning. Nathan touched on some of them. The European problem is not going away; there are at least four problems there. First, Greece is lagging behind where they need to be. In other words, they are not performing up to their commitments, so that means that they need more resources. Second, the political constraints I discussed at the last meeting are becoming more binding as core European countries are less willing to provide that additional aid that Greece in fact needs. Angela Merkel has suffered some political setbacks, and the Finnish elections showed that those who do not favor aid are gaining political ground. So as a consequence of

that, some of the German authorities have put restructuring on the table after keeping that very much off the table for many months. This is not a timely development, because it obviously sets in place very bad dynamics leading to much higher interest rates in the periphery, lower prices, and that, of course, just reinforces the likelihood that the restructuring will have to take place. It also raises the potential needs, because if the Greek debt were restructured, then the Greek banks would be impaired by a greater margin. So you not only need more money for the Greek government to continue its operations, but also for the Greek banks to be able to stay in business. It is not at all clear where those resources would come from. And as Nathan pointed out, this all increases the contagion risk to Ireland, Portugal, and even Spain. Spain up to now has been able to sail away from the rest of the periphery, but there could be political setbacks in Spain, so I don't think that they are out of the woods by any stretch of the imagination. The final problem in Europe is that there is really no viable exit strategy. The financing mechanism that is supposed to succeed the EFSF would be a financing mechanism in which the debt issued from that facility would be senior to the existing debt, so all of the incentives are for private investors to exit. All this means is that all of the debt of the periphery is now getting concentrated in public hands—either the ECB directly holding the debt, the ECB financing the debt, or the EFSF funding the debt. So it's not really clear how this is going to play out over the medium to longer run.

A second issue is Japan. The supply constraints have gotten most of the attention. What struck me, though, when I was there a couple of weeks ago is that there is also a pretty sizable demand shock in Japan. Tokyo is as quiet as it's ever been, and a lot of the leadership in Japan is talking to people about how you need to go out and go back to business as usual, go to parties, go out drinking, do all these sorts of things. But nobody feels like doing that. And I completely understand that. One, it is a terrible tragedy, and people are in mourning. But, two, you can't

get away from what has happened, because every day there are aftershocks. We were in Tokyo for 36 hours, and there were at least six earthquakes in that 36-hour period—one of them when I was actually speaking. The chandelier started to swing, which is a little disconcerting, [laughter] because every time one of these earthquakes starts, you don't really know what the ultimate magnitude of the earthquake is going to be. So I think it is very difficult for them to get back to business as usual.

The Middle East–North Africa also remains an issue. I guess the news there is that not much has spread beyond Libya to other oil producers. But the bad news is that it looks like a complete standoff in Libya. Also, the bad news is that Saudi Arabia has basically said they were going to pump additional crude, but the crude either isn't forthcoming or it's not demanded because it's not as high quality as the Libyan crude. The Saudi promises haven't actually led to additional supply, and there is not actually an oil response to that increased willingness of the Saudis to pump oil. So it seems to me the risks there are very much on the side of oil prices staying higher for longer, and crimping real income.

Then, finally, we have our own little set of risks that we talked a little bit about earlier—the Treasury debt limit ceiling. I think that there's a real risk here, in part because the two sides are really far apart, and because they are both looking for political advantage going into the next election cycle. There is really a risk that the brinkmanship turns into miscalculation. And the risk there is greater because the markets aren't taking it seriously, and people can say, “What's the big deal? Markets aren't worried about it, so let's go to the edge.” I wouldn't make much of the S&P putting the U.S. on negative watch. I think that is just catching up with reality. I think what really matters is what the Congress does or doesn't do over the next couple of months.

Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. My view of the modal outlook is little changed since our March meeting. I agree with the contours of the Tealbook and in particular with the judgment that the first-quarter soft patch probably reflects idiosyncratic factors with relatively little bearing on the outlook. I anticipate economic growth at a moderate pace during the second half of the year and expect it to strengthen over time.

An armada of headwinds is constraining the recovery: higher food and energy prices, falling housing prices, ongoing weakness in residential and nonresidential construction, intense pressures on state and local government spending, and, beginning next year, significant fiscal drag from the federal budget. Nonetheless, I anticipate that the impetus from investment and consumer spending, along with robust global growth, will prove powerful enough to overcome these drags. Business confidence has improved markedly. Manufacturing activity is robust. Our accommodative monetary policy has caused credit and broader financial conditions to ease, supporting aggregate demand through many different channels. There are heartening signs of improvement in the labor market, and recent data suggest that unemployment and vacancies are now tracing the cyclical pattern that has been typical of past recoveries. I see this as encouraging evidence that unemployment is mainly cyclical, not structural, and should, therefore, revert to normal as the recovery proceeds. My bottom line is that the U.S. economy appears to be in a self-sustaining recovery that is proceeding at a moderate pace. I expect the output gap and unemployment to decline, but slowly, so both will be substantially higher than normal levels at the end of the forecast horizon.

Turning to inflation, measures of underlying inflation remain well below the 2 percent level I consider consistent with our dual mandate. For example, the market-based core PCE

price index has risen less than 1 percent over the past year, and at an annual rate of 1.2 percent over the three months ending in February. These inflation outcomes partly reflect healthy productivity growth and modest wage increases. Unit labor costs have barely increased since 2007. Moreover, inflation expectations remain generally well anchored. Higher commodity prices have naturally caused headline inflation to surge in recent months. Core inflation has also picked up somewhat as producers are passing through a portion of their higher input costs into the prices of a broad range of goods and services. However, as long as commodity prices generally level off, I expect that by around midyear, headline inflation will revert to rates close to those of core inflation, which in turn should decline significantly over the second half of this year. With exceptional slack in the labor market throughout the forecast horizon, I see little chance of the second-round effects that would occur were employers to boost wages in an effort to compensate workers for the real income losses they have sustained. And here I agree very much with President Williams's comment that there is virtually no evidence in the United States of real-wage rigidity. Therefore, I expect inflation to remain subdued throughout the end of the forecast horizon.

My modal forecast is benign, but the risks surrounding it keep me awake at night. As policymakers, our job is to be prepared to respond to a wide array of potential threats, and some could necessitate more-rapid policy tightening, whereas others would call for additional policy accommodation. We therefore need to maintain open minds on the future stance of monetary policy.

The most obvious risks relate to commodity prices. Higher food and energy prices are sapping household purchasing power, and the effect is evident in consumer surveys and anecdotal reports of retrenchment by the lower-income households most severely affected.

Anecdotal evidence also suggests that the uncertainty associated with recent commodity price trends is causing some businesses to put expansion plans on hold. These existing downside risks are compounded by the possibility that futures prices notwithstanding, commodity prices could escalate a lot further, potentially derailing the incipient recovery. Were such a scenario to materialize, we might well conclude that policy should be more accommodative than in the Tealbook baseline. Of course, we must also be prepared for the possibility that a further surge in commodity prices could push up inflation and inflationary expectations, triggering a wage–price spiral to take hold. Such a development would necessitate a significant policy response. Our experience during 2002 to 2008, when oil prices more than quadrupled, but measures of underlying inflation remained close to 2 percent, gives me comfort that commodity price movements need not trigger such an outcome, but we cannot take such a benign scenario for granted.

I actually have quite a long list of risks that I worry about, but I'll mention just one other. A second risk that worries me relates to fiscal policy. Meaningful efforts to cut the federal budget deficit could produce a significant and extended drag on economic growth in the years ahead. The recognition in the Congress that a multiyear budget plan to stabilize the U.S. debt-to-GDP ratio is essential to fiscal sustainability and longer run economic growth is heartening. Failure to enact such a package would threaten our financial stability, while an extended period of delay would be associated with elevated uncertainty that could start weighing heavily on the spending decisions of households and businesses. However, the needed fiscal adjustment is substantial, and a program on the necessary scale could be associated with significant fiscal drag that would reduce the equilibrium real interest rate in coming years. In

this scenario, a highly accommodative stance of monetary policy could be appropriate for quite some time.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. Bankers and bank analysts are increasingly less worried about credit quality and much more worried about the ability of banks to generate asset and revenue growth. Credit metrics are within or rapidly approaching long-term acceptable standards in commercial lending, auto lending, and now in credit cards. Classified assets are declining at larger banks and leveling off at smaller banks, and a number of bankers point out that a significant portion, up to one-third, of CRE assets classified as nonperforming have continued to pay as agreed. Absorption of commercial space continues but at low rental rates. Still, cash flows support debt services as long as interest rates remain low.

Even in residential mortgage portfolios, new entrants into delinquency are slowing. Bankers suspect that this improvement could be seasonal as tax refunds could be helping borrowers catch up, but they point out that, at least, if borrowers are using the cash from tax refunds to make mortgage payments rather than something else, that would represent progress. It's also possible that this is finally a manifestation in mortgages of the credit cycle that we already saw play out in auto and credit cards, as fewer borrowers are losing their jobs and newer loans are of much higher quality. I also believe that the sharply lower delinquency rates across products and across borrowers are indicative of less financial stress among those who still have access to credit or credit outstanding, possibly a signal that we're coming to the end of deleveraging, especially among consumers. However, I would point out that this signal would not apply to the long-term unemployed, those who have found jobs at much lower wages than they had previously, or those with severely delinquent or underwater mortgages.

Demand for all types of credit remains weak. There's some growth in C&I lending primarily reported by larger banks lending to larger companies, but it is still event driven, such as for loans to fund mergers and acquisitions. Those who reported lending for working capital or capital investment cited loans to strong sectors such as manufacturing, energy, and agriculture-related businesses. There also appears to be some slight pickup in small business lending and evidence that small businesses perceive loans as slightly easier to get. Banks reported easing of terms and rates in commercial lending in the SLOOS. Easing is usually prompted by competition, and, indeed, in my conversations, a few bankers characterized competition for C&I loans as aggressive. A number of banks reported some demand and some appetite for new CRE loans, primarily for purchases of existing properties, refinances, and multifamily. Banks also reported easing standards in consumer credit in the SLOOS. However, the bankers pointed out that during the recession, credit performance for a given credit score band had deteriorated, so the cutoff scores were raised. What they now report as easing is really a return to the previous levels.

One of the key assumptions in the Tealbook forecast is that the economic recovery will be supported by increasing credit availability. Overall, my impression is that credit conditions are considerably easier than they were at the height of the crisis, but that, with the exception of residential real estate lending, they're probably pretty close to as good as they're going to get.

Even as loan demand remains weak, deposits continue to show strong growth. Bankers are having a tough time finding ways to employ these additional deposits. Most have already replaced much of their wholesale funding with deposits. Some are actively using lower interest rates to discourage new deposits and refusing to bid on large deposits, and rates are reportedly

being quoted in the single digits for large deposits, consistent with the rates we're seeing in other short-term markets.

Finally, lest we get too complacent about reserve levels, as a final indicator of bank balance sheet preferences, we could look at banks' willingness to hold reserves. About two-thirds of the reserves created since we started the LSAPs in November have been absorbed by foreign banks, and a few large U.S. banks have substantially reduced their individual holdings of reserves even as the aggregates have increased. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Since our March meeting a lot has happened, but I don't think the basic lay of the land has changed significantly. Two features continue to frame the picture. First, the economy certainly has some self-sustaining momentum, but still not at a particularly robust pace. The well-documented obstacles to a sharp recovery from recession that has been induced by a financial crisis have proved just as enduring as Ken Rogoff and Carmen Reinhart predicted. At some point, obviously, obstacles such as the overhang of foreclosed homes will recede into the background, but this hasn't happened yet. Second, there continue to be an unusual number of essentially political or geopolitical risks, many of which were rehearsed by Bill a few minutes ago, that could slow even further the modest speed of the recovery.

Last week I found myself lowering my economic growth projection under the cumulative weight of these risks. Strictly speaking, I guess I probably shouldn't do that, because I think we're supposed to give a modal projection rather than a number discounted based on the combined likelihood and severity of significant risks. But the very number and persistence of these risks, particularly the potential for more political turmoil in key oil-producing regions,

makes them hard to exclude from even a baseline projection. And as I think John mentioned earlier, some appear already to have negatively influenced consumer confidence.

This may seem like a relatively pessimistic read of the economic landscape, and I have three responses to that. One, relative pessimism has served me pretty well in the last couple of years. [Laughter] Two, I note that the central tendency of the FOMC has come down to where I was in January, and I've just gone down a little bit further. And, three, I do weight the risks to economic growth to the upside in my projection, and I suspect a number of you actually weight to the downside.

Rather than going into more detail on the projection, I want to spend the rest of my time on how we're going to go about thinking about inflation over, I suspect, the course of the next several meetings. A lot of people have already addressed it today. Over the weekend, one of the many things I did instead of hunting for Easter eggs was to go through the transcripts of the FOMC from the middle part of 2005 and from all of 2008, periods during which there had been big run-ups in oil prices and, to some degree, other commodity prices, to see how the FOMC was assessing what was going on and to see whether we can learn anything from that experience.

I'll return to that in a moment, but I first want to say that I think what a number of you have tried to do today is to both develop a model or a theory or at least a mechanism for how commodity prices or other current headline inflationary forces would carry forward into future inflation. And then I think some of you have tried to specify what some of the tangible data-driven indicators of those trends would be, and that seems to me not only the right but the essential way to think about this going forward. We both have to have a concept of how we think current pressures would persist over time, and, because we can't for good reason afford to

wait until that actually happens, we have to try to identify what kinds of data would give us some fairly strong basis for believing it will happen.

But I contrast that with just stating things that might happen, and this is what one learns by going back and looking at the transcripts. Concerns about commodity prices, particularly reports of what businesses are saying—and there was a lot of this in 2005 and 2008—read like this: “Man, we have just shifted. We are now thinking in inflationary terms.” And of course, about six months later they weren’t. So I think that’s the kind of information that we have to discount because it hasn’t proved particularly probative in the past. Anecdotes can help us question what sorts of data streams would be useful, but ultimately, we need to be a somewhat data-sensitive group when we start to make our decisions.

So let me try to add one piece of information here, but this is hardly dispositive. I’m looking again at labor markets, which won’t surprise you, and I begin with a somewhat puzzling phenomenon of the unemployment rate having dropped so much in the last six months despite a rate of net job creation that was, until recently, quite tepid, and even today is not particularly robust. Without any more information than that, I think one would assume that the reason for this phenomenon is a drop in the labor participation rate reflects the combined effects of extended UI benefits expiring, the long-term unemployed becoming discouraged and leaving the labor force, and the impact of a couple of years of a declining trend in participation because of an aging population, which is just now showing up on the other side of the recession after having been masked by the big dislocations of the past couple of years. And I think there’s something to all these explanations. The Board staff has been trying to dig deeper in order to quantify each of these effects, and I suspect their analyses will be of considerable importance not just for present purposes, but for monetary policy going forward.

But there are indications, admittedly preliminary, suggesting that something else is going on here, and I'll mention two. First, if trend participation is to be an important part of the explanation, one would expect it to show up principally through demographics—that is, participation rates begin to decline pretty dramatically for each five-year band of people beginning at age 55. Even if, as seems the case, the participation rates of older Americans are increasing now based both on choice and economic necessity, there's such a gap between the rate for 50-year-olds and rate for 65-year-olds that this shift would be swamped by the fundamental fact of the baby boomers getting old.

This logic of changing trend participation will probably be reflected in the data over the medium term, but it has not been reflected in the data for the last year. The BLS doesn't publish age-specific data on employment and unemployment as quickly and as thoroughly as one would like, so we've got to be a little cautious in drawing conclusions here. But reading the seasonally adjusted household numbers over the last year or so, one sees something at odds with the trend explanation. In each of the prime working decades of 25- to 34-year-olds, 35- to 44-year-olds, and 45- to 54-year-olds, the numbers of unemployed have been falling, but in each cohort, the number of employed workers has risen by less than the amount by which the unemployed have fallen. Indeed, if we look at 35- to 44-year-olds, whose participation rate is historically the highest among any age group, we see that the number of both employed and unemployed has fallen. So there are fewer people in that age cohort employed today than one quarter ago, two quarters ago, and three quarters ago. Significant numbers of this group have obviously left the labor market. Now, on the other hand, contrary to what one might have expected, the number of employed 20- to 24-year-olds has increased during this same period, which is something you

wouldn't predict demographically. The number of employed people over age 55 has also increased, more in line with what labor participation trends might have predicted.

But going back to that central point about the three prime-age working cohorts, if the trend explanation is, for the moment at least, not so convincing, we have to look to some of the other standard explanations, such as exhaustion of UI benefits, to see if those are stronger. That is, prime-age workers may be dropping out in large numbers after having exhausted their UI benefits. Perhaps that's true. I'm sure it is to some degree, but some yet unpublished research by Alan Krueger suggests that something else is also going on here. Based on what I believe was his examination of raw rather than published BLS data, he finds that in the past couple of years, the recently unemployed have been more likely to leave the labor force than the long-term unemployed. Now, this, obviously, is a reversal of traditional trends.

Alan offers several hypotheses as to why, although he cannot demonstrate any of them right now with currently available data. What's important for my purposes is that most of these hypotheses, particularly when combined with recent age-specific labor participation rates, suggest that there may be even more slack in the labor markets than the unemployment numbers would suggest, even when they are read through the lens of labor market participation trends. One of the most significant of his hypotheses is that middle-class people with a working partner have shifted pretty quickly to getting more education or training to improve their skills. Presumably such people will be back in the labor market at some time in the future.

All of this raises more questions than it answers, but when seen in combination with the still very low level of quits and other factors, including the relative stagnation of unit labor costs, I think it pushes toward there being a greater output gap and a lower medium-term NAIRU than the usual employment statistics would suggest. While I continue to think that the unemployment

rate may tick up again later this year as people are lured back into the labor market by some increases in job creation, Krueger's research implies that this may not be the case. But even if the unemployment rate continues to decline, his analysis suggests that there will still be more real slack in labor markets.

So let me conclude not with strong assertions about labor markets, but instead, again, to suggest that for all of us over the course of the next few meetings, it's going to be critical to try to identify specific kinds of data and specific kinds of activity in parts of the labor market that, in a concrete fashion, would reflect some impact of changing inflation expectations or tighter labor markets. And I think that's the only way, probably, we're going to be able to develop a consensus on what's going on, as opposed to reverting somewhat less helpfully to our priors as to what the models look like untethered from data. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. I want to just address one issue the Governor raised— and I admire the way you spent Easter weekend. I think if you look at the transcripts thoroughly, what you'll see is that what we were hearing from business reporters, to which I am a devotee, was a significant buildup in price pressures leading up to August 2008, and they were right. They did not anticipate the collapse in demand that occurred as a result of the financial crisis, and that's when you began to see a reversal in expectations. I think we have to be very careful to dismiss microeconomic decisionmakers. They should supplement and complement the data. Data are history. What we're trying to get a sense of is things at the margin. I always preface my comments by saying "for what it is worth," and for what it is worth, I think it is valuable to listen to those who actually allocate resources, decide who to hire, and price products.

MR. TARULLO. I anticipated that [laughter], which is why I went back to 2005, because we didn't have a financial crisis following 2005, and there were many of the same kinds of expectations. And I guess, Richard, what I'd say is that the 2008 transcripts are probably more a lesson in the need to look at what else is going on. I have to say, I was taken by the relative downplaying of financial risks and the relative playing up of inflationary risks in the middle part of 2008.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I think these observations about the labor market are spot on. I will say, I've spent some time looking at these data too, and I think it's very confusing. One thing I would point to—and I think I mentioned this last time—is looking at these broader measures of unemployment and thinking about the marginally attached, et cetera, I would have thought that if we were seeing a group of people leaving the labor force who were about to pop back in, you would have seen more of an increase in the group of marginally attached workers than we've seen.

MR. TARULLO. I would think that there should be something to that as well, Narayana. And it is frustrating to use the published BLS data because they simply aren't as granular as would be useful to us. But that's why one of Alan's hypotheses is particularly interesting, which is that people are going into training or, in some cases, going into child care for their own kids for some specified period of time.

MS. YELLEN. I just wanted to ask the staff—isn't it the case that the broader measures of unemployment have declined less than the official measure?

MR. WASCHER. Right. From that standpoint, people who want a job but have dropped out of the labor force and still indicate that they want a job might have accounted for 0.2 percentage point of the decline in the unemployment rate over the past year.

MR. KOCHERLAKOTA. Certainly I accept that amount would be about right, yes.

CHAIRMAN BERNANKE. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. The moderate pace of the recovery is continuing. The economy continues to face a number of headwinds limiting its ability to grow faster. These headwinds include higher gasoline prices, reduced government spending at both the state and national levels, and a housing market characterized by low equity values, supply overhang, and deteriorating quality.

Historically, my projections have been more pessimistic than the staff's because of my continued concern regarding the housing market, low state and local spending, and the slow resumption of consumer demand. Wanting to offset this pessimism with the seemingly good news that the unemployment rate was looking lower—and not daring to wade into the debate over modern finance models between President Evans and President Lacker, nor having really the extensive list of interlocutors known to President Fisher, and, finally, seeing no short-term end to the fact that I will always be last in the economic go-round [laughter]—I had no choice but to hit the road last week in search of some observable data and traveled to an unemployment center.

The one I visited is known for its cutting-edge approach in providing training, job prospects, credit counseling, foreclosure counseling, and other enhancements to people moving in between jobs. I claim no academic precision to the sampling here, nor do I claim anything about the temporal dimension to these observations. I went to the unemployment center with no

preconceived notion except data from the latest household survey showing that the number of people involuntarily working part time had increased by 90,000 in March to 8.4 million. The household survey also indicated that the nation's 13½ million unemployed people have been out of work, on average, for at least 39 weeks. With all of this labor available, one question I had is whether the recent increased inflation could lead to a wage–price spiral of the kind that typically ignites the runaway levels experienced in 1979 when inflation was 13.32 percent. Another question I had is whether improvement in the unemployment rate alone should cause us to claim “mission accomplished.”

What I observed at the unemployment center—actually, it was more positively called an employment center—is a pipeline that carries the newly unemployed between jobs. The existence of jobs at the end of the pipeline is what motivates people to even enter the pipeline and participate in services provided throughout the process, such as resume writing, computer literacy, one-on-one counseling, and foreclosure prevention. The quality of the jobs at the end of the pipeline was not particularly exciting. The day before I was there, the city's stadium had been rented by Monster.com to accommodate job seekers and employers. The job seekers showed up in droves, but the bulk of vacant jobs represented by the few employers that participated looked mostly like multilevel marketing jobs that paid commission only and were based on the number of friends you signed up.

Not all job seekers were uneducated. Most recent additions of job seekers to this particular employment center were college and graduate-school educated. On the day of my visit, they were pharmaceutical company employees, and they were clogging the pipeline, in the view of the less educated, because the more educated were settling for jobs that were lower paying and of a kind that the less educated were vying for. Once the less educated saw that they

were losing out, they left the pipeline, thereby abandoning the retraining programs that could have been of some benefit and increasing the time these people remain jobless and with insufficient income.

Another group of employees clogging exit from the pipeline were the so-called surviving employees. These employees have jobs but are so demoralized and exhausted by being the sole survivors holding onto their jobs and picking up the slack of the laid-off employees that they, too, are looking for jobs. Once they add to the competition for a vacant job, they bump away the unemployed in the pipeline who believe themselves to be increasingly stigmatized by the length of time they've been without work. So the existence and attractiveness of jobs at the end of the pipeline determined whether people even entered the pipeline to begin with.

For the recently unemployed, the challenge of this employment center was to tighten the link between the employer doing the layoff and the about-to-be-laid-off employee so as to get the employee into the employment center before being laid off. This way the employee would stay engaged in a job search. Of course, despite enhancements like resume writing, one-on-one counseling, and computer literacy training, the only real enhancement seems to be a high probability of their being a job.

I'll stop there but sum it up by saying that this picture, were it to be duplicated somewhat consistently across the country, is not a picture of robust job creation, nor one that seems susceptible to setting off a dangerous wage–price spiral, nor one that shows bargaining and negotiation over wages to be anything but concessionary. It's a long way of saying that labor markets will be strong when the economy can absorb the people who want to reenter the job market. Thank you.

CHAIRMAN BERNANKE. Thank you, and we compliment you on your original research.

I would do a better job of summarizing this conversation if I had overnight to do it. If your patience will last just a minute more, I'll give my own views on the outlook, and tomorrow we'll start with a summary, and then we'll turn to the policy go-round.

I have not a great deal original to say about the real side. I agree that the weakness of the first quarter is mostly due to temporary factors, much of which should come back. And like the rest of you, I think a moderate recovery is going to continue as those factors reverse and as the labor market continues to improve and generate income. We've seen some stabilization in the saving rate, which suggests that as labor income grows along about a 3 percent path, consumption should also grow. Note has been taken of the industrial sector, which is doing quite well and is relying to some extent on very strong export demand from emerging markets. As I've said many times before, notwithstanding the positive direction, we are still in a very deep hole. For example, total hours of work, which is a good summary of labor input given all the different margins on which labor can be varied, is still about 6 percent below pre-recession levels, not even taking into account any trend increases in labor supply. Paradoxically though, I think that actually increases to some extent the projection of near-term economic growth because there is a little bit of a bounceback effect that you would expect to see after a deep recession.

That said, I marked down my outlook for the rest of this year and next year by a few tenths. We've talked a lot about oil and commodity prices. Of course, they're a drag on growth as well as a source of inflation. I think there's also a lot of uncertainty and lack of confidence, at least on the household side now. There were some striking polls to the effect that notwithstanding the improvements in the economy, households are very demoralized about the

near-term economic future. Housing and commercial construction are very weak. Like a number of people, I'm a bit worried about fiscal drag. Next year we will see, for example, the end of the payroll tax cut, the end of investment expensing, the end of the grants to states and localities, the end of the extended unemployment insurance, as well as ongoing phase-out of fiscal stimulus. And so that's a pretty powerful drag, and it's going to take some momentum to overcome that. And in general, I think the momentum seems just a bit weaker, even if the first quarter overstates the weakness, than it was at the last meeting.

So to summarize, I still expect, broadly speaking, continued recovery at a moderate pace. I marked down my projections just a little bit.

There was a lot of discussion today of inflation and of easy monetary policy. And while I agree with many of the points that were made and I understand the concerns, I'd like to make just a couple of somewhat countervailing points.

It's true, of course, that headline inflation has increased. As Governor Yellen noted, quote, "underlying inflation"—and I'll come back to that—is still quite low. The staff estimate of the 12-month change in core PCE for this month is still about 0.9; market-based core is 0.9. The Dallas trimmed mean PCE is 1.0, and the core CPI is 1.2.

Now, President Bullard noted concerns with core, and I agree absolutely that what we're interested in is headline inflation. But I think if you look into the price index a bit, you'll see that a remarkably large amount of the recent inflation we've seen actually is attributable to an increase in essentially one commodity, which is oil. Moreover, there seems to be a good chance that the increase will be temporary. So, for example, since our January meeting oil prices are up \$27, which is about 30 percent. Other commodities have risen, but much less. For example, copper is up 3 percent during that period, wheat is up about 3 percent, corn is up about 15

percent, but sugar has declined fairly significantly. Oil really stands out as being the commodity that has increased very significantly. And oil by itself is actually a big source of the pickup in headline inflation. For example, if you look at PCE inflation and don't take out energy or food, rather just take out gasoline and fuel oil, then three-month PCE inflation drops from 4.56 to 2.39, and the six-month change drops from 3.33 to 1.45. So that one very narrow product category is a big part of the pickup that we've seen recently.

I think there's a case, as we explain to our students, that this is a relative price increase. We know some very explicit reasons why oil prices have gone up, why demand has increased and supply has fallen. Of course, the dollar has also fallen, and there are a number of factors involved. I think arguably that the relative price effects that we don't have much control over are certainly part of that phenomenon, and we know how to address that.

I mention that this is seen as temporary. We all have concerns about futures markets and so on, but it is striking that as oil prices have risen \$27 since January, the far future oil prices have risen \$7.50. There really is a pretty strong presumption in the markets that this oil price level will be reversed, and you can see the reason, which is that the problems in the Middle East and North Africa presumably at some point will be reversed. So I just raise that point. It doesn't invalidate the concerns about pass-through or about inflation expectations, any of those things. But I think at least the initial shock here is not really entirely monetary. I think there are some real factors going on.

The other theme I heard around the table was about how incredibly easy monetary policy is, and of course, it is easy, but when judging the stance of monetary policy, everything should be conditional on the state of the economy. The question we want to ask is, "Is the monetary policy appropriate for the economy?" and not "Is it easy or tight in some absolute sense?" In this

respect, I was very pleased to see President Kocherlakota's analysis using Taylor rules, which gives you a way of thinking about whether interest rates are about where they should be or not. Now, when I worked with his memo, as I will explain, initially I ended up disagreeing with it, but then I did some more work and I ended up agreeing with it. So let me just tell you my thought process, but I think it's also instructive for thinking about the state of policy and thinking about where we likely should go over the next year or two.

The underlying assumption in Narayana's memo is that he uses a Taylor (1999) rule, which has a 1.0 coefficient on the output gap. In order to create a baseline, he assumes that in the fourth quarter of last year we were more or less at the right place as far as accommodation is concerned. I asked the staff to give me their view, based on their assessments of the output gap, et cetera, and their calculations showed that based on the same Taylor rule and despite the fact that we were near zero, of course, monetary policy in the fourth quarter of 2010 was still 200 basis points tighter than the Taylor (1999) rule would suggest.

Regarding that gap—and I'm sure Narayana would fully understand it—50 basis points of it came from what I'll call the LSAP adjustment. In particular, Narayana assumed 250 basis points of ease coming from our securities purchases. The staff, particularly Dave Reifschneider, who was responsible for all of these estimates, suggests that the number in 2010:Q4 was closer to 200 basis points, a 50 basis point difference. Obviously that's false precision, but the 200 basis point number was based on more detail about the expected exit strategy in terms of redemptions and sales. So that's 50 basis points. The rest of it comes from differences in output gap estimates; as Narayana pointed out, a lower output gap obviously gives you a higher desired interest rate.

Rather than try to adjudicate that difference, I just went ahead and, taking the projections that we now have, I tried to ask: What does Taylor (1999) tell us about where policy should be? In order to look forward instead of backward, I looked at the fourth quarter of this year, 2011, and the fourth quarter of next year, 2012, and that gives you some sense of what the model is saying in terms of our likely trajectory.

First of all, I had to figure out the output gap. My first stab was to take the middle of the central tendency of our projections for the fourth quarter of this year, which was 8.55, and to subtract from that the middle of our long-run NAIRU estimates, which is 5.4. That gave me 3.15 as the unemployment gap. I multiplied that by 2 to get 6.3 percent as the output gap. Thinking about it now, if you use that, of course, you get very easy policy recommendations and using that kind of approach suggests that we should still have zero interest rates at the end of 2012. In thinking about that, I recognize that an objection to that would be that we should probably be using a higher unemployment rate and higher NAIRU reflecting unemployment insurance and some temporary factors and so on. So I replaced the 5.4 percent with 6 percent, which is the staff's current temporary level of the NAIRU. That gives me an output gap of 5.1 percent in the fourth quarter of this year, which is essentially the same as where the staff is. They estimate 5.0 percent. So that's a simple estimate of the gap.

With respect to inflation, I stayed away from core, and what I said was: Let's look at the forecast for the following year. What is the forecast for 2012? The middle of the central tendency of the total PCE inflation forecast for this Committee was 1.6 for 2012. That's higher than the core inflation estimates either by the Committee or by the staff, so I used that. It's a more conservative number. And I used a goal of 2 for the inflation target.

An important observation here—and this came up in my earlier exchange with President Plosser—is that what I call the LSAP adjustment, which is the additional easing being created by our securities purchases, is going to be waning over time under the baseline Tealbook assumption that we begin redeeming securities at the end of 2011 and then have slow sales later on. You have to take that into account, and in particular, when you do that, the LSAP effect for the fourth quarter of this year is down from 200 to 120 basis points.

Put that all together, Taylor (1999) suggests that the correct level of the funds rate, inclusive of all securities purchases, for the fourth quarter of this year is minus 50 basis points. If you do the same analysis for the fourth quarter of 2012, the LSAP correction becomes 70 basis points. Again, using 6 percent as the NAIRU, what you get for the end of next year is plus 55 basis points.

What this particular guideline—which is, I think, a fairly reasonable framework for thinking about policy—tells us is qualitatively pretty similar to what Narayana found, which is that somewhere early in 2012 we should probably be raising interest rates above zero according to this particular calculation. I'll come back to weaknesses in just a second. I think it's striking that this is actually very close to what the markets are currently expecting; the markets now expect basically a 37 basis point funds rate in May and a 90 basis point funds rate in November—pretty close to what I found. So our policy is easy, but at least by one metric, it isn't inappropriate, given the state of our economy.

Now, having said all that, I really do not feel sympathetic to John Taylor's recent view that we should, more or less, just follow the rule and ignore all other considerations. I think that's probably not the right way to make monetary policy, and so let me just mention a few issues. One is that, of course, you might ask, well, why Taylor (1999). Why not Taylor (1993),

which has a somewhat smaller coefficient on the output gap? I think it's important to note that both of those rules do give you the same long-run results: They both give you 2 percent inflation in the long term; they both give you U equals U^* in the long term. The difference is where you are in the Taylor curve. And essentially, what that says is that, if you use Taylor (1999), you are willing to accept a little more volatility in inflation over time in order to smooth out the business cycle just a bit. It's not an issue of allowing a higher inflation target.

The question then might be: What has the Fed actually done? If you look at rolling regressions that try to estimate the Taylor rule for the Fed, the current estimates of the long-run coefficients are 0.94 for the output gap and 1.73 for inflation, which is almost exactly the 1999 Taylor rule, and you get the same results if you use the data before 2001; it's not just a product of the 2001–03 period. One other observation is that this does assume a pretty strong effect for LSAPs. So if you actually don't think LSAPs were very effective, then you need to be a lot more dovish than you are now, because you're taking away a couple hundred basis points of effective ease.

Of course, one of the reasons that you wouldn't want to use a Taylor rule without some additional insight is that, of course, it's way too simple, and I have a long list of objections here. Let me just mention one that this Committee is very concerned about. Taylor rules have nothing in them, as we mentioned today, related to inflation expectations and they have nothing in them related to asset price bubbles. When you see things like that, you to want to be a little bit more restrictive.

Again, I think we have to watch out for those things. I think we do have to look at what's going on in the economy and use our judgment, but I just want to push back a little bit on the view that monetary policy is radically easy and that we need to waste no time moving—you

know, by 8 o'clock tonight, we should basically have the funds rate up to 100 basis points. It's true that monetary policy is easy in an absolute sense, but relative to where the economy is, a standard analysis suggests that we are not particularly inappropriate and that, indeed, easy policy would be justified for some time to come.

Again, let me just end by saying two things. One is that I don't believe in simple rules as superseding thought, and I think we do have to consider issues like the ones that President Hoenig has raised, for example. And the other is, again, to thank Narayana for bringing this into the conversation. We will be making a lot more progress if we think quantitatively about when we should move, what conditions should cause us to move, and how easy or tight monetary policy ought to be.

Okay. Thank you very much. I understand that a reception is just now beginning for ex-Governor Warsh, followed by dinner. If you have any changes in your projections, please provide them as soon as possible. We will be reconvening at 8:30 tomorrow morning. Thank you.

[Meeting recessed]

April 27 Session

CHAIRMAN BERNANKE. Good morning, everybody. I'm going to start the meeting today by completing the go-round from yesterday. I'll give you my quick summary of the discussion on the economy.

As a diversion while we're doing that, we're going to have some photos taken. We've learned that photos not taken during the meeting have much jollification going on.

MR. LACKER. So we should act naturally.

CHAIRMAN BERNANKE. Well, act your usual spiteful selves. [Laughter] Okay. So again, thank you for the useful go-round yesterday.

Participants generally see the continuation of a moderate recovery, strengthening somewhat over time, notwithstanding a surprisingly weak first quarter and some ongoing headwinds. Businesses remain relatively optimistic, although they remain concerned about the effects of higher commodity prices both in their own costs and on the buying power of consumers. The labor market is somewhat stronger, with payrolls and vacancies up and unemployment down. State and local fiscal contraction and possibly future federal fiscal consolidation are shaping up to be a possible drag on growth. The debt limit also poses some financial risk. International factors are affecting the U.S. economy, including disruptions in the Middle East and North Africa, which, together with a lack of compensating production by Saudi Arabia, are affecting oil prices; the impact of the Japanese disaster on supply chains; and higher inflation and wage costs in emerging markets. Europe is still grappling with sovereign debt problems. Oil prices are a particularly important downside risk for growth, although the level of oil prices does not yet qualify as a Hamilton shock. On net, the risks to economic growth seem roughly balanced. On the inflation front, increases in food and especially energy prices have led

to a recent acceleration. In light of uncertainties, both about how commodity prices will behave and the extent of potential pass-through to other prices, inflation risks seem to the upside.

Consumers are in a negative mood—a crisis of confidence?—with higher gas and food prices offsetting the payroll tax cut. However, growth in consumer spending remains moderate, and retailers in some areas are seeing increased sales and traffic. Labor market conditions are mixed. Hiring is weak, though firms may be forced into the labor market as they reach the end of productivity gains. There are upside wage pressures for a few specialized types of workers. On the other hand, there may be significant disguised unemployment, and fieldwork suggests that many of the unemployed see very little prospect for reemployment at a job comparable to the one that they had before. Housing remains generally distressed, with prices flat to down, though sales volume and traffic were reported higher in a few areas.

For the most part, as noted, businesses continue to show confidence in the recovery. Investment in equipment and software is up. Many producers are facing powerful cost pressures, some of which they have already, or plan to, pass on to consumers. They have little fat in their operations, so that passing through cost increases is the only way to protect margins. Among key sectors, manufacturing, energy, agriculture, transportation and logistics, and tourism were reported strong. Manufacturers in particular are upbeat, except that some auto producers are having difficulty obtaining parts normally produced in Japan.

Financial conditions have improved a bit further. Earnings are strong, and equities are doing well. Banks are seeing better credit quality but are concerned about top-line revenues. Loans to small businesses are up, and there is substantial competition among banks to make C&I loans. Risks to financial stability exist, including greater leverage and risk-taking in areas such as leveraged loans and land acquisition. Excess liquidity may be a source of this problem.

As noted, inflation has risen very significantly in recent months primarily because of energy prices and, to a lesser extent, to other commodity prices. Underlying inflation measures remain low, however. The degree of pass-through into underlying inflation measures for commodity costs will be an important variable to watch, as many firms report that they believe at least some of their cost increases can be passed on. For example, prices-received indexes are up. Some participants supported—and presented econometric evidence for—the view that ongoing slack in labor markets has restrained wages and unit labor costs, limiting second-round effects and likely causing the inflation bulge to be temporary. Inflation expectations by some measures are up a bit. Forward inflation breakevens have increased somewhat to levels near the top of recent ranges by some measures, although the Cleveland expectations measure remains below 2 percent. Public attention to inflation has increased, which may give firms “cover” to pass on costs. The lack of theory on how monetary policy should respond to inflation expectations is an important gap. The increase in inflation will in the end be transitory if commodity prices stabilize and pass-through is limited. However, close monitoring of inflation and inflation expectations is essential to prevent any more lasting pickup in the rate of price increases.

So that’s my summary. Any comments? [No response] Seeing no comments, before we go on to the policy round, David Wilcox, I believe you have some data to report.

MR. WILCOX. Yes. The advanced report on durables was received this morning. We obviously haven’t had a chance to look at it carefully, but we were looking for a strong report. At first blush, it looks like we got one, and our preliminary take is that it should leave our projection about unchanged for the first quarter.

CHAIRMAN BERNANKE. Thank you. Any questions? [No response] All right. Then we’re ready to go to our monetary policy go-round, and I’ll call on Bill English to start us off.

MR. ENGLISH.⁵ Thank you, Mr. Chairman. I will be referring to the package labeled “Material for FOMC Briefing on Monetary Policy Alternatives” that was distributed earlier. The package includes the three draft statements, including the changes that we distributed on Monday, along with associated draft directives.

Turning first to alternative B on page 3, notwithstanding the softer-than-expected tone of the indicators for the first quarter, Committee members may see the outlook for real activity and inflation going forward as about in line with their expectations at the time of the March meeting, and so believe that no change in the near-term course for monetary policy is called for. Policymakers may anticipate that higher energy and other commodity prices will boost headline inflation only temporarily because they see commodity prices leveling out and longer-term inflation expectations remaining stable. Moreover, because higher commodity prices reduce real incomes and damp consumer spending, policymakers may feel that the monetary policy implications of the resulting higher inflation are countered by weaker output and employment, suggesting that no adjustment to the trajectory for policy is necessary.

More broadly, policymakers may see unemployment as too high and likely to remain so for some time, as suggested by your SEP submissions. And, as discussed yesterday, a number of potential measures of underlying inflation have moved up from their lows, but remain around 1 percent. Indeed, most of you project PCE inflation in 2012 to be below your estimate of its mandate-consistent level in the longer run, and only three of you see it coming in higher. You may also judge that longer-term inflation expectations are not that different, on balance, than at the time of the March meeting. The Michigan survey median 5-to-10-year inflation expectations measure reversed its March rise and is in the middle of its range over the past several years. The Board staff’s forward measure of inflation compensation from nominal and indexed Treasury yields has fallen back in recent days and is now up less than 10 basis points, on net, since March and remains within the range seen since the crisis. Against this backdrop, you may believe it is appropriate to complete the current asset purchase program at the end of June and wait for additional information on output, inflation, and inflation expectations before deciding on your next step.

As for the statement language, the first paragraph would be updated to suggest somewhat less confidence in the strength of the recovery and would acknowledge that overall inflation has picked up in recent months. Depending on your assessment of the market- and survey-based measures of inflation expectations, you might want to soften a bit the statement that “longer-term measures of inflation expectations have remained stable” by adding the word “generally” that is shown in brackets. With Monday’s changes, paragraph 2 has been updated to clarify that higher commodity prices have increased headline inflation, but the Committee continues to anticipate that inflation will fall back to mandate-consistent levels over time. Finally, in paragraph 3, the statement would indicate that the Committee “will complete” the \$600 billion of intended purchases announced in November. It would go on to note

⁵ The materials used by Mr. English are appended to this transcript (appendix 5).

that “the Committee will regularly review the size and composition of its securities holdings in light of incoming information and is prepared to adjust those holdings as needed to best foster maximum employment and price stability.”

A statement along the lines of alternative B would be about in line with market expectations and would probably have little effect on asset prices. However, if the reference to longer-term inflation expectations being only “generally” stable were included, market participants would likely expect a somewhat more rapid shift to removing policy accommodation, particularly since the conditioning assumptions in the “extended period” language in paragraph 4 include “stable inflation expectations.” The result would likely be some upward pressure on interest rates and perhaps the foreign exchange value of the dollar, and a modest decline in stock prices.

Alternative C, page 4, might be appropriate if the Committee were more concerned that the recent rise in inflation may not prove transitory, believed that the economy was on a solid growth trajectory, and perhaps also saw output as closer to potential than the staff projects. The intended size of the asset purchase program would be cut to \$450 billion and the statement language adjusted to signal that redemptions and an increase in the federal funds rate target could come sooner than markets currently anticipate. You may be worried that the higher prices for oil and other commodities could, in a context of accommodative monetary policy and large federal deficits, lead to an increase in longer-term inflation expectations that would be very costly to reverse later on. If so, you might judge that bringing the purchase program to a rapid close and signaling that you intend to move toward exit relatively expeditiously could lead to improved medium-term macroeconomic outcomes. Some of you may also find a reduction in policy accommodation attractive because of concerns about signs of potential asset price misalignments or increased leverage in some parts of the financial system that could contribute to financial instability.

The statement under alternative C would provide a somewhat more upbeat assessment of current conditions and the outlook than that under alternative B, noting that the recovery “is on a firm footing” and that conditions in the labor market “are improving.” The inflation discussion in paragraph 1 is the same as in alternative B, but paragraph 2 puts greater emphasis on the importance of the stability of longer-term inflation expectations in ensuring that the recent rise in overall inflation is temporary. Paragraph 3 scales back the size of the asset purchase program, and the statement would also indicate that reinvestments of principal would continue only “for now” and that the Committee anticipates “exceptionally low levels” of the federal funds rate for “some time,” rather than for an “extended period.”

Alternative C would surprise market participants and would likely lead to an increase in longer-term interest rates, lower stock prices, and a rise in the foreign exchange value of the dollar.

Alternative A, page 2, might be seen as appropriate if policymakers see the weaker pace of the recovery of late as likely to persist, or if they see greater downside risks to the outlook for economic growth, arising, for example, from the possible

effects of higher energy and other commodity prices on household spending. In this environment, members may think that a move toward easier policy is more likely than one toward tighter policy over coming months, and that emphasizing that the door is open to additional policy accommodation could reassure households and businesses and so support the recovery, even if no policy change were ultimately required.

The statement for alternative A would note that the recovery is proceeding at a moderate pace, but more slowly than had been anticipated at the time of the March meeting. It would also note that higher energy costs may be weighing on household spending. Paragraphs 1 and 2 would suggest somewhat less concern about inflation expectations and the inflation outlook than in alternative B. Paragraph 2 would also note increasing downside risks to the outlook for economic growth. Paragraph 3 would confirm that the Committee “will complete” its purchases of \$600 billion of longer-term Treasury securities and that it is “prepared to expand and extend the purchase program” if needed to achieve its objectives. The fourth paragraph would provide more-explicit forward guidance about the expected path for the federal funds rate by specifying that exceptionally low levels were likely “at least through mid-2012.”

Market participants would be surprised by the adoption of alternative A. Interest rates and the foreign exchange value of the dollar would likely fall, and stock prices would probably increase.

Draft directives for the three alternatives are presented on pages 6 through 8 of your handout. Thank you, Mr. Chairman. That completes my prepared remarks.

CHAIRMAN BERNANKE. Thank you very much. Are there questions for Bill?

President Evans.

MR. EVANS. Maybe I shouldn't have been surprised. Maybe I should have studied this a little more carefully, but in alternative B, there's new language relative to what was put in the Tealbook; in paragraph 2: “Other commodities have pushed up inflation in recent months.” I noticed in your analysis you referred to it as headline inflation. It seems like a noticeable change in our assessment.

MR. LACKER. Which part? Paragraph 2?

MR. EVANS. Paragraph 2. We say, “measures of underlying inflation continue to be somewhat low” and then we say that increases in energy prices have pushed up inflation in recent months. Then we're going to say “and a decline in inflation to rates consistent with” our

mandate. So we're now talking about inflation being too high relative to our mandate, whereas we've had an extended discussion about inflation being low relative to our mandate. It seems it needs some modifier like "headline inflation" or "near-term inflation" or something.

MR. LACKER. Wouldn't "inflation" without a modifier be presumed to refer to headline, and a modifier be presumed to be required to refer to something else, like core or underlying or forecast?

MR. EVANS. Inflation is a general rise in all prices, and we're pointing to a relative price increase as moving inflation. So I think it's a very subtle point.

CHAIRMAN BERNANKE. I think we're anticipating the discussion. The origin of this change was actually President Lacker's memo, which was circulated. And yes, again, "inflation" is intended here as headline inflation, as distinguished from underlying, and President Lacker's memo made the point that, instead of talking about the general term in the context of price stability, we could talk about the desire to have overall inflation come back down to what we think is the appropriate level. But this is obviously open to discussion in the go-round. So why don't we just do it in that context?

Any other questions for Bill? [No response] All right. If not, President Williams, you're first.

MR. WILLIAMS. Thank you, Mr. Chairman. I favor alternative B. Although we're experiencing a bulge in headline inflation—I guess I used "headline"—underlying inflation remains low, and our forecast is that overall inflation will fall well below desired levels next year, and I expect significant resource utilization gaps to continue for quite some time. Therefore, the current very accommodative stance in monetary policy remains entirely appropriate.

In terms of the wording in the statement, I actually like the changes that were made over the weekend and in the Monday draft. I think it is important to recognize that inflation is above desired levels currently and explain that we expect that to come down. I would also maintain the description of longer-term inflation expectations as “stable” rather than “generally stable.” I think this is an important point, as Bill mentioned. Both survey and market-based measures are within the ranges that have prevailed over the past decade, and I think we should be careful not to change the language on something important like this based on what has proven at times to be volatile data. We see that in the Michigan survey; it popped up, and then it has come back down. We’ve also seen that in the breakeven inflation. So I definitely would keep the word “stable.” Thank you.

CHAIRMAN BERNANKE. Thank you very much. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I believe there are reasonably strong arguments for choosing alternative C from a certain point of view and not providing further stimulus at this time. The recovery seems well established, and price stability often requires preemption, especially at this time of the business cycle. Despite those arguments, though, I can support alternative B. We’ve encountered enough speed bumps in this recovery to make cutting back on stimulus perhaps less urgent right now. In addition, in our discussion of exit strategies, I didn’t hear any convincing reasons to doubt that we could withdraw stimulus at a fairly rapid clip if need be, and I take it as a corollary of doing whatever it takes to provide sufficient stimulus that we stand ready to withdraw stimulus at whatever pace is required to keep inflation well contained as the expansion unfolds.

Regarding language, I did, indeed, make three suggestions regarding paragraph 2(b), two of which were adopted in this draft. The motivation was to provide, similar to President

Kocherlakota's suggestion last time, more connection to real life in our description of inflation. It just seemed to me "currently putting upward pressure on inflation" was more consistent with an overall inflation rate that hadn't risen yet and was threatening to, and yet we'd had so many months of inflation well above what we want that it was worth acknowledging to the public that we understand that inflation is, indeed, too high right now, and why.

And about relative price changes, President Evans, I understand that when oil prices go up much more rapidly than other prices, it's a relative price change, but if it brings the average up, then it's inflation as well, and you can't deny that. I mean, if there aren't offsetting declines in other prices that keep the average constant, one is equally entitled to call it an increase in overall inflation as well.

I also was concerned about this language about underlying inflation. I think it's widely interpreted as a code word for core inflation, and I had two concerns about sentence 2. One of the main ones is that rather than relying on the notion of overall inflation converging to what we think of as underlying inflation over time, why not communicate that we think the rise in inflation is transitory; why not come out and say, "We expect inflation to decline soon"? It struck me as more clear to say it that way. The other thing is that sentence 2 is one of the five places we refer to the mandate in this statement, and we say underlying inflation is low relative to what the Committee judges—I'm not sure we've ever spelled out underlying inflation and made clear that it's our forecast and not core. My concern with sentence 2 is that it's open to misinterpretation that our interpretation of the mandate has to do with core rather than overall inflation. Evidently there were countervailing concerns about sentence 2. I'm anxious to hear what they were.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. I support alternative B. Given the weakness in spending over this quarter, there remains significant uncertainty about the strength of the recovery. Furthermore, by the end of 2013, I expect unemployment to be too high and inflation to be too low, even assuming completion of the Treasury securities purchase program and keeping the federal funds rate at the zero lower bound longer than in the Tealbook.

I continue to see many downside risks to the outlook. Problems in Europe, fiscal austerity measures, tightening in emerging markets, and weakness in the first quarter in consumption, local government spending, and housing could spill over into future quarters. Any one of these factors could exert enough drag on future growth to put my forecast at serious risk.

Given the low inflation rate, we have plenty of room to encourage faster growth in the economy. I hope the economy is strong enough that we can begin removing accommodation by allowing redemptions in the late fall, but that depends on receiving stronger data than we have seen so far this year.

In terms of language, I share President Evans's concern—I actually like the previous language in that sentence better.

CHAIRMAN BERNANKE. Okay. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I support alternative B. I'm not totally happy with paragraph 2 as written. I think it's an attempt to be what the younger folks might call a mash-up between President Lacker's version and the original. At the risk of confusing things still more, let me make a suggestion, which would be to drop the last part that's highlighted in red—the “and a decline in inflation to rates consistent with the Federal Reserve's mandate”—and replace it with “in a context of price stability.”

I think what's confusing about the paragraph right now is, we talk about underlying inflation being low, then inflation goes up to being high, and then we're talking about what we want it to come down to be. I find the paragraph confusing when I read it. I think my suggestion may be more helpful, but maybe others will have ideas about how to address this.

MR. TARULLO. Narayana, you'd keep Jeff's first change and revert to the original language for the second?

MR. KOCHERLAKOTA. That is correct, yes.

MR. LACKER. Mr. Chairman.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. On the seesaw pattern of referring to low inflation and high inflation—my suggestion would have eliminated references to inflation in sentence 2, which would eliminate the up-down.

MR. KOCHERLAKOTA. I remember that.

CHAIRMAN BERNANKE. I don't want to interject, but it may help a little bit to know that in my remarks to the media later today, I'm going to be focusing very much on the projections, including the near-term projections vis-à-vis the longer-term objectives of the Committee, so I think there will be more opportunity to explain this particular configuration than would otherwise be the case. That's a central goal of my presentation. President Hoenig.

MR. KOCHERLAKOTA. I'm sorry, Mr. Chairman.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. As I think about the evolution of future policy, I continue to focus my attention on core inflation. Core inflation was under 1 percent over the course of 2010.

Our estimates in Minneapolis are that the output gap was around minus 4 percent at the end of 2010, and given these conditions, as you highlighted, Mr. Chairman, it's appropriate for monetary policy to be highly accommodative, and it is. The Board of Governors' staff estimates suggest that the LSAPs are generating enough stimulus so as to be roughly equivalent to a fed funds rate of minus 2½ percentage points. I guess there's some range between minus 2 and minus 2½, but I'll stick to the rough equivalence.

Now, some observers have suggested that this level of stimulus should remain in place as long as inflation expectations remain stable, but such an approach is inconsistent with the kind of rules we have in the Tealbook, and they're inconsistent for a good reason. If we waited until inflation expectations move, we'd actually probably have to impose much bigger employment costs on the economy to try to get them back to where we want them to be. So it's, I think, a better policy to adjust our level of accommodation as the economy moves towards the Fed's targets. The staff now forecasts that core PCE inflation will be 1.4 percent in 2011. My own forecast is slightly higher, and these kinds of increases in core PCE inflation would argue for a reduction in accommodation.

At the same time, unemployment will be at least 1 percentage point lower at the end of 2011 than in November 2010. This change, too, argues for a reduction in accommodation—and I think Governor Tarullo made some good points yesterday—assuming, of course, that the natural rate of unemployment did not fall by as much over the same time frame.

Mr. Chairman, I found your comments on my memo to be very helpful yesterday. In particular, I have to say that I had really underappreciated the notion that accommodation is being removed as we move closer to a date when our holdings of longer-term securities return to a more normal level. I think this idea is a very important one and a very intuitive one.

If I'm sitting there as a member of the public thinking the Fed is going to hold onto their long-term securities for 30 years, and six months pass, well, not much accommodation is being removed by that. But if I'm thinking it's going to be more like three years that the Fed is holding onto those securities, when six months pass, then there's a fair amount of accommodation being removed. This really points to the need to have some strong communication about what our expectations are for the date of eventual balance sheet normalization when our holdings in long-term securities return to something consistent with what we think of as being normal.

There's a variety of ways we could do that communication. We could do it during the press conferences. I heard, and I don't want to overstate this, a fair amount of agreement among members of the Committee that we were planning to get back to something like a normal balance sheet over a five- to six-year time frame. But another way to do it would be to add a projection. We offer our projections of longer-run inflation; we could offer a projection of a date that we expect balance sheet normalization to take place. Right now, though, the communication is proceeding in a rather informal way. I think our main communication is President Williams's working paper, and that's probably not the best way for us to communicate these things, with all due respect. [Laughter] But I do continue to anticipate that in the fall the Committee will need to respond to the changes in economic conditions by taking the first steps toward raising the fed funds rate. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. There have been several good suggestions about how we might change the projections, and I'm sure the Subcommittee will be eager to dig into those.

MS. YELLEN. Will do.

CHAIRMAN BERNANKE. Yet another possible suggestion, of course, is to project the funds rate itself.

MR. KOCHERLAKOTA. Oh, that is a good suggestion.

CHAIRMAN BERNANKE. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. I prefer alternative C. Economic growth, as I've said many times, will most likely continue to be moderate, as consumers and businesses and financial institutions balance their increasing spending motives with the need to deleverage, which is in process and has to take place. This process will take time, and maintaining a zero policy rate, I think, invites future imbalances that will undermine longer-term growth, which is our mandate. Inflation is increasing. Energy and food inflation have been especially notable, obviously. The broader inflation measures are moving higher as well. I am concerned that maintaining our highly accommodative policy stance amid a recovering economy, even though modest, and rising underlying inflation puts us behind the curve and risks a repeat of the policy mistakes of the '70s and the 2000s. We are just inviting trouble by staying too low too long.

To rebalance the risks to the outlook, we need to rebalance our monetary policy, and I would start modestly, by taking the "extended period" language out. And I'd also at least consider seriously stopping our investments at the \$450 billion number. Thank you.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Our second round of LSAPs is nearing its scheduled conclusion in June. I was not in favor of this policy when it was implemented in November, but I see little to be gained at this point of ending it early. We are almost done.

As we discussed last time, I thought it important that our April statement signal that LSAPs will end in June, and alternative B, paragraph 3, does that. In general, I do prefer the

language in alternative C, but like President Lacker, I can live with something closer to B. However, I would like the statement to go somewhat further in preparing the public for exit and giving the Committee more flexibility, so that it can act sooner rather than later, if necessary. I think this is a good time to begin changing the language. Because the Chairman is having a press briefing after this meeting and the next meeting, it gives us opportunities to make more-extensive language changes in the statement than we might feel comfortable doing otherwise. The Chairman will be able to explain what we mean by our changes rather than letting the public divine what we meant.

First, I think we should take the opportunity when the LSAPs end in June to also stop reinvestments of MBS. We should signal this in the statement by saying the Committee will complete \$600 billion of longer-term Treasury purchases by the end of the quarter, and at that time intends to end the policy of reinvesting principal payments from securities. The market has reacted quite benignly to the Treasury sales of MBS. I don't anticipate such an adverse reaction to our announcement that investments will end, and it will help prepare the public for our eventual exit. I think paragraph 4 is becoming more problematic, given the inflation and inflation expectation numbers. Are inflation trends really subdued? Are inflation expectations really stable? I think we should consider adjusting the language, if not today, then in June. Is "extended period" consistent with potentially raising the funds rate, as President Kocherlakota suggested, by year-end?

Even the Tealbook puts a nonnegligible chance of raising rates this year, although the point forecast suggests a longer period before liftoff. We don't want to mislead the public, but paragraph 4, I'm afraid, might do that. Instead, I think we could say, "The Committee will maintain the target rate of the federal funds rate from 0 to ¼ percent today, and based on its

outlook for the economy and inflation, anticipates that it will remain low for some time to come.” This works, because paragraph 2 discusses our outlook for inflation—the fact that we expect the effects of higher energy and commodity prices to have transitory effects on general inflation. And paragraph 1 explains that labor market conditions are improving. Because we are releasing new forecasts at the press briefing, changing the language to refer to projections seems sensible.

I would also note that among the various policy rules in the Tealbook, the so-called growth rate or first-difference rules suggest that the funds rate should be about 50 basis points this quarter and 90 basis points by the third quarter. Of course, different rules give different guidance, and I have argued before why I like something more like the first-difference rule, in part because of measurement problems, but I won’t repeat those arguments today.

A couple of wording choices we talked about last time could be implemented today and explained during the press conference. I would like us to consider changing paragraph 2 so that it refers to—and I raised this point last time—“employment” or “unemployment” rather than the “unemployment rate.” Our mandate is in terms of maximum employment, not the unemployment rate. Labor force participation rates are a variable we have even less control over than we do employment. By emphasizing the unemployment rate, we risk giving the idea that we won’t begin exiting until the unemployment rate is back down to the natural rate. But this is misleading. I believe we will need to act before the unemployment rate gets back down to a normal level.

I think alternative C’s characterization of where the economy is relative to our dual mandate—namely, that employment and inflation have moved somewhat closer to the levels that the Committee judges is mandate consistent—rings truer than paragraph 2 in alternative B,

which seems to brush aside the recent increases in inflation and inflation forecasts. That is why I generally prefer alternative C.

We also should consider clarifying what we mean by underlying inflation. As President Lacker was suggesting, we had this conversation last time as well. I think we have some concept of inflation over the medium run, not just core inflation in mind. So why don't we say that, rather than referring to underlying inflation?

I'm also worried that claiming expectations remain stable may not be entirely credible. Indeed, some have argued that, in fact, expectations of inflation have risen, reflecting the abating concerns about deflation. Five-year, five-year TIPS have risen considerably since last fall, and so to say that inflation expectations are stable may be a little bit awkward. In fact, if we recall, we wanted to get them up somewhat since last fall.

So I would suggest that the last sentence of paragraph 1 reads something like as follows: "Inflation has picked up in recent months, but longer-term inflation expectations remain within historical norms, and indicators of inflation over the medium term are subdued." I think that language would fit well with the Chairman's emphasis on our forecast in his press conference, and he could get away from using underlying inflation.

MR. TARULLO. Can you read that again, Charlie?

MR. PLOSSER. "Inflation has picked up in recent months, but longer-term inflation expectations remain within historical norms, and indicators of inflation over the medium run are subdued."

MR. TARULLO. Thanks.

MR. PLOSSER. I think communication and transparency are very important policy tools at this point. This will be especially true as we choreograph our exit of this period of

accommodation. The changes in language that I am suggesting are some of those I believe that we might need to implement in the next couple of meetings to prepare the public for the start of an eventual exit. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. And that indicators of what remain subdued, at the end? Sorry.

MR. PLOSSER. “Indicators of inflation over the medium run remain subdued.” As opposed to “underlying inflation,” and that would play into the forecast language.

MR. LACKER. Which medium run, past or the future—going which way?

MR. PLOSSER. I’m thinking future. Or you could say, “forecast of inflation over the medium run.” That’s why this language “underlying inflation” is confusing, because it’s interpreted as core. What you are really talking about is your predictions of where inflation is going.

CHAIRMAN BERNANKE. That’s fair. We have a lot of work to do, I think. Your particular suggestion is very interesting, but it would also require work in the second paragraph, too.

MR. PLOSSER. Yes, because “underlying” shows up there as well.

CHAIRMAN BERNANKE. Right. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. The Committee decision on asset purchases obviously was made at the November meeting. We said that that decision is subject to review, depending on developments in the economy. Today, the economic outlook is generally better than what was expected at the time of the November decision. In addition, the inflation outlook is somewhat less benign than it was at the time of the November decision. First-quarter GDP will probably come in weaker than what was expected earlier this year, but, as the

economic go-round yesterday indicated, many believe that the outlook for the remainder of 2011 remains relatively robust. Also, many comments suggested that the Q1 GDP weakness seems inconsistent with other measures of the strength of the economy. So, the November decision was considered reviewable. We've got a stronger economy than we had thought at the time, and we've got a little bit higher inflation and inflation expectations than we thought at the time. This suggests to me making a small move to adjust the policy, and in this respect I would agree with some of the comments made by President Kocherlakota.

Now, I know that there are objections around the table to making small moves, and so I'm going to disabuse you of those objections. [Laughter] Many of the comments yesterday all around the table suggest that we set a high bar for this type of policy action—a high bar. I want to argue that this is the wrong intuition for Committee behavior. It is bureaucratically convenient but unlikely to be optimal policy.

The high-bar argument suggests not taking action unless it is absolutely called for. So there is a bias toward inaction. This is known in engineering and elsewhere as an Ss policy. You only act when certain limits are met on the high side or the low side. If you behave this way, this will create a range of inaction; you'll take no action in the middle, and you will take one action if you go above the high limit and one action if you go below the low limit. If the limits are extreme, which they might be for a Committee like this, the range of inaction is actually quite large. The example would be driving a car and steering and trying to stay in your lane. When we're driving our car, we are making small adjustments all the time as we are steering, but if you had an Ss policy, you might say, "I am only going to adjust the steering when the car actually goes to the very edge of the lane, and then I will make the adjustment to come back to the center." You have a range of inaction. You don't adjust the steering wheel at all

until you actually hit the limit, then you come back to the middle. If you drove like that, you would have a more volatile path down the highway than you do when you are making small adjustments all the time. In the car example, the cost to action is very small, so you might as well make adjustments all the time. This keeps you in the middle of the lane, and you throw out the Ss policy. It wouldn't be the right thing to do. The Ss policy is not optimal unless there are some significant fixed costs to action. But for a Committee like this, I think there are no real costs of this type. We can make small adjustments if we want. Creating this range of inaction through a de facto Ss policy is less than optimal for this Committee. I also think this creates confusion in markets, because in many circumstances where the economy has changed we don't actually do anything in the range of inaction. This just leaves a big question mark out there in the private sector. They're saying, "Well, what are these guys doing? They're not doing anything." The private sector doesn't get any signal when we are sitting in the range of inaction. And you might say, "Well, we are always talking." I don't think talking matters. What they care about is whether or not we taking concrete action. The communication can only help explain the actions that you actually take or plan to take. It can't be a substitute for actually making the decision to take concrete action.

So with that, I am going to support option B with the caveat of completing \$500 billion of asset purchases instead of the \$600 billion. I think that the situation that we are in is that the FOMC apparently intends to go on hold at the end of June. Going on hold to me would mean that we keep the near-zero policy rate, we keep the "extended period" language, we keep the size of the balance sheet held constant, and we create a bit of a presumption, because we're going on pause, that the next policy move would be to remove accommodation without really committing to that and waiting for more information to come in. And all of that seems entirely sensible to

me. But I think finishing our asset purchases just a bit short of where we said in November would still be planning to go on hold in June in the same way I just described, but with a slightly smaller balance sheet. This would help send a signal to markets that we are paying attention to recent developments. We'd still be going on hold in June, but there would not be quite as much accommodation through the asset purchase program as what we initially planned. Also, doing it this way wouldn't signal the next move, except that the next move is presumably, since you're going on pause, to remove accommodation, if the economy continues to perform as expected. Many of you have noted the risks out there, and those could, of course, move against us. I think that doing something like this might help us. I have no illusions about adopting this, but I think if we played it this way, this might help the FOMC during the May–June time frame.

And on that, I want to make some remarks on Vice Chairman Dudley's comments yesterday, which I thought were very helpful in this regard. We do face an environment of rising inflation expectations. It's not terrible, but further increases along this dimension would be unwelcome; we've got two months to go before the June meeting. The fiscal stalemate is not helpful to us and is hurting inflation expectations in this regard. The dollar is weakening pretty substantially, and I am a little concerned that the dollar, even though there are a lot of crises around the world, is not really viewed as a very good safe haven in the last few months. Investors are flocking to traditional inflation hedges. A lot of that doesn't make any sense to me, but I think it is some investor behavior to pay attention to. You've got the ECB tightening with us not really signaling that we are going to follow anytime soon.

All of this is very manageable, but July 1 is a long way away, and I'm a little worried that things could get a little bit away from us during the intermeeting period, and signaling a little bit toward less accommodation might be a bit helpful. I think that another problem for us is that

June will not be a good moment to act, because in June our asset purchases will be wrapped up. The way the discussion is going now—and depending on how the economy performs—we're evidently planning to end the program there and go on hold, so that won't be a good meeting to take any other action. I think the meeting to do this is now.

Let me comment for just a minute on our uber-easy monetary policy. It is very easy in absolute terms. It's also appropriately easy, conditional on the state of the economy. I do agree with this, although Taylor rule calculations can be sensitive to details, as our Tealbook shows, and as the literature certainly shows.

The main idea about describing our policy as very easy is that it is going to take a long time to normalize policy. You've got zero rates, and you've got a large balance sheet. Those things take a long time to normalize. It may be prudent for the Committee to get started at some point, so that policy adjustment can be more gradual, and we can adjust the pace of removing accommodation according to events. We can take pauses at some point. Then the Committee may not have to move as aggressively later. So I think there is something to consider in the fact that policy is very easy in absolute terms.

I just want to caution everybody that these Taylor rules also are calibrated using data from the Great Moderation time frame which had relatively small shocks to the economy, certainly a different situation than what we have today. So we may want to supplement those calculations with some judgment about how the situation has changed versus, say, the 1990s or the 2000s. I agree with President Plosser on difference rules, which get rid of the gap-type problem and let you calibrate policy without having to know what the gap measure is. Those rules are all subject to many technical qualifications, but I think they are important.

Also, I want to stress that the 2004 to 2006 tightening is certainly questionable. Many view it as having been too slow, too mechanical, and possibly having allowed bubbles which caused problems. These are some of the points that have been repeatedly stressed here by President Hoenig and for which I have some sympathy. That kind of bubble argument doesn't come into—and the Chairman mentioned this yesterday—the normal Taylor-rule calculation, because it's just not part of the model. So we have to pay a lot of attention to that going forward.

The bottom line is that there is plenty to mull in this unprecedented situation for monetary policy, and I just wanted to make a few of these points during my chance for the policy discussion here. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you, President Bullard. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I support alternative B. In general terms, my outlook is not that dramatically different than it was in March. My forecast is for moderate output growth, unemployment rates that remain elevated, and core inflation rates that are still below our mandate-consistent levels.

Like the Tealbook, I revised up my projection for core PCE inflation. This revision moved up my expected date for the first increase in the fed funds rate by one or two meetings. However, my outlook is still consistent with the “extended period” language in alternative B.

While my outlook does not support the quicker policy response offered by alternative C, I am concerned about the upside risk to inflation. Temporarily high headline inflation presents a price stability risk if we're not able to keep longer term inflation expectations anchored. Fortunately, as I mentioned yesterday, a range of financial market indicators suggests that longer-term inflation expectations remain mandate consistent, and, in my view, I think we need to maintain those expectations right where they are.

I would not use “generally” in front of “inflation expectations” in the last sentence in paragraph 1. I would leave it as it is. I also think that providing greater clarity on our exit strategy would help us with our policy credibility and help us to maintain inflation expectations at their current levels. Being more specific with the public about our policy intentions and the methods that we’re going to use would help to offset some of the public concern about our ability to control inflation with such a large balance sheet.

I think another step in helping us with policy credibility and maintaining inflation expectations anchored would be to publicly announce an explicit numerical inflation objective. As we have been discussing, I think this is going to be a difficult time to describe our outlook for inflation to the public. Setting an explicit numerical objective would help with that communication. It would also force us to be clear on which measure we are targeting. So I hope that we can return to that issue at a future meeting.

I also share the concern that has been raised by several of my colleagues about the new language in paragraph 2. That is, stating in paragraph 2 that underlying inflation is low, but then stating later on that we are going to see a decline. But, Mr. Chairman, given your comments that you will address this at the press conference this afternoon, I am comfortable with the language as it is in this new alternative. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I support alternative B. I support the announced \$600 billion of additional asset purchases. I support maintaining the “extended period” language. I broadly agree with the Tealbook’s policy assumption, basically, which is a fairly extended accommodation. In making this recommendation, I continue to focus on our dual-mandate goals for the economy. Whether you look at real GDP, nominal GDP, or

employment, we continue to be far below levels that I associate with a well-functioning economy related to pre-recession levels. I think that we are still pretty far below that.

Because President Plosser keeps mentioning the unemployment rate in the context of the statement, I always remember what Chairman Greenspan and Don Kohn used to say: When you talk about unemployment, the measures are pretty variable; they move around month to month in ways that require a lot of understanding. The labor force also moves around a lot. But something about taking the ratio of those cleans this out, and the unemployment rate is a fairly stable measure. It doesn't move around very much. I think you are asking for more explaining if you move away from that the unemployment rate; I'm not bothered by the unemployment rate at all.

In terms of inflation, I would just like to make a side comment for the record, because President Fisher yesterday mentioned again this language like, "Our policies have been monetizing the debt." And I just want to be very clear on the record that I disagree completely with that characterization. I think that monetizing the debt is when you permanently replace debt with money. Our discussion yesterday was all about the fact how that is not going to be a permanent replacement, and so I just think that is a mischaracterization of our policies.

Now, for inflation. I guess I didn't study the new language carefully enough over the weekend, but I do have some sympathies to this idea that inflation has been higher, and we do need to acknowledge that. One thing I have learned from going out and talking to the public is that we need to acknowledge what they, and in fact, we are all experiencing. So I'm sympathetic to that. But the current paragraph 2 has got this, you know—down, up, underlying inflation, somewhat low, and then we refer to commodity prices as having pushed up "inflation." I just think that in talking about this—even as I heard Bill English describe this, he sort of slipped in

“headline inflation” when he mentioned that—it needs a modifier. As it stands, it has the opportunity to rebrand what we mean when we talk about inflation if we don’t have that modifier. Inflation is a general rise in all prices, and I don’t think we’ve got that uniformity in price increases at the moment. And, our forecast that you are going to talk about, Mr. Chairman, shows the central tendencies up in 2011, but in 2012, and then rising in 2013. So it is not just that we are going to decline to rates consistent, but we’re going to go down, and then we are going to go up, and we’re below that. I’m sympathetic to trying to get this right. I would, in fact, be willing to talk about the entire path. And while you can do that during your press conference, this is new territory, and the statement will be out there. I am nervous about that. I don’t believe medium-term inflation is too high. I think we are in fact below the mandate. I think this is a very notable change in language, and so I want to be very careful on that. Thank you, Mr. Chairman.

MR. BULLARD. Mr. Chairman?

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. I just have one question for President Evans on monetizing the debt. Some of the options that we look at actually do talk about just leaving the balance sheet larger and operating under a different operating system. So if we did that, would you consider that monetizing the debt, since that would be a permanent increase in the size of the balance sheet?

MR. EVANS. Well, I appreciate that, and I think one characterization is this permanent placement. But, overall, I think inflation is really low, and so the fact that we move to a different operating procedure where maybe we contemplate a floor where more of it would be permanent—I mean, this is not a partnership with the Treasury; this is not Zimbabwe or anything like that or hyperinflation, period. And to even talk about monetizing the debt—I mean,

President Fisher has used words like “dangerous” out in the public, and I think this is not helpful. So, yes, I would disagree with that characterization.

MR. FISHER. Is it all right if President Fisher makes a comment? I am delighted to hear you say it was a temporary phenomenon. I am especially delighted to hear you make it clear that this is not what we’re going to do. And I think we have 100 percent agreement at the table. Thank you for clarifying that.

MR. TARULLO. Mr. Chairman—I don’t think we have 100 percent agreement, President Fisher, because you have been saying publicly that we have monetized the debt. And I don’t think that that was either the intention or the action of this Committee. So I wonder if you agree with the other part of President Evans’s statement.

MR. FISHER. I believe we temporarily did so. I believe the numbers are there. That’s my belief. The beauty of this Committee is we have a diversity of views. I don’t want to waste our time on this discussion, Mr. Chairman. I think we should get back to addressing the alternatives.

CHAIRMAN BERNANKE. Okay. Thank you. President Lacker, you’ve got a two-hander?

MR. LACKER. Yes. I heard you (President Evans) say something about inflation that made me wonder if we understand inflation in the same way. You said it’s not inflation if it’s not a broad and uniform increase in prices.

MR. EVANS. No. I said inflation was a general increase in all prices. I didn’t state it in the negative way that you did.

MR. LACKER. Well, so, relative prices change at the same time inflation goes up. Does the change in relative prices negate there being inflation? If half the prices go up at 40 percent and the other half don't change, do we not have 20 percent inflation?

MR. EVANS. I just think inflation is a monetary phenomenon. And whether or not we generate a higher increase in all prices, it comes down to the policy assumption that we have here. Our medium-term inflation forecast is for something lower than that. This doesn't look like inflation to me. Most of our models have a single price index. We don't even talk about uniformity of prices. That's just my assessment.

CHAIRMAN BERNANKE. Okay. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I support alternative B. I think the situation calls for a steady-as-she-goes posture. I think there are scenarios that would call for a policy adjustment earlier than I think the Committee would otherwise intend. But at this juncture I would not signal anything that suggests a change of policy in the near term or any likelihood of deviating from the announced LSAP2 plan. This could create unnecessary volatility in the economy at this time when crosscurrents have produced somewhat more ambiguity than was the case at the beginning of the year.

Turning to the statement, the characterization of the economy in alternative B is broadly consistent with my own reading of the current circumstances and outlook. Because various TIPS measures are up since the last FOMC meeting, I can see the case for describing longer-term inflation expectations as "generally stable" rather than "stable." But I am not convinced longer-term expectations are so out of line as to warrant this potentially significant change in language, which could come close to sounding like an FOMC call to action.

I am, I have to say, somewhat sympathetic to President Evans's suggestion of a modifier. I think there is some potential for our treatment of inflation in this statement to still be confusing. But, in some respects, in response to President Plosser's recommendations, all things considered, I think in this statement I would keep changes limited. I would introduce few or no new ways of describing or explaining, even if I'm sympathetic with the thinking. I would put the emphasis on the press conference and try to keep this statement as spare as possible. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I support alternative B. I consider the current stance of monetary policy to be warranted by economic conditions. The unemployment rate remains well above its longer-run sustainable rate, and, as I noted in the economic go-round, this gap mainly reflects a shortfall in aggregate demand rather than structural factors. Moreover, longer-run inflation expectations remain reasonably stable, and I anticipate that headline inflation will subside later this year to a level close to underlying inflation, which remains substantially below my assessment of the mandate-consistent inflation rate. I expect the economic recovery to continue at a gradual pace and inflation to remain subdued over the next several years. I, therefore, support the continuation of our forward guidance that the federal funds rate is likely to remain exceptionally low for an extended period.

And I support the completion of our \$600 billion asset purchase program. I think the effect of that program began working its way through the pipeline even before we announced it last November, and market expectations have been conditioned all along on the assumption that we would follow through and complete the purchases. So in response to President Bullard's argument that we should stop early, I would say that the failure to complete the program would

surprise markets, and it would boost longer-term rates right now. In effect, such a decision would amount to a withdrawal of policy stimulus now, and that's a policy shift that I don't consider warranted at this time. I also think it would impair the Fed's credibility and unnecessarily whipsaw financial markets.

My views on the appropriate path for monetary policy generally accord with the Tealbook baseline, but I see risks to the inflation outlook that could warrant an earlier onset and more rapid pace of policy firming. In particular, if a continued run-up in commodity prices appeared to be sparking a wage–price spiral, then underlying inflation would begin trending upward and a policy response would be imperative. In light of the experience of the 1970s, it's clear we cannot be complacent about the stability of longer-term inflation expectations, and we must be prepared to take decisive action, if needed, to ensure that they remain firmly anchored. On the other hand, our policy decisions and communications must also take into account the fact that there remain material downside risks to economic activity and inflation. At our March meeting, we generally agreed that the recovery was on a firmer footing, but the incoming information over the past six weeks has been notably less upbeat.

I still expect the recovery to proceed at a moderate pace, and I'm glad we have resumed the exit strategy discussions. But let's be mindful of the possibility of *déjà vu*. We could still discover over the coming months that the modest pace of GDP growth last quarter was more than just a soft patch. Given the very high bar for launching a third round of asset purchases, this suggests that we should be cautious about moving too quickly to initiate the process of policy firming.

On the various language issues, I do understand the logic of including the bracketed “[generally]” in paragraph 1, and I could certainly live with doing it. On balance, I guess I do

think it would be quite a significant change and would be perceived that way by the markets. I'd prefer to omit it. I think longer-term inflation compensation, as measured by TIPS, is within historical ranges, and staff analysis supports the view that the recent uptick since our last meeting is actually due to changing liquidity and inflation risk premiums. So I could go either way on that, but would prefer to omit it. And on the language in paragraph 2, on balance, I would support President Evans's suggestion that we include the modifier "headline" in front of "inflation."

Finally, I wanted to mention that I really appreciated Narayana's memo about using the Taylor (1999) rule to gauge the appropriate timing of policy liftoff. I've actually been a long-time proponent of using simple rules as benchmarks for monetary policy, which is not to say at all that we can just put policy on autopilot, blindly following the prescriptions of any single rule. I don't think—and the Chairman's discussion yesterday showed this—that we can use them to absolutely pinpoint a moment when we need to begin tightening. But I think that giving greater prominence to such rules could facilitate our internal decisionmaking process and would be helpful in explaining what we are doing to the public.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. We are near the end of a third go-round, and I have no case to make for a change in policy. So I had planned to fly in the face of FOMC tradition and stop speaking, but in listening to all of the discussion, I am struck by "core inflation," "underlying inflation," "headline inflation," "inflation in the medium term," "inflation expectations," "inflation projections," and even now, "unmodified inflation." And I think it's really important, if we are going to build credibility, if we are going to emphasize our commitment, that we start to talk about inflation in the same way and what we mean about it.

This debate between President Evans and President Lacker about what is inflation and rebranding inflation says a lot about where our disagreements are. I think having disagreements about the level of inflation is one thing, but having disagreements on what we're talking about when we talk about inflation actually creates a lot of confusion. And I just don't think we can build that credibility until we're all speaking about the same thing. I was very pleased to hear the Chairman say yesterday that core inflation is now yesterday's news and that we're actually going to pay attention and talk about the things that real people are actually seeing and help people understand what that means in terms of inflation. And I think that's important in all of our discussions.

Moving to the statement, having listened to all of that, I was originally agnostic on having "generally" before "stable" in paragraph 1, but I think we probably ought to leave it out. It seems like an extra modifier that I wasn't sure there was a lot of support for.

And then, in paragraph 2, I would agree with President Kocherlakota's suggestion that we go back to "in a context of price stability" at the end of that sentence and leave out "a decline," because I got to thinking—all right, pushed up inflation to where, and a decline from where, to a level that's consistent—where's that level? It created three questions in my mind, and I think if we go back to the original language on that last sentence, it would be helpful. I know you disagree with me, Jeff, but anyway, Mr. Chairman, those are my thoughts. I support alternative B.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I support alternative B as well, but I should say, I support it with the understanding that paragraph 3 genuinely is communicating neutrality with respect to the potential for adjustment of holdings in one direction or another in the future.

As people could tell from my remarks yesterday, I'm on the lower end of projections with respect to expectations for economic growth. I continue to think that growth is going to be a problem. Monetary policy is becoming trickier, and there's no question but that the inflation concerns that a lot of people have raised are something that we are going to need to be watching carefully. But I don't think at this juncture, given what I heard to be most people's expectations that these effects would be transitory, that we want to do anything like beginning to move toward the exits, which I think ending reinvestment or changing the language would surely be.

With respect to paragraph 2, I found myself sympathetic both with Jeff's suggestions for changes and with Charlie's concerns about those changes, because I think Jeff is trying to do what Betsy suggested, regularize the use of the language, which would probably be good for us all. But I think Charlie's point is, given how many terms have been used at this point, it might sow more confusion than clarity to do so.

So although I actually was comfortable with the two changes that are incorporated here, like Betsy, I am attracted to Narayana's compromise, which is to say, "other commodities have pushed up inflation in recent months," but then return to the "in a context of price stability," and then perhaps allow the Chairman to use a little bit of his time this afternoon to begin this process of clarifying exactly what we mean as we talk about inflation.

And I don't have a strong view on "generally." I think, at the margin, I would omit it.
Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Raskin.

MS. RASKIN. Thank you, Mr. Chairman. I support alternative B, because the economic recovery is too halting and uneven to warrant a substantial shift now in the stance of monetary policy. The unemployment rate has come down, but it remains high relative to other labor

market indicators, which show a high number of people wanting full-time work but finding only part-time work. Wage gains are minimal, and unit labor costs are not changing.

Measures of inflation have moved up, reversing a small part of their decline since 2008. That said, the run-up in energy prices is slowing consumer spending. In addition, political unrest in the Middle East and North Africa, and the resulting upward pressure on oil prices, have increased the likelihood of an adverse shock to real incomes and to household confidence and, to a lesser extent, business confidence, and thus to private domestic final demand.

If there are further increases in oil and commodity prices, and a more-than-transitory spillover to other prices, one could imagine inflation expectations becoming unanchored. Given these conditions and others that have been discussed, I think that the current stance of monetary policy strikes me as appropriate. Thank you.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Well, I was thinking through what we heard from David Wilcox yesterday, and from the Bank presidents in particular, and the dissonance that is being reported. My notes to myself summarized them as follows.

On economic growth, like the old saw about the music of Wagner, “It’s not as bad as it sounds,” and on inflation, like gangsta rap, it’s worse than it sounds. I think so much depends, Mr. Chairman, on, really, what you say at this press conference and your comportment, which I am very confident about.

In looking at the statement, I think less attention will be paid to the statement than is normal. Almost as much attention will be paid to you as is being paid to what Kate Middleton will wear at her wedding. [Laughter] And I am grateful for that distraction.

On the statement, I think Mr. Evans has a very good point. Here are the facts. The headline PCE price index posed an annualized rate of increase of 4.9 percent in February. That's its fastest one-month rate of increase since June of 2009. That makes three straight months of headline readings in excess of an annualized 3 percent rate. I would have no problem with inserting the word "headline" between "pushed up" and "inflation." I think he makes a good point. Generally speaking, I agree with Mr. Lacker's amendments. I'm glad that they were reflected in alternative B. I like President Kocherlakota's inclusion of "in the context of price stability"—it takes some of the seesaw out. But I think the most important amendment that's been suggested thus far was President Plosser's, which is to conclude the first paragraph by saying, "longer-term inflation expectations remain within historical norms," et cetera, et cetera. I believe I heard him say, "indicating" whatever—"over the medium term" rather than the "medium run." But I would accept that language.

Let me just make a general comment about some of the tempers that seem to have flared during this discussion. The beauty of this Committee is that it reflects diversity. There are academics, there are very serious scholars at the table, there are actually three former bankers at the table, and there are people with a supervision and regulation background. I don't think we should discourage diversities of view. I take a chapter out of Oliver Wendell Holmes: "Do not be bullied out of your common sense." And, moreover, that it is very important that we adhere to both education in the obvious as well as investigation of the obscure. One of the great things about this Committee is we have the talent and capacity to look at things in great depth, but we also have the ability to take soundings in the field. And, as I mentioned earlier, those soundings I wouldn't disparage, I would use to complement and supplement what we analytically and intellectually infer from our discussions and from our models.

Mr. Chairman, I think that, in addition to the statement and the suggestions that I have just made, the important thing today is really this press conference. I think it would be prudent for you to make a firm statement in your conference as to our resolve in containing inflation. I thought your summary, as you presented it at the beginning of this discussion, was spot on. I was tempted to embrace alternative C and to dissent at this meeting; I will not do so. I would ask that you do, indeed, focus and reassure the markets about our intent to contain inflation and seek price stability, because there are some doubts out there, whether they are deserved or not. And I would conclude by saying that you might also consider noting during your press conference that the Committee is aware of, and is monitoring, the resurgence of some financial practices that could prove to be counterproductive. This is a concern we haven't discussed as a group and we don't include in the statement, but I sense it is out there and I would like to put any notion that we are not aware of it to an end.

So, in summary, I would support alternative B, with the amendments I mentioned, particularly the end of the first paragraph with President Plosser's suggestion. I would insert the word "headline" before "pushed up inflation," because that, indeed, is the fact. And I would accept Narayana's truncation of the last sentence in paragraph 2. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you. I support alternative B. In terms of our large-scale asset purchase program, we should finish the \$600 billion. Stopping here would send an inappropriately strong signal that we're starting to remove accommodation relative to the actual effect that the \$170 billion would actually have. You would have a very strong market reaction relative to what the actual effect would be on the balance sheet.

With respect to future large-scale asset purchase programs, I get the sense from the Committee that the bar is quite high for a couple of reasons. One, deflation is no longer a significant risk. Two, the economy looks better than last summer, and three, which hasn't been mentioned, there is more interest rate risk as the size of our balance sheet increases. So while the language in paragraph 3 is neutral in terms of prepared to adjust up or down, I view the bar as pretty high to further large-scale asset purchase programs, at least at this time based on what we know about the outlook today.

In terms of the statement, there is this question about whether inflation expectations are “stable” or whether inflation expectations are “generally stable.” You know, we debated this in New York, and we came to the conclusion that “generally stable” was probably a more accurate description of what we're actually seeing. And I guess my preference is to have paragraph 1 call it how we see it and not shade it because of worries about market reaction. That said, I do agree that the change will be noticed, but I think that being as accurate as possible is important in terms of maintaining our credibility. Putting in the word “generally” could actually be productive in the sense that it might show a greater concern about inflation expectations, which might keep inflation expectations better anchored. It could prove beneficial to us rather than problematic, and I do favor putting in “generally.”

In terms of President Plosser's suggestion of historical norms, I guess my problem there is: What time period does “historical norm” apply to? Does it include the 1965–82 period? And how do we feel about it being within historical norms? There's no view of whether the idea of historical norms is acceptable or not, so I think it's a little vague in terms of how people would interpret it.

In terms of paragraph 2, I favor keeping the last sentence unchanged, “in the context of price stability,” because it avoids this low-high-low pattern of that paragraph in introducing so many different concepts. I think it keeps the paragraph simpler, and, to President Lockhart’s point, maintains our practice of only making changes when we think the changes are actually necessary and a distinct improvement. If people don’t want to do that, I could accept it. I could certainly accept inserting the word “headline” or “overall” as the modifier to the inflation rate in that paragraph. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. Let me try to start by saying something about policy, then turn to general issues of communication, and then we’ll try to wordsmith the statement a little bit.

We are in good time here, so—not that I’m going to tempt everybody to turn into E. B. White [laughter], but anyway.

The big policy action that’s being proposed under alternative B is to announce the end of what to my distaste, but nevertheless unavoidably, is now known as QE2. There have been some postmortems of this already in the media. My own view—and I appreciated President Bullard’s comments on this yesterday—is that the program was reasonably successful. It was undertaken at a time when we were concerned about the sustainability of the recovery. It was not clear that growth was sufficient to reduce unemployment, and deflation risk, although not high, nevertheless was building as core measures fell below 1 percent, and at that point, of course, headline and core were pretty close. What our policy did was clearly demonstrate that we can affect financial conditions even though the zero lower bound is binding; that’s intellectually a historically important development to show to be the case. I think there’s little doubt of that even among the skeptics. In addition, the forecasts and outlooks between August and January

generally improved, and in particular, of course, deflation risk is largely gone and the recovery seems self-sustaining. That has been slowed a bit lately by the oil price increases. As I argued yesterday, I don't think that's really due to QE2, although some others might disagree, but again, I think that it's been generally a successful exercise.

Some of the commentary that claims otherwise, I think, does so only because it seems to assume that we somehow claimed that this was going to be a panacea, that it was going to solve all of our deep economic problems. We never made any such claim. At one point we published work that said it would cause 700,000 additional jobs, or about 30,000 a month, which is hardly a game changer, but certainly something that, at least at the time, most of us thought was worth doing. I'm sure there's some rationalization here, but in my own view, it was the right thing to do, and it was a very important experiment. I would like to complete it both because I think it is needed substantively and because I don't like the signal that not completing it would send.

Going forward, as some have noted, further actions of this type would have to meet a very high bar. In particular, I think we'd need to be looking again at real concerns about the sustainability of the recovery and about deflation; slow recovery, for example, is not going to be sufficient. Of course, if further stimulus is needed, we could reconsider alternative measures, such as changes in language and so on, but let's leave that for the future. My modal forecast at this point is that we will go on hold for a short period, at least, to see what's happening, and if things go as I hope they will and as we all hope they will, we can begin a process of gradual exit through many of the steps that were outlined in the various discussions yesterday. But we'll see, of course, as always. Policies always stay contingent and provisional.

I'll just say one word about President Bullard's useful interjection about Ss rules. There's always some degree of that in Committee discussions. In particular, another example is

the fact that we always move in 25 basis point increments; we don't move in 10 basis point increments. In my view, part of the reason why that doesn't constrain our ability to respond continuously is because our language and our signals do allow for some variation in effective tightness by changing expectations in markets. But I agree that we certainly want the markets to respond in a way that is consistent with the incoming news flow.

Let me just say a word about communication. There have been a number of really good issues raised. First, in terms of general framework, I think we basically have a framework. I think a lot of it was expressed in the document that President Plosser and his group put together in their discussion of numerical inflation objectives. It's pretty much a modern centrist macroeconomic framework. But it's also true that in terms of our language, between "underlying" and "overlying" and "temporary" and "permanent" and everything else, that we are getting so deep into the code words that we need Alan Turing and the Enigma machine to figure some of it out. [Laughter]

Now, I'm very flattered about all the comments you made about how my press conference in 30 minutes is going to clarify all these matters [laughter] and straighten everybody out, and I will do my very best, I promise. I do think that the press conference over time, in conjunction with the evolution of our language, will be an important adjunct and will allow us to clarify and be more explicit about the framework, about the role of the numerical objective, about the role of short term versus long term, about inflation forecasts, and the like. But I think that we do need—and I charge Bill English and others with this—as we move even toward the next statement, to step back a little bit and try to clarify our framework, make it a little sharper so that we can link it up to the language in a more transparent way. Again, a number of other useful suggestions about communications were raised today and yesterday. I think that taking core

inflation out of the projections is something we should discuss. It would send a very strong signal, and it's not evident what role it's playing at this point if we have our explicit forecasts.

As I said yesterday in response to President Bullard, future headline inflation is our objective, and I don't think anyone doubts that. I think many of the critics either don't understand or don't want to understand what the role of core inflation is: It's just simply an intermediate indicator or a forecasting device. At the same time, as we discussed the projections, additional good suggestions were made; one was that if we can do it in a way that would not be confusing, given the many dimensions of the balance sheet, maybe we could begin to provide some information on our balance sheet expectations or on our policy rate expectations. This is not something I necessarily advocate doing in the next six weeks because it's complex and there's not a whole lot of international experience to draw on, but I think we should be thinking about that.

I have one other suggestion to make, and I've thought about this for almost 15 minutes now. [Laughter] President Kocherlakota made a very good point, which is that because the amount of effective stimulus does depend on expectations about how the balance sheet is going to evolve, and given the novelty of this particular tool, it would be very useful if we could provide more information to the public about how that's going to happen. We certainly have had some very good discussions. I think there are some areas where a majority of the Committee is in one place or another, but maybe we could begin a process of trying to put together a white paper or something like one that we would approve and release, that would say whatever it is we can agree on, and would try to provide at least some guidance to the public about how this process is going to unfold. Now, as I said, I've thought about this for 15 minutes, and I'm sure the staff are all canceling their vacations as I speak [laughter], but it would be good, I think, if we

could try to come up with something as a group. Of course, the trouble with these open discussions is that while they're extremely informative, at some point, obviously, we're going to have to make choices, and it would be good if we could figure out exactly what it is we agree on, where we don't agree, and how are we going to decide. So that might be one way forward. At a minimum, we should try to go back and summarize what was learned in the discussion yesterday—in the Tealbook, in the minutes, and elsewhere—to try to lay out those points. I think we have a lot of work to do in strengthening our framework and our communication. Press conferences are an opportunity, but they are not by themselves going to be sufficient, so I hear that loud and clear. Particularly at this critical stage, I think we need to keep thinking about that.

All right. Now, as usual, I'm trying to keep track of some of the various issues. I think there was broad support for alternative B for various reasons. If I'm not mistaken, I think there are really only two questions that we need to decide. The first has to do with the characterization of inflation expectations in the last sentence of alternative B, paragraph 1, whether or not they remain "generally" stable. I think I've heard three possibilities here. One is just to stay where we are and say that it remains stable. I personally have a mild preference for that because I don't think there's much evidence of any kind of significant change in inflation expectations. Now, Bill will argue that if you add up enough small changes, you get a significant change, so I'm basically open to whatever the Committee wants to do. Again, I have a slight preference not to change the language because it will create knock-on effects in the "extended period" language, and so on. But if we decide to change it, two suggestions have been made. One is to add the word "generally," and the other, from President Plosser, was to say something like, "inflation expectations have remained," and I would say, "within recent normal ranges." President Plosser, I would take that part. I would discourage the second part, although I think it's very useful,

about “medium term” because we then have the same issue in the second paragraph, and we would have to restructure the whole thing. I’d like to propose that we just systematically try to create a vocabulary that encompasses all of the various concepts that we have for inflation, but I don’t want to do that on the fly. So question number one is how to characterize inflation expectations in paragraph 1.

Question number two has to do with the changes in paragraph 2. There are two changes here. The first one says, “Increases in the prices of energy and other commodities have pushed up inflation in recent months.” Frankly, I think if we just have that change, and if we decide to eliminate the second one just for the moment—again, I’m open to discussion—but because our previous statement said, “are currently putting upward pressure on inflation,” unmodified, I’m not quite sure why a change is needed. Once you start talking about the decline in inflation, et cetera, then it’s becoming more complicated. One option, which I think I heard at least a plurality favor, was just to keep the first and drop the second, returning to the old language in the last sentence. The other alternative I guess I would propose would be to accept both changes and maybe to put in “headline inflation” in both places.

MR. EVANS. I agree with your characterization, Mr. Chairman. It’s really the last part, where it mentions a decline in inflation to rates consistent with the Federal Reserve’s mandate, that made me think differently about it. If you drop that one along the lines of President Kocherlakota, I do not have a problem with the “pushed up inflation in recent months.” That’s just fine.

CHAIRMAN BERNANKE. I don’t want to complicate it further, but you could say, “gradual return to higher levels of resource utilization and to levels of inflation consistent with

the Federal Reserve’s mandate,” without getting into ups and downs. That would be another way to do it.

VICE CHAIRMAN DUDLEY. I think it’s easier just to keep it the way it is.

CHAIRMAN BERNANKE. Okay. I withdraw that then. All right. So those are two questions. I’m going to take a straw vote on both of these in just a minute, but does anyone want to make a further comment—let’s start with the first one, on inflation expectations?

MR. PLOSSER. Mr. Chairman? Can I just make an observation?

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. It’s about two pieces of the language that are tied together. One is the issue of what we mean by underlying inflation. That was what I was trying to address. And I understand what you’re saying. We use it several times, so we’ve got to figure out a way around, but I think we need to work our way out of that language. And the second is the context of price stability. I’ve never quite understood exactly what that meant, and I think part of President Lacker’s effort was to get away from that. I would be happy if we made a commitment for the staff, as we move through the next set of languages, to try to clean up both of those concepts in a way that we’re consistent through this, which I think was what your earlier suggestion was. I think that’s going to be important going forward for us.

CHAIRMAN BERNANKE. Okay. Well, again, certainly the staff, Bill and others, hear that. Point taken. President Lacker.

MR. LACKER. If I could just add to that. Betsy is right and you’re right, I think, that we need to take a systematic look at the language that we use to communicate about inflation. I don’t think we’re far apart at all on the facts. I think we all understand it. It’s choosing the language to communicate what there is a consensus about.

I think, broad brush: The recovery is continuing, we know inflation is high, and it's going to come down. Those are the three things we want to communicate with the statement, and to go back to the context of price stability is to rely on people comparing context of price stability and high current inflation and realizing, oh, they're saying it's going to come down. I mean, to me, it's an oblique and, to my mind, unnecessarily indirect way of stating, "We expect inflation to come down." So I just wanted to get that point in.

CHAIRMAN BERNANKE. I think that's a perfectly viable option, as long as we put in "headline."

MR. LACKER. Yes, I'm not against putting in "headline." I mean, I think over time we're going to want to drop that. We could use "overall" just as well.

CHAIRMAN BERNANKE. Yes, "overall" would actually be even better, I think. Vice Chairman.

VICE CHAIRMAN DUDLEY. Earlier in that paragraph we do say that we expect these effects to be transitory, so we are setting up the idea of why we think that we're going back to price stability. If we hadn't mentioned the transitory nature, I would be more in agreement with you, but we do mention it. So that, I think, sets up what follows.

CHAIRMAN BERNANKE. Yes, that's true. President Kocherlakota.

MR. KOCHERLAKOTA. I'll say a couple things. First, I think references to "headline" should be avoided. I think in the systematic overview of language that will take place in the next six weeks we will regret using that language. The use of the term *price stability* is to connote two things at once, and perhaps it's too oblique to do that. One is that inflation will decline from its current high levels, but it's also to say that underlying inflation will return from its current low levels to 2 percent.

MR. LACKER. What’s “underlying inflation,” in this context?

MR. KOCHERLAKOTA. I think of “underlying inflation” as being our best possible forecast—

MR. LACKER. Forecast is going to return to—?

MR. KOCHERLAKOTA. Our actual forecast is for inflation to do this—to go up, and to come down below, and then to reach target from below. I think it’s a very subtle and artistic forecast. [Laughter]

MR. LACKER. It doesn’t say what our forecast is going to do, what we expect our forecast to do, which is different than what we forecast inflation to do.

CHAIRMAN BERNANKE. All right. Okay. President Lacker, would you be okay for this meeting to restore the ambiguity of “in a context of price stability?”

MR. LACKER. Yes.

CHAIRMAN BERNANKE. Thank you. That’s with the understanding that this is not a satisfactory situation. I think President Kocherlakota’s point about starting to throw in “headline,” adding yet another term, is going to be an issue. So I’m perfectly okay with “pushed up inflation in recent months” because I think that’s accurate, if that’s okay with everybody.

All right. Let’s restore the last sentence of alternative B, paragraph 2, and keep the change “have pushed up inflation,” not “headline inflation”—“have pushed up inflation in recent months.”

So then our remaining question is about inflation expectations. Let me just see first if there’s a plurality to leave it where it is, and if there isn’t—let’s vote the following way. Change or no change, and then if there’s a change, we’ll figure out which change is better. President Plosser?

MR. PLOSSER. Can I just say one thought that just occurred to me?

CHAIRMAN BERNANKE. Yes.

MR. PLOSSER. Rather than “recent historical norms,” you could say, “inflation expectations remain at acceptable levels.” That doesn’t address the volatility of them necessarily. But maybe that connotes too much.

CHAIRMAN BERNANKE. That’s a little anxiety producing.

MR. PLOSSER. Yes, I withdraw that. I’m sorry.

CHAIRMAN BERNANKE. All right. In the interest of coffee, I’m now going to ask how many people would like to just leave the characterization of inflation expectations as “remained stable,” and how many would like to consider an alternative. How many would like to say “remained stable”? [Show of hands]

CHAIRMAN BERNANKE. Okay. Well, ten is a majority, so we’ll just keep that language. Any other comments or questions? [No response]

CHAIRMAN BERNANKE. Okay. Again, I thank you for both your input and your willingness to work flexibly with the Committee. We’re ready for a vote. Debbie.

MS. DANKER. This is on alternative B, the statement in the handout, as well as the directive. In the handout, it is as written in the handout. The “generally” is struck, and the final sentence of paragraph 2 reads, “The Committee anticipates a gradual return to higher levels of resource utilization in a context of price stability.” Chairman Bernanke.

MR. ENGLISH. Do you want “continues to” to go back in there so that the sentence is staying the same?

CHAIRMAN BERNANKE. Shouldn’t we make the last sentence identical to the previous statement?

MR. ENGLISH. That is what I was suggesting.

MS. DANKER. Keep “continues to.” Okay. All right. “Continues to” is now in there.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes
Governor Duke	Yes
President Evans	Yes
President Fisher	Yes
President Kocherlakota	Yes
President Plosser	Yes
Governor Raskin	Yes
Governor Tarullo	Yes
Governor Yellen	Yes

CHAIRMAN BERNANKE. Thank you very much. We are very efficient. The next meeting is June 21 and 22. As you know, the press conference is at 2:15 p.m. If anyone is here and wants to see it, there will be a screening available in the Special Library across the hall.

In a moment I will call the end of the meeting and then have coffee, and for those who would stay, Linda Robertson will present a congressional update—optional. And now we are still having lunch, I guess?

MS. DANKER. I think they’re going to bring it at 11:30.

CHAIRMAN BERNANKE. Okay. At 11:30, for those who would like to have lunch; don’t ever tell me that there’s no such thing as a free lunch. All right. The meeting is adjourned. Coffee for 20 minutes, and then those who want to hear an update on congressional developments, please come back to the table.

END OF MEETING