

**Meeting of the Federal Open Market Committee
January 26–27, 2010**

A joint meeting of the Federal Open Market Committee and the Board of Governors of the Federal Reserve System was held in the offices of the Board of Governors in Washington, D.C., on Tuesday, January 26, 2010, at 2:00 p.m. and continued on Wednesday, January 27, 2010, at 8:30 a.m. Those present were the following:

Ben Bernanke, Chairman
William C. Dudley, Vice Chairman
James Bullard
Elizabeth Duke
Thomas M. Hoenig
Donald L. Kohn
Sandra Pianalto
Eric Rosengren
Daniel K. Tarullo
Kevin Warsh

Christine Cumming, Charles L. Evans, Richard Fisher, Narayana Kocherlakota, and Charles I. Plosser, Alternate Members of the Federal Open Market Committee

Jeffrey M. Lacker, Dennis P. Lockhart, and Janet L. Yellen, Presidents of the Federal Reserve Banks of Richmond, Atlanta, and San Francisco, respectively

Brian F. Madigan, Secretary and Economist
Matthew M. Luecke, Assistant Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Nathan Sheets, Economist
David J. Stockton, Economist

Alan D. Barkema, Thomas A. Connors, William B. English, Jeff Fuhrer, Steven B. Kamin, Simon Potter, Lawrence Slifman, Mark S. Sniderman, Christopher J. Waller, and David W. Wilcox, 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 Bank Supervision and Regulation, Board of Governors

Robert deV. Frierson,¹ Deputy Secretary, Office of the Secretary, Board of Governors

¹ Attended Tuesday's session only.

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

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

Linda Robertson,² Assistant to the Board, Office of Board Members, Board of Governors

Sherry Edwards, Andrew T. Levin, and William R. Nelson, Senior Associate Directors, Division of Monetary Affairs, Board of Governors; David Reifschneider and William Wascher, Senior Associate Directors, Division of Research and Statistics, Board of Governors

Stephen A. Meyer, Senior Adviser, Division of Monetary Affairs, Board of Governors; Stephen D. Oliner, Senior Adviser, Division of Research and Statistics, Board of Governors

Michael Leahy, Associate Director, Division of International Finance, Board of Governors; Daniel E. Sichel, Associate Director, Division of Research and Statistics, Board of Governors

Michael G. Palumbo, Deputy Associate Director, Division of Research and Statistics, Board of Governors; Egon Zakrajsek, Deputy Associate Director, Division of Monetary Affairs, Board of Governors

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

Carol C. Bertaut, Senior Economist, Division of International Finance, Board of Governors; Louise Sheiner, Senior Economist, Division of Research and Statistics, Board of Governors

Mark A. Carlson and Kurt F. Lewis, Economists, Division of Monetary Affairs, Board of Governors

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

Carol Low, Open Market Secretariat Specialist, Division of Monetary Affairs, Board of Governors

Randall A. Williams, Records Management Analyst, Division of Monetary Affairs, Board of Governors

Harvey Rosenblum, Executive Vice President, Federal Reserve Bank of Dallas

² Attended Wednesday's session only.

David Altig, Spence Hilton, Loretta J. Mester, and Glenn D. Rudebusch, Senior Vice Presidents, Federal Reserve Banks of Atlanta, New York, Philadelphia, and San Francisco, respectively

Warren Weber, Senior Research Officer, Federal Reserve Bank of Minneapolis

David C. Wheelock, Vice President, Federal Reserve Bank of St. Louis

Julie Ann Remache, Assistant Vice President, Federal Reserve Bank of New York

Hesna Genay, Economic Adviser, Federal Reserve Bank of Chicago

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

**Transcript of the Federal Open Market Committee Meeting on
January 26-27, 2010**

January 26—Afternoon Session

CHAIRMAN BERNANKE. Good afternoon, everybody. This will be an FOMC meeting for the first six items because it is an organizational meeting, and then at that point, if Matt reminds me, we will make it a joint meeting with the Board. This is the annual organizational meeting. Let me first recognize the Presidents rotating into voting status: Presidents Bullard, Hoenig, Pianalto, and Rosengren.

Organizational item number 1 is the election of Committee officers. Let me recognize Governor Kohn.

MR. KOHN. Thank you. It is a pleasure and a privilege to nominate Ben Bernanke to be Chairman of this Committee. I can't think of a better person to herd all of these cats. [Laughter]

CHAIRMAN BERNANKE. Thank you. Is there a second?

MR. WARSH. Second.

CHAIRMAN BERNANKE. Other nominations? Without objection. Thank you very much. Governor Kohn.

MR. KOHN. It is also a pleasure and a privilege to nominate Bill Dudley to be the Vice Chairman of the Committee.

CHAIRMAN BERNANKE. Thank you. Second?

MR. WARSH. Second.

CHAIRMAN BERNANKE. Without objection. Thank you. Item 1C is staff officers. Would you please read the list, Matt.

MR. LUECKE. Secretary and Economist, Brian Madigan; Assistant Secretaries, Matt Luecke, David Skidmore, and Michelle Smith; General Counsel, Scott Alvarez; Deputy General

Counsel, Tom Baxter; Assistant General Counsel, Rich Ashton; Economists, Nathan Sheets and Dave Stockton; Associate Economists from the Board, Tom Connors, Bill English, Steve Kamin, Larry Slifman, and David Wilcox; and from the Banks, Christopher Waller, Mark Sniderman, Simon Potter, Jeff Fuhrer, and Alan Barkema.

CHAIRMAN BERNANKE. Thank you. Any questions or comments? If not, may I have a second for the motion that we approve these officers?

MR. KOHN. Second.

CHAIRMAN BERNANKE. Thank you. All right. Without objection. Item number 2 is a proposed revision to the program for security of FOMC information. You received a memo from Scott and Matt. There is an essentially expositional change to add a summary of the rules that govern noncitizen access to FOMC information. Are there any questions for Scott or Matt about this memorandum? [No response] Could I have a motion to adopt the revision?

MR. TARULLO. So moved.

CHAIRMAN BERNANKE. Second?

MR. WARSH. Second.

CHAIRMAN BERNANKE. Without objection. Thank you. Item number 3 is the selection of a Federal Reserve Bank to execute transactions for the System Open Market Account. I have been informed that New York is again willing to serve. Do we have a second?

MR. KOHN. I second.

VICE CHAIRMAN DUDLEY. We are rethinking that now. [Laughter]

CHAIRMAN BERNANKE. All right. Without objection. Thank you. Number 4; now we are getting to the controversial items—selection of a Manager of the System Open Market Account. Brian Sack is the incumbent. Are there other nominations? If not, any objections to

naming Brian Sack the Manager? [No response] The New York Federal Reserve Bank will have to find that acceptable. We trust that they will.

Next, item 5 is a review of the authorization for domestic open market operations. Let me turn this over to Brian to present the items. There are four items here. Would you like to discuss them briefly?

MR. SACK. Yes. Thank you, Mr. Chairman. The Committee reviews the Authorization for Domestic Open Market Operations at its first meeting each year. I propose a few amendments to the domestic authorization for the Committee to consider. These changes were described in the memo that I sent to the Committee on the subject ahead of the meeting. Let me highlight two major changes.

First, I am proposing that the Committee expand the securities eligible for the repo pool offered to foreign, international, and fiscal agency account holders to include securities that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States. This change would, in effect, expand the range of SOMA assets to be used in these transactions to agency debt and agency mortgage-backed securities, as opposed to the current authorization's restriction to only Treasury securities. This wider set of securities corresponds to those that are eligible for outright purchases or sales by the Desk. This change would allow the Desk to optimally allocate the SOMA's asset holdings across different tools and facilities going forward. In particular, it would provide the Desk with additional collateral to offer as a repo facility to our customers, allowing Treasury collateral to be used as needed in other facilities or transactions.

Second, I am proposing a change to the language in section 4.B so that it is more consistent with other sections of the authorization. These changes include clarifying the term

“agency securities” to explicitly refer to both agency debt and agency MBS securities. Note, however, that operations under section 4.B are not currently in use.

In addition to these items, I would like to update the Committee on four issues related to the authorization. These items do not require changes to the domestic authorization. First, I recommend that the Committee keep suspended the guidelines for the conduct of System operations in federal agency issues, because the agency and agency MBS purchase programs are still under way. Second, in the policy directive to be discussed at the end of the meeting, I propose that the Committee authorize the continued use of dollar roll transactions to aid in the settlement of the Federal Reserve’s agency MBS purchases that will be conducted through March. As I will explain in my financial market briefing, there have been considerable settlement failures in the MBS market in recent months. The ability to conduct dollar roll transactions allows the Fed to defer settlement, if necessary, in order to facilitate the smooth process for achieving delivery of our purchased securities. I anticipate that the use of this tool would continue to be relatively limited in nature, between an estimated \$10 billion and \$30 billion in activity per month, with the final dollar roll in this context likely to be executed no later than August.

Third, the current authorization allows the Desk to transact in agency MBS for the SOMA through agents. We are working to bring agency MBS administration, trading, settlement, and risk analysis in house, but this process is likely to be lengthy, and I am thus asking that this authority be retained through 2010. Lastly, in November the Committee authorized the Desk to conduct small-scale reverse repo operations as needed to ensure the operational readiness of this tool across a broad range of collateral types and counterparties. We successfully conducted a series of operations in December, which increased the Desk’s

confidence that tri-party reverse repos could be quickly implemented. However, these operations did not employ agency MBS collateral and did not involve an expanded counterparty list. Thus we anticipate a need to conduct at least two additional programs of small-scale operations in the first half of 2010 to further improve our operational readiness. These operations are covered under the current resolution. We need a vote to approve these changes.

CHAIRMAN BERNANKE. Thank you, Brian. So we will need to vote on the first item, which allows the use of agency debt and agency MBS in the collateral pool for foreign counterparties. Let me just comment on the suspension of guidelines. This is the step we took when we began to purchase the MBS—I guess it was more than a year ago now. I think at this point we can't really revisit this as long as our program is continuing, but we won't wait until next January to look at this again when the time comes, so let me just commit to that. Are there any questions or comments for Brian on any of these items? President Plosser.

MR. PLOSSER. Just to clarify your last comment. Does this have to be reviewed formally every year?

CHAIRMAN BERNANKE. This authorization has to be reviewed every year. This is part of the authorization. So at a minimum, we would have to review it next January, but we will look at it again at the appropriate time.

MR. PLOSSER. That's fine. I just wanted to make sure that I understood the criteria.

CHAIRMAN BERNANKE. Do I have that right, Brian? We'd have to look at this again in any case?

MR. SACK. That's correct.

CHAIRMAN BERNANKE. Any other questions or comments? [No response] All right. If not, then we need a vote to allow agency debt and MBS to be used as collateral. Are there any objections?

MR. KOHN. So move.

CHAIRMAN BERNANKE. Any objections? [No response] Okay. Thank you. All right. Brian, foreign currency operations?

MR. SACK. On the foreign side, the Desk operates under the following Committee guidelines: the authorization of foreign currency operations, the foreign currency directive, and the procedural instructions with respect to foreign currency operations. I recommend that all three be renewed without amendment. In doing so, I am proposing that the list of currencies in the authorization remain unchanged this year, under the view that it reflects the current foreign exchange market structure. We need a vote to reaffirm these instruments. The vote to reaffirm these documents will include approval of the System's warehousing agreement with the Treasury.

CHAIRMAN BERNANKE. Are there any questions for Brian? [No response] Okay. If not, we need a motion.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Without objection. All right. The authorization for foreign currency operations is approved. I need a motion to close the Board meeting.

MR. KOHN. So move.

CHAIRMAN BERNANKE. Thank you. All right. So we now have a joint meeting of the FOMC and the Federal Reserve Board. We turn to item 7, which is a briefing on financial developments, and I turn, once again, to our new Manager of the Open Market Desk, Brian Sack.

MR. SACK.¹ Thank you. A variety of factors affected financial markets over the intermeeting period but did not provide them with a consistent direction. Incoming economic data were generally seen as mixed, leaving market participants with a roughly unchanged forecast of economic growth going forward. Even in that environment, the prices of risky assets had been performing well over most of the intermeeting period. However, over the past two weeks, market participants had to digest several proposals for financial sector reform that created concern about the outlook for that sector and for the economy more broadly. In response, major U.S. equity indexes declined sharply, bringing them to a modest net loss since the last FOMC meeting, as shown in the top left panel. Measures of implied volatility on equity prices, shown in the top right panel, increased markedly last week, largely reflecting the uncertainty associated with the reform initiatives.

Corporate bonds, in contrast, rallied on net over the intermeeting period, as shown by the yield spreads in the middle left panel. It had appeared that the spreads were leveling out in the latter parts of 2009, but their tightening trend has strongly reemerged. The sizable narrowing of corporate spreads since early 2009 has been driven in large part by fundamental factors, including the shift in the economic outlook, the diminution of downside economic risks, and the improving access of corporations to capital markets. However, those fundamental factors explain only a portion of the movement, as a reduction of the risk premium has also played an important role. One measure of the risk premium for the high-yield index is shown in the middle right panel. As can be seen, it has come in sharply, but much of this movement was simply retracing the sharp increase in 2008. By this measure at least, the current risk premium does not appear unusually narrow by historical standards.

Issuance of corporate bonds has been quite strong, as firms continued to take advantage of the favorable financing conditions. However, other parts of credit markets remain much more restrictive, including parts of the securitized credit markets and bank lending. Spreads for commercial mortgage-backed securities (CMBS) have narrowed some of late, as shown in the bottom left panel, reportedly because investors are increasingly looking to these products to pick up yield. However, we have seen only a trickle of new issuance in this sector, and we do not know of any major deals that are likely to be brought to the market by the scheduled expiration date of the TALF in June.

Another area of the credit markets that remains tight is bank lending. Banks continue to be wary of taking additional credit risk onto their balance sheets, though we may be slowly reaching a turning point in that regard. The most recent survey of bank lending practices indicated that commercial banks generally ceased tightening standards on most types of loans. However, this comes after an unprecedented tightening of conditions, and any substantial improvement in lending conditions is likely to be slow, given the challenges still facing those firms. As shown in the bottom right panel, share prices for regional banks fared well over the intermeeting period, based in part on the view that the rate of deterioration of outstanding loans

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

may be slowing. However, share prices for larger banks fell back, especially after the recent reform proposals that would affect those firms.

As shown in your next exhibit, monetary policy expectations implied by federal funds and Eurodollar futures rates shifted down over the intermeeting period. This change reflected the mixed economic data as well as FOMC communications that were read as suggesting that the Fed's accommodative policy stance will remain in place for longer than anticipated. Nevertheless, the overall pattern of expectations remains the same—the market expects the Fed to begin raising the federal funds rate late this year and to take it to around 2 percent by the end of 2011. With the decline in policy expectations, the two-year Treasury yield fell modestly, on net, over the intermeeting period, as shown to the right. Longer-term yields ended the period about unchanged.

Many bond market participants have been discussing the possibility that longer-term yields could move up notably. They cite the risk factors that we have been discussing in recent months—namely, the heavy financing burden associated with large fiscal deficits and the challenges facing the Fed in terms of its expanded balance sheet and the political environment. Given those perceived risks, investors have paid an increasingly large premium for protection against a sizable increase in longer-term interest rates, as can be seen from the payer skew on swaptions, shown in the middle left panel.

Because many of the risks cited focus on longer-term inflation, it may be important to closely track break-even inflation rates relative to historical ranges. Forward break-even inflation rates from 5 to 10 years ahead have moved higher under both of the measures shown in the middle right panel. The Board measure, for example, had moved above $3\frac{1}{4}$ percent at one point over the intermeeting period before recently pulling back closer to 3 percent. The table in the bottom left panel compares the most recent readings of those two measures with the range observed over a period before the financial crisis, from 2002 to 2007. Even with the recent pullback, the current reading of the Board measure is above 89 percent of the observations in the historical period. The Barclays measure tells a more dramatic story, as the recent movements have pushed it to the upper end of its historical range.

As always, we want to be careful interpreting movements in break-even inflation rates. For example, it is possible that the divergence in the supply of nominal Treasuries and TIPS, shown to the right, is lifting break-even rates. One observation consistent with that view is that the nominal forward rate is well inside its historical range over the period considered in the table. Nevertheless, given the focus that the FOMC has placed on inflation expectations, the evolution of break-even inflation rates going forward certainly bears watching.

The next exhibit addresses the Fed's large-scale asset-purchase (LSAP) programs. The Desk continues to taper its purchases of MBS and agency debt, as shown in the top two panels. MBS purchases are right on track to meet the \$1.25 trillion target, but

the agency debt purchases have fallen behind their intended schedule because the volume of dealer offers at our operations has been relatively weak. Unless we move above our initial plan in order to make up ground, we could end up purchasing only \$170 billion or so, which we view as being sufficient to meet the objective of “about \$175 billion.”

Despite the slower pace of purchases, the spreads on agency debt and MBS remain tight, as indicated in the middle panels. An informal survey of market participants indicated that the vast majority continue to expect some widening of the MBS spread, on the order of 15 to 25 basis points, as our purchases come to a close. However, to date the evidence is consistent with the view that the effects on longer-term rates have been more strongly associated with the stock of our holdings rather than the flow of purchases. In that case, any effects that the purchases have had on longer-term rates should only slowly unwind as the SOMA portfolio shrinks over time.

The bottom left panel shows that the MBS market has been suffering from an unusually large volume of settlement fails in recent months. Recall that this market generally trades on a forward basis, in what is called the TBA market, where trades settle anywhere from one to three months ahead. Market participants who have sold securities in the TBA market have frequently been failing to deliver the securities on the scheduled settlement dates. In part, this pattern reflects that our holdings have reduced the floating supply of current-coupon TBA securities, making it more difficult for sellers to find securities to deliver. However, a more important factor has been the proximity of short-term interest rates to the zero bound, which significantly reduces the cost of failing.

I raise this issue because it has had implications for our purchase program. For these same reasons, market participants could fail to make delivery of the securities they have sold to us. Rather than accepting fails, we have been alleviating the problem by selling dollar rolls. In a dollar roll, the seller provides its counterparty with a security for an upcoming settlement date, under agreement that the counterparty will deliver back a similar security at a subsequent settlement date, typically one month later. By selling dollar rolls specifically to those who owe us securities at an upcoming settlement date, we in effect allow our counterparties to postpone settlement for one month in exchange for a small fee. We believe that it will be advantageous to continue using dollar rolls in this manner in order to settle all of the outstanding purchases under the LSAP program. This will provide the market with time to obtain and deliver the needed securities to us in an orderly fashion. The directive proposed in the Bluebook includes a sentence that is intended to explicitly recognize that this activity will potentially continue for several months after the scheduled completion of the MBS purchases in March.

Your next exhibit focuses on the Fed’s balance sheet. The volume of activity in our short-term lending facilities declined further over the intermeeting period, as shown in the top left panel. This pattern, of course, reflects the fact that the facilities

involve above-market rates for most borrowers, but it also reflects to a degree our efforts to encourage individual borrowers to develop alternative funding plans. On February 1, all of the facilities shown will expire except for the term auction facility (TAF) and the primary credit facility (the dark blue and the yellow areas in the figure). As indicated to the right, there is very little activity in the facilities that are set to expire. The market is not showing any strains associated with the termination of these programs. Indeed, as shown in the middle left panel, short-term funding spreads have not moved up at all and remain quite tight.

With the ongoing decline in the liquidity facilities, the dominant component of the balance sheet has become the outright holdings of SOMA assets, as indicated by the dark blue area in the chart to the right. Those holdings currently stand at \$1.9 trillion, out of the total balance sheet of \$2.3 trillion. These outright asset holdings present the most challenging issues for exiting from the current stance of monetary policy, as they do not automatically unwind in a timely manner. For that reason, market participants have been increasingly discussing the Fed's use of reserve-draining tools and asset sales.

To help gauge market expectations, we conducted an extensive survey that asked respondents about how they expect the FOMC to exit from its current policy stance. We expanded the survey beyond the economists who are typically included in our dealer survey, because many of you at the last meeting indicated that you don't actually trust economists. [Laughter] This may be a good time to remind you that most of you are economists.

This survey included 17 sell-side economists, 5 sell-side interest rate strategists, 18 buy-side investors, and 13 bank funding desks. As indicated in the bottom left panel, almost all of the respondents expected the Fed to use its temporary draining tools such as reverse repurchase agreements and term deposits as well as the IOER rate. More surprisingly, two-thirds of the respondents also expect asset sales to be used across the three types of securities. However, there was a very important distinction in the timing of these tools.

In particular, survey respondents overwhelmingly expected reverse repos and term deposits to be employed prior to the first increase in the federal funds target rate. As shown in the bottom right, the mean response expected those tools to come into use about two meetings before an increase in the target rate. Only 23 percent of the respondents expected the Fed to use the draining tools concurrently with the target rate, and less than 5 percent of the respondents thought the Fed would hike the target rate first and then drain reserves. Increases in the IOER rate were strongly seen as occurring at the same time as an increase in the target funds rate. In contrast, asset sales were overwhelmingly expected to occur after the first rate increase, if at all. As can be seen to the right, the mean response put sales of agency debt and MBS about a year after the first increase in the target funds rate.

The top left panel of your last exhibit shows the expected size of the various tools over time. Market participants expect reverse repurchase agreements and term deposits to be ramped up over the period between the second quarter of this year and the second quarter of 2011, to a level of about \$250 billion for each. Asset sales are expected to occur more slowly, consistent with the responses from the previous exhibit, and to remain relatively small in size.

We also asked about the speed at which the temporary draining tools could be increased if necessary—specifically, what amount could be implemented over an intermeeting period without causing significant market disruption. Respondents saw a surprisingly high capacity for a quick ramp-up, including \$200 billion each for reverse repos and term deposits. The ability to increase capacity quickly may explain why they on average saw these tools as being implemented only two meetings before an increase in the target funds rate.

Views about the redemption policy to be taken with SOMA assets are described in the middle left panel. The vast majority of respondents expect the Fed either not to reinvest or to reinvest only partially its holdings of agency debt and MBS. That is not surprising, since the approach of redeeming those assets is already under way. More surprising, participants saw redemptions of Treasury securities also as a distinct possibility, with only 25 percent expecting full reinvestment.

Respondents' views about the path of temporary draining policies, asset sales and redemptions, and other draining mechanisms determine how they expect the path of reserves to evolve ahead of the first change in the target funds rate. The middle right panel shows the distribution of responses for the expected level of reserves at the time of the first target funds rate hike. As can be seen, there is a wide range of views. The distribution is relatively uniform from \$400 billion to \$1 trillion, with a few outliers instead expecting reserves to get down to very low levels.

As shown in the bottom left panel, the use of reverse repos and term deposits was seen as achieving a variety of purposes. A minority of respondents thought that draining reserves with these tools would directly influence bank lending, for reasons independent of the implications for the path of short-term interest rates, while more than half thought it would help to contain inflation expectations. However, the most definitive result was that the use of these tools was expected to improve the FOMC's control of short-term interest rates. That effect is quantified further in the bottom right panel. We asked respondents to gauge the degree to which the effective federal funds rate might fall below the IOER rate as the IOER rate is increased. To be sure, respondents probably have considerable difficulty predicting these outcomes, much as we do, but their estimates may still be informative. As can be seen, the expected gap varies with the level of reserves anticipated. At the current level of excess reserves of around \$1 trillion, the interquartile range of market participants' views spanned from 15 to 29 basis points for the IOER rate at 1 percent and went as high as 50 basis points for the IOER rate at 2 percent. At the other end of the spectrum, respondents expected the effective federal funds rate to remain very close to the IOER rate if the

level of excess reserves were to return to its historical range of \$0 to \$25 billion. In between these outcomes, if roughly half of the reserves were drained, market participants expected the effective federal funds rate to remain within 25 basis points of the IOER rate.

Overall, the survey responses, I hope, provide some useful backdrop for the discussion of policy strategy that will take place after the briefings by Jim Clouse and Spence Hilton. Thank you. That concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. Are there questions for Brian? President Fisher.

MR. FISHER. Brian, I want to go back to your chart 4 on exhibit 1. I just have a question. If I understand it correctly, one of the great things that has happened is that people have used the high-yield market and the rally we have had in the high-yield market to rebalance their balance sheets. If my numbers are correct, above 70 percent of the issuance in 2009 was used for that purpose and to push out maturities beyond that wall of maturity in 2012 that we were kind of worried about. But if my soundings are correct, toward the end of the year we began to see some old behaviors reassert themselves—payments in kind, self-payment of dividends, covenant-light issuance. So this is just a judgmental question. Are we reaching a point at which some of this old, abusive behavior is beginning to reassert itself? I am just curious as to what you are detecting, and is my observation correct?

MR. SACK. I think we are hearing reports of those types of activities at least at the fringe—issuance to make dividend payments and other structures that may be somewhat questionable. I think we're perhaps at the edge of worrying about some of that. Those instances are pretty isolated; they're certainly not widespread at this point. And in many ways we are not back to the froth in the markets that we saw before. We don't see that froth in terms of financing abilities. Repo haircuts are still relatively high and differentiated across asset classes. We don't see it in the complexity of structures. We don't see it in the intent of the issuance broadly. So

we are certainly not back to where we were, but I think we are starting to hear more and more reports of those types of activities. Very much like other valuation measures, the valuation measure I showed suggests that we have moved a long way back, but we are not to levels that look overextended. But it is certainly putting us back into that historical range where I think we need to pay more attention to valuations and then to worry about things like that. And these anecdotes about activity suggest that is where we are as well, getting back to the fringe of a range where we want to pay attention, but not at a level that is alarming today.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Brian, you spent a lot of time on the survey results, and I guess my question about that is, What do you see as the repercussions of this? I mean, a lot of this to me reads as though I asked financial market participants what they expected us to do, and they said, “Well, we are not really sure what the Fed is going to do, but we’ll fill in some answers.” I guess the key question would be, Is there anything that is precluding us from saying, “Okay. We are going to adopt what we think is the optimal policy,” inform the markets, and then they will fall into line. Then if you redid the survey, they would come out at whatever the Committee said.

MR. SACK. I am certainly not suggesting that you need to choose a strategy that follows the market’s expectations. As I said, I think that the market is increasingly looking for guidance on what the strategy will be. So I do think it’s important to begin to formulate a strategy and communicate it, but it certainly does not have to match market expectations, and you could shape those expectations with your communications.

I do think, though, for some questions that hearing the views of market participants may be quite informative—to choose one example, gauging the possible gap between the funds rate and the IOER rate. As we highlighted in the memo, there is no sample; there are no data from which to empirically investigate that relationship. We have never been in an IOER regime with this level of reserves where we have tried to increase the IOER rate. So there are no empirics we can throw at the question, and we are left to conjecture what may happen. In that regard, it is probably useful to talk to market participants who are very involved in funding markets and who have their own views on balance sheet usage, arbitrage activity, and the types of things that will affect that spread to hear what they think. So I do hope you can extract some information from how markets may behave, in addition to just understanding what they expect we are going to do.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. In the briefing on balance sheet and market developments that you distributed, Brian, I came across the following sentence I'd like to read. "Market participants have suggested that the full potential of supporting the agency MBS market has already been reached and that further purchases would continue to reduce available MBS supply and endanger smooth market functioning going forward." It has been my experience on the Committee that the System Open Market Account Manager and the New York Fed in general are avidly interested in ensuring smooth market functioning. So I half expected to have you come in and recommend that we suspend our mortgage-backed security purchase program at this meeting. So I wanted to ask you why you didn't do that. And do you agree with this assessment?

MR. SACK. Well, I am sorry to disappoint you. [Laughter] I agree with the assessment. There is no doubt that early in the program, when markets were strained, our purchases helped to

restore market function and improve liquidity. Then at some point, that relationship switched sides, and our purchases began to impair liquidity as we removed so much supply from the market. And that's continuing because the amount of issuance in the market has been so light. So even though our purchases are winding down, we continue to put a lot of pressure on the market. I think in general the market is functioning okay. Trading volumes are decent. Other measures of liquidity are okay. But we are seeing these fails, and certainly our presence is noted. I do think the market will function better as we back away from it, and I think that has been the tradeoff. We have wanted to have sizable purchases for other purposes—because we thought they helped to lower longer-term interest rates—and perhaps toward the end of the program that has come at the cost of some modest impairment of market functioning. But we are on a course of tapering these purchases, and they will soon be over. So I think probably from this point forward the least disruptive path to the markets is just to continue what they expect and be out of the markets by the end of March.

MR. LACKER. If I could follow up, Mr. Chairman—in your presentation you mentioned the practice of dollar rolls, that when someone is going to fail to deliver it to us, you essentially say, “Oh, you can wait a month to deliver it.” In this context, given the timing—and we're going to hear a briefing a little later that is going to include a discussion of the possibility of asset sales—is it conceivable that we dollar roll a bunch of delivery obligations into a time period at which we are also selling assets or these MBS ourselves? And would you advise us against that? Would it come to a point at which you would want to just give up on the dollar rolls and let them fail to us?

MR. SACK. I don't see anything necessarily wrong with that. I think we should make the dollar roll decision based on what we think is best for the market for settling the purchases

that are already scheduled through the end of March. What we are proposing is modest dollar rolls just to give the markets a chance to smooth out settlement for several months. As I said in my remarks, we won't be conducting dollar rolls more than a few months after the end of the purchases.

I think the decision about whether to sell assets is different, and you could make that no matter what we are doing with the dollar roll book. That decision depends much more on whether you think the market can handle the Fed's putting duration and prepayment risk back into the market. The market is already going to have to adjust to find purchasers for the amount of issuance to replace the Fed as we back away, and the issue is, Do you also want to sell assets and force the market basically to find an even larger amount of purchasers, and what kind of price action, what kind of yield movement, will be required to accomplish that?

CHAIRMAN BERNANKE. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. Brian, when looking at the spreads in charts 15 and 16 that we've been talking about, MBS and agencies, we can tell a bunch of different stories in explaining why these spreads continue to tighten even as the tapering is going on. I wonder what the spreads are for Federal Home Loan Bank paper or Farmer Mac paper as securities where the government is most certainly involved and which have different degrees of explicit or implicit support but where the Fed is less involved. I wonder if there were any lessons learned from a comparison of Fannie and Freddie paper to those or any other sort of quasi public-backed entities.

MR. SACK. I think it is a great suggestion. I don't have the answer at my fingertips, but I agree that makes sense. As you know, there is much debate taking place in the markets and in the academic community about how rich or how narrow these spreads are. Could it reflect a shift

in the government guarantee of these entities? We have been skeptical that that shift in the guarantee accounts for all of the movement that we have seen in the spreads, but I agree. The more measures we can look at to confirm that would be useful.

MR. WARSH. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. Brian, I was wondering if in your survey there was an open response section in which the dealer community could talk about whether the fed funds rate was an appropriate policy target when volume is small and GSEs are a significant part of the market. Did anybody venture as part of an open response that they thought that the policy target at least during this transition period would not be the fed funds target? And just a second part to that, when I look at the implied fed funds rate in your chart 7, presumably that is both what they expect us to do and our ability to do it. Given the very steep slope to the fed funds rate, it seems that they are not that concerned about our ability to actually get the fed funds rate up in a reasonable time frame. So given the discussion we are going to have in the next part of this meeting, would you draw that inference from this and your discussions or not?

MR. SACK. To start with the second question, it's hard to definitively draw that inference because, of course, the IOER rate could be set in a way to produce that fed funds path even if the spread between the two measures widens out. So I don't necessarily want to draw any inference about the tightness of the fed funds–IOER spread just from the expected path of the fed funds rate. On the first issue, yes, we had an open comment section. It is actually in the summary of the survey. Broadly, I think there is a lot of discussion about what the right policy instrument is and whether the federal funds rate will be kept as a policy instrument. And I think

a lot of it focuses on whether the IOER rate now should be considered the policy instrument. So my take is that the market does see this as an open issue at this point.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Brian, this question may be more appropriate for the next discussion, but looking, again, at your last chart, number 30, first to make sure I understand what this is telling me—if we had set the interest rate on excess reserves at 200 basis points and had \$1 trillion of excess reserves, then fed funds would likely trade between 20 and 50 basis points below the interest rate on excess reserves. Is that right?

MR. SACK. That is correct.

MR. LOCKHART. Preserving, in effect, the kind of situation we have today. And assuming for the moment that we were at the stage where we were trying to implement a corridor system and the fed funds rate target would be above the interest rate on excess reserves, then the gap between where fed funds were trading and where the target would be could be 75 basis points or more conceivably, worst case. Is that a credibility problem? If that situation persisted, how would the market react to a chronic situation of setting a target and being that much off the target?

MR. SACK. I would imagine that such a situation would be quite confusing to the markets because it is not clear what the federal funds target rate actually means in that case. So it seems to me that, if the Committee maintained a federal funds rate target as its operating instrument, the market would expect the Fed to set the IOER rate as needed to hit the federal funds rate target, and that given the patterns indicated in the table, that may well require setting the IOER rate above the federal funds rate target.

MR. MADIGAN. Or it would involve adjusting the quantity of reserves sufficiently.

CHAIRMAN BERNANKE. Okay. Any other questions? If not, we are going at this point to have a briefing and discussion on exit strategies. Let me propose an organization for the next part of the meeting and see if everybody is okay with it.

We'll first have a briefing by Bill Nelson on discount window facilities and the TAF, and he will make recommendations about how we might proceed on these two areas. After his briefing we can have Q&A. We will then have a briefing by Jim Clouse and Spence Hilton on broader issues of removing policy accommodation, sequencing of excess reserves, sequencing of draining operations, asset sales, use of the interest rate on excess reserves, and so on, followed by more Q&A. I propose that, at that point, we just do a full go-round because everyone is going to want to give their views. Is that acceptable to everybody? On the full go-round we will ask your views both on the discount rate and on the sequencing and structure of the exit strategy.

Let me say, just so I don't forget, that, first of all, I will, of course, have the semiannual monetary policy testimony the last week of February, and we just learned yesterday afternoon that the House Financial Services Committee would like to have a hearing on the Federal Reserve's exit strategy on February 10. So we will have at least two opportunities to provide some communication here. I think we will need to have some sense around the table about what we are comfortable with my saying and what we are not comfortable with my saying, but I just want to put that on the table because we will have an opportunity to report to the public some of what we conclude today.

All right. Then without further ado, let me call on Bill Nelson to brief us on the discount window facilities.

MR. NELSON. Thank you, Mr. Chairman. I will discuss the staff's recommendations for normalizing the terms on the primary credit facility and reducing TAF auction amounts to zero. We are not requesting any decisions from the Board at this time.

Turning first to primary credit—primary credit was established in 2003 as a no-questions-asked lending facility available only to sound financial institutions as a backup source of funds. In order to encourage institutions to use the facility as a backup funding source without a need for the Federal Reserve to administer credit requests, the funds were provided at an above-market rate and generally on an overnight basis. When the facility was established and during the years prior to the financial crisis, the primary credit rate was set at 100 basis points over the target federal funds rate. Analysis of the available information had suggested that a 100 basis point spread would make primary credit at least a bit more expensive than similar funds for almost all depository institutions. These terms on primary credit appeared to have been largely successful in accomplishing the Federal Reserve’s objectives for the program. Except in rare instances, depository institutions used the facility as a backup source of funds and appeared to be willing to use primary credit when the federal funds rate rose above the primary credit rate.

Easing the terms of primary credit was one of the Federal Reserve’s first responses to the financial crisis. On August 17, 2007, the Federal Reserve narrowed the spread of the primary credit rate over the FOMC’s target rate to 50 basis points and lengthened the maximum maturity to 30 days. On March 16, 2008, the Federal Reserve lowered the spread to 25 basis points and extended the maximum maturity to 90 days.

The substantial easing in the terms of primary credit was a necessary step to provide liquidity to banks during the financial crisis. However, there is now a significant misalignment between the terms of primary credit and the intended use of the facility in routine circumstances. In particular, primary credit is too inexpensive for the interest rate alone to motivate depository institutions to use the facility as a backup funding source, and loan maturities longer than overnight encourage depository institutions to use primary credit as an ongoing funding source. Currently, about 20 depository institutions have been borrowing primary credit continuously for over three months, and five have been borrowing for more than a year. A branch of Depfa, a German bank, which alone accounts for more than 90 percent of primary credit, has been borrowing continuously for 15 months. Several Reserve Bank discount officers have expressed concerns that some depository institutions have become overly reliant on discount window funding.

With conditions in bank funding markets approaching pre-crisis levels, the staff recommends that the terms on primary credit be adjusted back toward their pre-crisis configuration. The Federal Reserve took a first step in that direction on January 14, when the maximum maturity on primary credit loans was reduced to 28 days. A second step in normalizing the terms on primary credit could be an increase in the spread between the primary credit rate and the top of the fed funds target range to 50 basis points, which would set the primary credit rate at 75 basis points if the target funds rate is unchanged. In one scenario for such a move, the Chairman could foreshadow an increase in his monetary policy testimony in late February; if they so

desired, Reserve Bank boards of directors could then recommend an increase; and the Board could approve the recommendations shortly thereafter. Any increase could be announced using language that made it clear that the move was not a signal about the outlook for the stance of monetary policy. A third step in normalizing the terms on primary credit could then be to shorten the maximum maturity on primary credit loans to pre-crisis levels—overnight for all but the smallest institutions—perhaps in early spring. The announcement of such a change could indicate that the Board expects depository institutions to use primary credit as a backup source of funds.

The Board and Reserve Banks might elect to defer any further tightening of the primary credit rate spread for several months in order to assess the experience with a 50 basis point spread. If a spread of 50 basis points is sufficient to limit use, it may be preferable to a wider spread, in part because it might help reduce stigma: A narrower spread would likely result in somewhat more frequent use of the window, which, by making borrowing less unusual, might help overcome the negative views about borrowing on the part of bank management, supervisors, and market participants.

Turning now to the term auction facility (TAF)—on January 11, the Federal Reserve auctioned \$75 billion in 28-day TAF credit. The auction was again substantially undersubscribed, with depository institutions requesting only \$39 billion. As a result, the funds were provided at the minimum bid rate of 25 basis points, the rate paid on excess reserves. The Board has indicated on its website that there will be an auction on February 8, but no amount has been specified.

In light of the continued improvement in bank funding markets and the resulting diminished demand for TAF funds, the staff recommends that TAF auction amounts be reduced to zero relatively quickly. In particular, the staff recommends that \$50 billion be offered in February and \$25 billion in March and that the auctions be discontinued subsequently. Reducing TAF auction amounts to zero would be consistent with the ongoing normalization of Federal Reserve liquidity operations, would ensure that no bank currently using the facility remained reliant on TAF funding, and would help to reduce reserve balances modestly in advance of a period in which the FOMC might be tightening policy. The staff also recommends that the minimum bid rate on the TAF be increased to 50 basis points if the primary credit rate were increased to 75 basis points so as to preserve the spread between the primary credit rate and the TAF minimum bid rate.

An alternative approach would be to auction small amounts of TAF credit on an ongoing basis so that the TAF could be ramped up immediately in a contingency. However, responses to a survey of the Subcommittee on Credit Risk Management and feedback from the Federal Reserve Bank of New York staff members who conduct the auctions suggest that the TAF could be ramped up from zero with a delay of at most a couple of weeks. Because regular discount window credit, potentially at a reduced rate, would remain available as a first line of defense against heightened credit strains in the early days of a severe crisis, the added benefit of auctioning a

small amount of TAF credit on an ongoing basis might be less than the benefits of reducing TAF auction amounts to zero for the intermediate term.

Even if the auction amounts are reduced to zero, the TAF would remain authorized in Regulation A. Whether to have a permanent TAF and, if so, in what form is an issue that could be addressed further in the future, when the Federal Reserve's post-financial-crisis monetary policy framework becomes clearer. That concludes my prepared remarks.

CHAIRMAN BERNANKE. Thank you. Do we have questions for Bill? Governor Kohn.

MR. KOHN. Thank you. Bill why did you decide to wait to change the maturity from 28 days to 1 not until the spring? Was it to keep it lined up with the TAF? Why not do both the rise of the spread and the narrowing to 1-day maturity at the same time?

MR. NELSON. I think it was just to continue our process of gradually removing our liquidity accommodations. It seemed more pressing to raise the discount rate spread a bit to get some daylight between the market rates and the rate that we are charging and encourage institutions to depart. That moving first just meant making the second adjustment later.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. In the original memo I thought you also proposed—maybe I just missed this in your commentary—that we withdraw the “renewable on request” clause. Is that correct?

MR. NELSON. That's right. That would, in some sense, send the message that we are looking for primary credit now to be used again as a backup source of funds.

MR. LOCKHART. Wouldn't keeping the “renewable on request” clause conceivably have the effect of treating this stigma problem? It is “no questions asked.”

MR. NELSON. Yes, and primary credit was already renewable upon request. It was a no-questions-asked facility. Our internal administrative guidelines, which we put together before

the financial crisis, recognized, however, that for a large institution that had a variety of sources of funds with a primary credit rate of 100 basis points over the target, borrowing several times in a row for a long period suggested that perhaps they didn't, in fact, have access to alternative funding sources. So there is just inherently some tension between operating it as a no-questions-asked facility and the requirement that it be used as a backup funding source if we see repeated uses of credit. That situation was somewhat ambiguous and would remain somewhat ambiguous in the future.

MR. LOCKHART. The way you proposed this as an incremental step—I guess to see if there is some adverse reaction that we didn't anticipate before probably going back to the full 100 basis point spread—what adverse reaction are we concerned about?

MR. NELSON. The reason we recommended observing the 50 basis point spread is that there are costs to having too high a spread as well as costs to having too low a spread. If the spread is too high, the primary credit is a less effective facility for limiting spikes in the federal funds rate. It is also a less helpful facility for institutions to use as a backup liquidity source. When we chose a spread of 100 basis points at the outset and used that, it worked fairly well. Nevertheless there was a fair amount of uncertainty, and there remains uncertainty, as to what the minimum spread is that could enable the spread alone to encourage institutions to use it as a backup funding source. So it might be a good idea, as we move back up, to observe what happens at 50 basis points to see if that spread alone is sufficient to encourage institutions to use it as a backup funding source.

MR. MADIGAN. There has been at least some evidence in the financial crisis that 50 basis points could be enough to achieve the goals. You may remember a little chart in the

memo that illustrated that it was only when the spread was reduced to 25 basis points that borrowing really began to move up a lot.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. This is just a follow-up to Governor Kohn's question. What is the cost of having the minimum bid on the TAF be the primary credit rate?

MR. NELSON. At this point there is probably little cost one way or the other. But because the staff is recommending that the TAF amounts be reduced to zero quickly so that they would be at zero in two months, there did not seem to be a lot of benefit to making that change at this time.

MR. ROSENGREN. It is just that, given the similarity of the programs, getting a lower rate seems a curious characteristic for longer-term financing.

CHAIRMAN BERNANKE. It's just a question of logistics here. An option would be to announce, say, for the last auction.

MR. ROSENGREN. And so if you time it simultaneously, it's immaterial.

CHAIRMAN BERNANKE. I think your point is right that it seems a little incongruous to have the TAF at a lower rate than the discount window, but it is just logistics that we could make that work.

MR. ROSENGREN. Okay.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. I think my question was answered. I really wanted to pursue the notion, when we think about what the penalty rate should be, of some theory that tells us what the right spread is—whether it is 50, 100, or 150 basis points. It seems to me that we don't really have a lot of evidence on that point. I just wondered. But I think you and Brian both answered my

question of what it is we know—and it might not be very much—but it seems to me that, if we think 100 is the right spread, then we ought to get there quicker rather than not. But you answered my question, so I won't ask it again—unless you had something more to add onto it.

CHAIRMAN BERNANKE. Other questions? Governor Duke.

MS. DUKE. I run the risk here of demonstrating that I'm totally confused on this, but we weren't paying interest on reserves when we started lowering these spreads, were we?

MR. NELSON. That's right.

MS. DUKE. How did those two go together, and when did the interbank fed funds market begin to disappear? My question is, Is there a possibility that some rate will be necessary to induce banks to lend to each other? In other words, the 25 basis points are certainly not at this point enough to induce banks to lend to each other. So it may not be an incentive to leave the market so much as an incentive for somebody else to enter the market and offer to lend those funds at a cheaper rate.

MR. NELSON. I think that is probably a question more of where to set the IOER rate than the primary credit rate, if I understand your question correctly.

MS. DUKE. Well, I am talking about the spread on it. For instance, if a bank can sell unlimited funds to us at 25 basis points, at what rate are they willing to sell them to another bank? Where do they have to bid it to be able to borrow from other banks? At this point, the banks are not lending to each other, correct? They are borrowing from us, and they are lending to us, but not to each other.

MR. MADIGAN. Governor Duke, I think we see that primarily as a consequence of the very large level of reserves in the system and the fact that they have IOER as an outlet for their funds or a place where they can leave their funds and earn interest because bank borrowing from

the discount window is relatively infrequent. And we have assumed it will become even more infrequent. I think at the margin that does not have much effect on their willingness to lend to one another because it is set at a penalty. So it is not a source of funds to lend to other banks.

MS. DUKE. Okay. Thank you.

MR. NELSON. As we move back to a more normal configuration, it will be important that the primary credit rate be up and above market sources of funds if our objective is to have institutions lending to one another and have the market operate initially rather than their coming to us and borrowing.

MS. DUKE. Yes. The only condition I can see where we actually have a fed funds rate is when they are actively lending to one another. Thank you.

CHAIRMAN BERNANKE. Other questions? Okay. When it comes to the go-round, we will be interested in your advice on whether to raise the primary credit rate and, if so, when. Do we want to do it intermeeting, for example, along the lines we have discussed, or do we want to delay that? How would you like to proceed with that? Then on the TAF, are you comfortable with the recommendations to reduce the auction sizes but either keep in reserve what we are going to do after it goes down to 25 or state now that it is going to zero? Those are two options, but we would appreciate your comments on any aspect of that. Let me now call on Jim Clouse to brief us on tools for removing policy accommodation.

MR. CLOUSE.² Thank you. I'll be referring to the materials titled "Materials for Briefing on Strategies for the Removal of Policy Accommodation." As background for this topic, the staff distributed a package of materials to the Committee last week, including two main policy memos and four supporting memos. I will summarize some of the background material from the supporting memos, and Spence Hilton will then continue with a summary of the key policy issues regarding asset sales and the sequencing of the use of reserve-draining tools.

² The materials used by Messrs. Clouse and Hilton are appended to this transcript (appendix 2).

As noted on page 1, staff members at the Federal Reserve Bank of New York have been working to enhance the System's term reverse repurchase capacity by expanding the range of collateral to include agency MBS and by expanding the list of counterparties for reverse RPs to include institutions beyond the primary dealers. The capability to conduct term reverse RPs against agency MBS with primary dealers is expected to come on line in late March. An initial set of expanded counterparties, likely including money funds, is expected to be available in late spring.

On the term deposit facility (TDF), a *Federal Register* notice was published at the end of December, and public comments are due next Monday. The staff will review the comments and prepare a final proposal next month, and the Board could issue a final rule in March. Meanwhile, staff members across the System continue to work toward implementation. Assuming that all goes well, the TDF could be fully operational in May of this year.

The staff has also begun to analyze the possibility of extending the existing overnight reverse RP arrangement with foreign official accounts—the so-called foreign RP pool—to include a term reverse component. This work is just beginning, but our initial estimate is that term reverse RPs with foreign official accounts could drain \$100 billion or so of reserves, on net. That capability may be available by July.

Finally, the staff is considering resuming work on reserve collateral accounts (RCAs). Reserve collateral accounts would enable banks to pledge balances held in special accounts at the Federal Reserve as collateral to secure borrowing from the GSEs and other lenders in the funds market. GSEs could potentially utilize RCAs in their overnight lending transactions with banks rather than operate through the brokered federal funds market. The GSEs' lending in the federal funds market currently accounts for as much as 90 percent of the activity in the federal funds market and has generally taken place at rates below the IOER rate. Thus, removing those transactions could serve to tighten the link between the interest rate paid on excess reserves and the federal funds rate. However, the federal funds market would likely be smaller and perhaps more idiosyncratic, at least in the near term. A System steering group is being formed to develop a plan for the implementation of RCAs. The staff should be able to provide a clearer sense of the necessary steps and time required to implement RCAs by the time of your next meeting.

Page 2 reviews staff projections of the potential to drain reserves with these various tools. These projections, which were described in a memo circulated ahead of the meeting, are quite speculative, given that the tools are still being developed and have never been used to drain reserves on a large scale. That said, as shown in the shaded column, under fairly conservative assumptions about ramping up the various reserve-management tools beginning in March, it might be possible to reduce the quantity of reserve balances by nearly \$1 trillion, to a level of about \$200 billion in the fourth quarter of this year. As shown in the columns at the right, these projections assume that the Federal Reserve begins to ramp up reverse RPs in March, implements the TDF in May, and implements reverse RPs with foreign accounts in July. These

projections suggest that the Committee could drain a very sizable quantity of reserves over a fairly compressed period once the tools have been fully developed. As a caveat, this exercise focused solely on the operational capabilities of the tools. It did not attempt to analyze the possible market effects or communication issues that could arise in executing draining operations of this magnitude.

The capability to drain significant quantities of reserves bears on two questions addressed on page 3. The memo focusing on the federal funds rate and the reserve market raised two key issues for the exit strategy—the quantity of reserves that must be drained in order to bring the fed funds rate into closer alignment with the existing interest rate on excess reserves of 25 basis points and the extent to which the funds rate will respond to changes in the IOER rate at any given level of reserves. On the first question, the authors of the memo estimated various specifications for a reserve demand curve and, by all accounts, the demand curve appears to be very flat at the current elevated levels of reserve balances. The scatter plot to the left illustrates this effect quite clearly. Based on the econometric estimates and the visual impression from the chart, it appears that it might be necessary to drain several hundred billion dollars of reserves in order to push the funds rate up to the existing IOER rate.

The second question—the extent to which the federal funds rate would respond to an increase in the IOER rate—is even more challenging. Empirical evidence that can be brought to bear on this question is scarce because the IOER rate has been constant at $\frac{1}{4}$ percent since December 2008. However, the Desk’s survey distributed last week provides some indication of the range of market participants’ views on this issue. The table to the right is a variant of the table that Brian showed, only reporting the mean survey responses rather than the range of responses. As can be seen, respondents believe that the spread between the IOER rate and the funds rate would widen from its current value of around 12 basis points as the IOER rate is increased. In addition, they believe that the degree of widening would be a function of the level of reserve balances. For example, as shown in the first column, with reserve balances at \$1 trillion, the spread between the IOER rate and the funds rate might widen to 44 basis points if the IOER rate were raised to 2 percent, thus leaving the level of the funds rate at about 1.6 percent. As shown in the second column, respondents expect that the widening of the spread of the interest rate on excess reserves over the funds rate would be roughly cut in half with a level of reserve balances at \$500 billion and essentially eliminated if balances were returned to pre-crisis levels of \$25 billion.

As noted on page 4, an important issue the Committee may face during the exit period is the possibility that the federal funds rate may not be as tightly connected with other short-term interest rates as in the past. It is worth emphasizing that this has not been the case to date. As shown in the chart at the right, while the funds rate over the last year has diverged from the IOER rate, it has remained highly correlated, both in levels and differences, with other overnight rates. However, with extraordinarily high levels of reserve balances and new tools being employed, it is possible that the funds rate could become more idiosyncratic during the exit period. In addition, if reserve collateral accounts are implemented and the link between the interest rate on

excess reserves and the fed funds rate is tightened, active trading in the federal funds market could fall to very low levels. Such possibilities might lead the Committee to consider targeting alternative rates.

As noted in the memo, two essential attributes of a policy instrument are controllability by the central bank and a predictable relationship with other short-term interest rates. With these attributes in mind, the memo examined a range of market rates as possible alternatives to the overnight federal funds rate, including overnight Eurodollar and LIBOR rates, overnight repo rates, and term money market rates. To a first-order approximation, targeting any of these alternatives would be roughly comparable to targeting the federal funds rate given that, at least in ordinary times, the degree of correlation among these rates is very high. In a crisis period, however, these potential measures might behave very differently; for example, as noted by the blue dashed line in the chart, the general collateral repo rate dropped sharply at the peak of the crisis in 2008 as demand for general Treasury collateral intensified, while the federal funds rate and LIBOR rates increased sharply as lenders became wary of taking on uncollateralized exposures.

Another possible choice reviewed in the memo is simply to choose the IOER rate as the primary policy instrument. The IOER rate is obviously perfectly controllable, but whether it will be an effective anchor for money market rates generally is an open question. Moreover, the IOER rate does not provide any market guidance for the conduct of open market operations. The Committee could direct that the Desk conduct open market operations so as to keep other short-term rates near the IOER rate, but then it presumably would need to provide guidance about which rates should be close to the IOER rate and perhaps also how close is close. Selecting the IOER rate as the principal index of the stance of policy also has some potentially awkward governance issues in that, by statute, the Board rather than the FOMC sets the IOER rate. The bottom line is that a number of potential alternatives to the federal funds rate are available, but none emerges as the clearly preferred choice.

The memo from the International Finance Division summarizes foreign experience with interest on reserves, the subject of page 5. Five of the countries reviewed currently have very sizable levels of excess reserves—although not nearly as large as in the United States—and the rates on their redeposit facilities have generally established effective floors on their interbank rates. The experience of the Bank of England may be the closest to that of the United States. As detailed in the memo, the SONIA rate monitored by the Bank of England has hovered 5 to 10 basis points below the rate of remuneration on excess reserve balances since early 2009. In other countries, the interbank rate is either above or just slightly below the interest rate on excess reserves. In general, the effectiveness of the floor on rates across countries seems to be related to the scope of access to central bank accounts.

Foreign country experience also sheds some light on the question addressed on the previous page concerning the extent to which an increase in the IOER rate can be used to tighten policy. The Norges Bank tightened policy effectively by 50 basis

points in late 2009 by increasing its rate of remuneration on reserves despite still-elevated levels of reserve balances.

On balance, foreign country experience suggests that interest on reserves can be used to set an effective floor on interbank rates and that policy can be tightened by raising the remuneration rate on excess reserves even when aggregate reserve levels are quite elevated. However, the memo also notes that foreign experience may be an imperfect guide in judging likely outcomes in the United States. The fact that the floor on rates in the United States is less effective than in many other countries raises questions about how much one can infer from their experiences in tightening financial conditions.

Page 6 focuses on the longer-run balance sheet management issues that the Committee will eventually need to consider. One long-run issue concerns the framework for monetary policy implementation. In discussing these issues at the April 2008 FOMC meeting, the Committee seemed comfortable with the idea of eventually moving away from a system that depends heavily on mandatory reserve requirements and either adopting a corridor framework that utilizes a simpler reserve-accounting framework or moving to a floor system that dispenses with the reserve-accounting framework altogether. The staff's sense is that the exit period will likely provide valuable empirical evidence for judging how well floor systems can be made to work. Moreover, the Committee could move toward any of these possible systems once the level of reserves has been returned to a more normal level.

Other long-term balance sheet management issues include the long-run size and composition of the balance sheet. Historically, the size of the Federal Reserve's balance sheet has been driven largely by trend growth of currency in circulation. However, given the authority to pay interest on reserves and the availability of new draining tools, the Committee could, in principle, expand and contract the size of the balance sheet as a means of easing or tightening financial conditions in addition to adjusting the target federal funds rate. In addition, the Committee might wish to set more-specific goals for the size of the portfolio in the steady state. The Committee will likely also wish to consider its desired composition of the balance sheet. A key question here is whether the Committee wishes to return to a Treasury-only portfolio. The staff memo noted that holding non-Treasury assets potentially involves a number of complications for a central bank. In addition, the maturity structure of the portfolio may be worth revisiting. In particular, a short-maturity portfolio may be desired to provide for flexibility in meeting any potential future increase in loans or other assets. Spence will continue our presentation.

MR. HILTON. Thank you, Jim. The current accommodative stance of monetary policy has been marked by the purchase of nearly \$1¾ trillion of mostly longer-term securities under the purchase programs and the maintenance of near-zero levels of short-term interest rates since December 2008. In devising the exit strategy from this policy stance, two key decisions that will have to be made over the near term are, first, the approach to be taken with regard to sales and redemptions of domestic

SOMA assets and, perhaps most crucially, whether sales might be used as a discretionary policy tool and, second, the appropriate sequence to be used in draining reserves around the time of a first increase in short-term policy rates—the target federal funds rate and the interest rate paid on excess reserves.

These two issues are interrelated as, for instance, decisions about asset sales would affect reserve levels, which could be relevant for any draining of reserves associated with a hike in policy rates. However, these issues will be addressed separately. This treatment is consistent with a view that the *temporary* reserve-draining tools being developed, and not sales and redemptions of SOMA assets, would likely be the principal tools used to achieve any large-scale reserve reductions in the near term. For reference, pre-crisis levels and expected peak levels of SOMA assets and reserves are shown in the top panel in exhibit 7. And to provide a sense of maturity liquidity in the portfolio, also shown (in red) are potential cumulative redemption amounts for the different asset types looking ahead several years.

Turning first to possible strategies for reducing SOMA assets, sales and redemptions could be motivated by three main considerations, which are listed in the middle panel in exhibit 7. First, they reduce excess reserves, which could improve the ability to control short-term policy rates, although as just noted, they might not be the principal tool employed for this purpose. Second, sales and redemptions would reverse the effects of the purchase programs, putting upward pressure on longer-term interest rates and tightening financial market conditions independent of any changes in the outlook for short-term interest rates. We should also note that shrinking the balance sheet and reducing excess reserves could conceivably operate on the economy through other channels, such as by their impact on inflation expectations more directly. And third, these could be used to return the composition of the SOMA to include Treasury securities only, which policymakers may view as desirable for restoring credit neutrality in the SOMA.

In principle, the use of sales and redemptions to operate directly on longer-term interest rates provides the FOMC with an additional discretionary tool for influencing economic conditions, beyond its traditional approach of controlling short-term interest rates. A substantial reduction in our holdings of longer-term assets would likely push up long-term interest rates beyond any movement associated with the expected path of short-term rates, operating through a portfolio balance channel. Staff work using alternative methodologies suggests that the purchase programs have held down a range of longer-term interest rates by anywhere from 50 to 80 basis points through portfolio balance channels and that flow effects may account for an additional 25 basis points on mortgage-backed security rates. SOMA portfolio reductions might be expected to be able at least to reverse these movements. Under this framework, shrinking the balance sheet through asset sales and redemptions becomes a substitute to some degree for raising short-term interest rates, and reductions in the SOMA portfolio could influence the timing or sizes of adjustments to be made to short-term interest rates.

However, several considerations warrant some concern about using asset sales aggressively, whether to achieve financial tightening or for any other purpose, and these are also listed in the middle panel of exhibit 7. First, there is a considerable degree of uncertainty surrounding the effects of asset sales on financial conditions and the economy. Given our lack of experience with this tool, our estimates of the macroeconomic effects of changing our holdings of longer-term assets are considerably more uncertain than those associated with changes in the federal funds rate. Second, an announcement to sell SOMA assets would run the risk of prompting a sudden sharp rise in longer-term interest rates, a pattern observed in reverse with the announcements of the purchase programs. Policymakers could be particularly concerned about the potential for a quick backup in longer-term rates to derail an incipient recovery. A third concern is that policymakers may worry about the effects that large-scale asset sales could have on market functioning by negatively affecting liquidity conditions for a time. A final consideration regarding asset sales is the potential for sizable capital losses.

There are many alternative approaches to reducing the SOMA apart from ones involving the aggressive use of sales. In the bottom panel of exhibit 7 we list several possibilities and their respective implications for the total size of the balance sheet looking ahead several years. Each example is intended to illustrate a different underlying approach to the use of sales and redemptions.

A strategy involving redemptions only might provide the starkest contrast to one involving aggressive sales. The second example in the exhibit shows possible outcomes with redeeming all agency debt and MBS holdings but reinvesting all maturing Treasury securities. This approach would largely avoid the risks associated with rapid sales. But possible shortcomings are that the pace of the reduction of the portfolio would be somewhat arbitrary, uncertain (given the difficulty of predicting MBS prepayments), and sensitive to market interest rates (given their impact on prepayments). One might argue that the Federal Reserve should take greater control over the pace at which it shrinks its balance sheet to align it better with policy objectives.

Under a steady and gradual reduction approach, as illustrated by the third example, the portfolio could be placed on a specified path involving a gradual reduction over a number of years—somewhat faster and more certain or steady than a redemptions-only approach—but one that still avoids the risks of rapid sales. As with a redemptions-only approach, the portfolio adjustments would be operating in the background, with adjustments to short-term rates used as the active tool to adjust financial conditions. One implication of adhering to a predetermined path of decline is that the selling of assets would have to be accelerated as interest rates rose and slowed as rates fell, given the interest rate sensitivities of mortgage-backed prepayments, and that could be countercyclical.

Finally, policymakers could instead use adjustments to the size and composition of the SOMA, through sales or purchases as needed, as a discretionary tool to respond

to the evolution of economic and financial conditions. There are, however, challenges with a state-dependent approach. Policymakers may have difficulty calibrating the appropriate response for a balance sheet rule and its coordination with adjustments to short-term interest rates because of the uncertainty of its effects and our inexperience with these policies. The use of this new instrument could also create more uncertainty in the markets, at least for a time, because markets do not have any history by which to judge the balance sheet adjustment reaction function.

Given the above, the staff is inclined to recommend a strategy of slowly shrinking the balance sheet in a passive manner, at least for a time. The reduction could be achieved through redemptions only or through a strategy that commits to a gradual reduction in portfolio size in which redemptions are supplemented with modest asset sales. Policymakers could switch from this passive approach to a more active one if economic conditions shifted in a manner that necessitated a more rapid response using all tools at their disposal. But for any chosen balance sheet strategy, given its novelty, effective communication will be crucial to its success.

The second broad policy issue for policymakers to consider is the strategy for sequencing draining reserves around the first hike in short-term policy rates. The temporary draining tools being developed—reverse RPs and term deposits—could be used to achieve a much more rapid decline in excess reserves than could be obtained via sales and redemptions. That introduces several options for the timing and size of reserve-draining operations with these tools around the time that the Committee first raises the interest rate on excess reserves and sets a higher target level for the federal funds rate. These alternative strategies are listed in the left panel of exhibit 8, with potential benefits and risks associated with each.

One approach is to drain nothing through reverse RPs and term deposits before raising the IOER rate, and even then doing so only after some period if dissatisfied with the observed behavior of market rates. This approach has advantages if one is confident that the IOER rate will provide sufficient pull on short-term market rates, including the federal funds rate, even at the high levels of reserves that may still exist when the FOMC wants to tighten. This approach avoids the possibility that markets would misinterpret the initiation of reserve draining ahead of a rise in policy rates as a signal that policy tightening was necessarily imminent. In addition, it could avoid the operational complexity and expense of conducting reverse RP and term deposit operations at all, if it turned out that raising the IOER rate was sufficient to satisfactorily control short-term market rates.

An alternative approach would be to remove a large portion of the reserves before raising policy rates, getting down to a lower base of excess reserves. The principal motivation for this approach is that it avoids the possible outcome in which an increase in the IOER rate has much less effect on short-term market rates than desired and we face impediments to quickly ramping up various draining tools on a potentially large scale without disrupting funding markets. A scenario in which the Federal Reserve faces an extended period during which credibility about its ability to

control short-term rates is in doubt is perhaps the most worrisome of outcomes. Draining a substantial amount of reserves in advance might mitigate that risk, either by strengthening the link between the IOER rate and short-term market rates or by leaving less ground to cover if it turns out that most of the reserves will need to be drained eventually anyway. Additional possible benefits to this strategy include the impact it could have in convincing market participants ahead of time that the Federal Reserve has the necessary tools to ensure a timely exit from the current accommodative stance of policy.

Beginning to drain reserves ahead of a tightening in rates could introduce a communications challenge to avoid any impression that draining reserves signals that a hike in policy rates is at hand. On that score, it is perhaps encouraging that many market participants expect reserve-draining tools to be used ahead of a tightening in rates. An important element of this strategy would be the choice of operating objective for draining operations in the period before a tightening in rates. Policymakers could take the amount of excess reserves down to a specified level, say \$500 billion, and then keep it there until the time when the rate paid on excess reserves is raised. Because we are at a point where reserve demand appears to be very elastic, even a large reduction in reserves from current levels might not be expected to have much effect on market rates. But the use of a quantitative operating objective for reserves during this period might need to be made conditional on the observed reaction of the fed funds rate or other short-term market rates.

Under a third approach, the first use of reverse RPs and term deposits might coincide with an initial tightening of policy rates. Communications issues under this option would be straightforward, but beginning to drain reserves only when policy rates are first raised would not seem to shorten by much the interval over which there would be any risk of the funds rate trading well below its target.

Shown in the right panel of exhibit 8 are the various criteria that policymakers might use to decide which sequencing strategy to adopt. These include the degree of confidence about the IOER rate as a tool by itself for controlling short-term interest rates, the communication challenges with beginning to drain reserves ahead of a tightening, and other considerations. At this point, the staff does not have a definitive recommendation regarding the sequencing of reserve draining. However, the potential consequences of the worst-case outcome associated with each strategy might point toward the second option.

That concludes my presentation on this topic. In the exhibit on the final page of the handout is a set of questions for removing policy accommodation that the Committee may wish to consider in its discussion.

CHAIRMAN BERNANKE. Thank you. Questions for Jim or Spence? President Lacker.

MR. LACKER. Thank you. I have two questions. First, Mr. Clouse, you said that the staff was considering reviving work on the reserve collateral accounts proposal. Several months ago you advised us that you were suspending work on that. What changed your mind? Why should we revive work on that now?

MR. CLOUSE. Well, the decision to suspend work really wasn't a decision that it wasn't worth pursuing. It was just that there were constraints on various resources—particularly, the same resources that would be developing the RCAs are the ones that are currently being employed to develop the term deposit facility. But as we are now getting closer to an implementation date for the term deposit facility, we feel as though we are in a position to again take up the work on reserve collateral accounts.

MR. LACKER. I see. I made the suggestion last time, and I hope the work group takes it up, to look at both the theoretical fragility of the model that suggests this is a good thing to do as well as the sense of what magnitude of welfare costs this would alleviate. I understand the symbolic value of having a federal funds rate that does just what we want it to if that's what we want to have guide policy, but I am just deeply skeptical of the value of this project, and I would urge you to approach it with a skeptical eye.

The second question I have is that we have these two memos, one on asset sales and one on alternative reserve-draining strategies using term deposit facilities and reverse repurchase agreements. The latter presumes that we use them at some time and seems disconnected from the former. So I was wondering if the staff had any view about an option in which we don't use these reverse RPs or term deposit facilities at all and rely instead on asset sales to drain reserves. The staff memos contain no information on that question.

MR. HILTON. I interpret the first option that is given as a strategy for the sequencing of draining to include that, if I understand you correctly, in that it would use those temporary reserve-draining tools only if it is observed that control over the market rates by adjusting the rate paid on excess reserves is not sufficient. So it doesn't presume in that case that we would necessarily consider it a contingent use. They are there. We have them, but that strategy says, Don't use them until it is proven that you need them.

MR. SACK. But you are suggesting that the asset sales could be aggressive enough to achieve the reserve-draining needs—is that correct?

MR. LACKER. Right, and that, if this question arises in this contingent strategy, we turn to further asset sales rather than turn to these reserve-draining tools.

MR. HILTON. One of the points in the asset sales memo was that there may be risks or issues associated with an aggressive sales strategy that might preclude you from using that on the scale that you would need in order to achieve an objective for short-term interest rates.

MR. SACK. Right. That memo has an entire section on the concerns about an aggressive approach, and actually one of the four options considered is an aggressive asset sales approach. So I think it is covered in the memos.

MR. LACKER. Well, it's kind of apart from the relative value of these two tools, right? I mean, you have these two sets of tools: One, we issue debt; the other, we sell assets. We sort of never got around to comparing the two, the way I read the two memos. That's why I was asking you.

MR. HILTON. I think that there are externalities potentially with using asset sales on a large scale in a short period of time that set it apart from possibly using the temporary reserve-

draining tools. So it's an option, but it's one that would, I think, be used only recognizing that we could be limited in terms of the scale in which we could use it in a short period of time.

MR. LACKER. Did you say "externalities"?

MR. HILTON. In terms of potential market disruption of trying to sell a large amount of assets.

MR. LACKER. Oh, market disruption.

CHAIRMAN BERNANKE. Pecuniary externalities. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. On page 2, you have the reserve balances with alternative assumptions, and it takes a long time to get down to \$200 billion of excess reserves. But suppose you didn't have that time. If we told you, Brian, next September or October, "Start draining reserves today to get ready to raise rates tomorrow," or whatever, could you get down from \$1.1 trillion to \$200 billion in a few weeks or a few months? If the trigger were pulled later, how long would it take?

MR. SACK. I think it's problematic to go too quickly, especially with the reverse repos, because first of all, the tools are new and the markets have to adjust to them. Second, when we use reverse repurchase agreements, it requires a reallocation of flows of short-term funding. We will be taking funds that used to flow, say, into the tri-party repo market. You will have someone with securities that they used to finance in tri-party repo, and they now have to find the funds from another source. Ultimately that source has to be the banks because the reserves come out of the banks. And our view is that the reallocation of flows and the relationships and changes it would require should caution us about thinking we could go extremely fast with reverse repos. So I think there are advantages to starting early and gradually ramping up the program, especially on reverse repos.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. I just have a question for Jim on the table at the bottom of page 3 and the similar table that Brian had—so it's a good question for both of you. This is the belief system of the survey respondents, and there's empirical evidence of a relationship between the spread and the amount of reserves, but there is really no empirical basis that the spread increases as the IOER rate goes up. So is there any theoretical basis for thinking that the spread should increase as the IOER rate goes up? The reason I am asking is that it is one thing to have people believe something, but if there is basis for the belief, I would put more weight on it than if there is not basis for the belief. So do we have a story that explains why the spread might widen as the IOER rate goes up since we have no empirical basis?

MR. CLOUSE. I may have one story, but I bet Brian has better ones.

VICE CHAIRMAN DUDLEY. Okay.

MR. CLOUSE. Presumably that spread should reflect whatever impediments there are in the arbitrage process. So if you think there are credit constraints of the type that Jamie McAndrews has discussed or you just don't want to be seen borrowing in the overnight funds market for fear of being seen needing funds or if there are capital issues, then all of those things might lead to a gap between the market rate and the IOER rate.

VICE CHAIRMAN DUDLEY. I agree with that, but why does that arbitrage become less effective as the IOER rate climbs?

MR. CLOUSE. Right now you're very compressed between the IOER rate and the zero bound, which is a very effective zero bound. But as you raise that, it is a good bet that there is one-way risk on where it will go. So I can't tell you whether it will be an S-shaped curve or whether it is an exponential curve, but it is a pretty good bet that it will be wider as we raise the

IOER rate. And in fact, it was wider, as you know, when we first started. Those were tumultuous times.

VICE CHAIRMAN DUDLEY. That was in the middle of chaos.

CHAIRMAN BERNANKE. President Plosser, you had a two-hander?

MR. PLOSSER. Well, no. There was a memo or paper on a bargaining model that someone on the New York staff had done that had a theory that gave you a story. I am probably not in a position to tell you what that is, but there was one.

MR. HILTON. A paper by Morten Bech, and I think he presented it as a bargaining model between bank borrowers and those they are borrowing from, who do not have an option to just sit on excess reserves, and the outcome of that bargaining could depend on what the level of the interest rate was. I think that was probably what you were referring to.

VICE CHAIRMAN DUDLEY. So does this staff believe this?

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Mr. Chairman, I have three quick questions just for clarity. Jim, you talked about floors, and Spence, you talked about, on your pages 8 and 9, the degree of confidence to use the IOER rate to control short-term rates. My question is, given that the GSEs are major suppliers of overnight funds and they don't qualify for IOER under the current law, as I understand it, doesn't this make the floor somewhat permeable? And doesn't it reduce our control as long as those conditions exist? If so, what do we do about it? That's the first question.

MR. CLOUSE. I think that is absolutely a key question. To your first question, it certainly does make the floor permeable, and that's what we have observed so far. But I come back again. The GSEs have an incentive to lend below the IOER rate, but there's also some

impediment to arbitrage that prevents other borrowers in the market from buying up lots of funds and bidding the rate up to the IOER rate. So at least in a perfectly competitive, frictionless market, the fact that the GSEs don't have access to the IOER rate shouldn't result in a funds rate that is markedly below the IOER rate because it would just get competed away. But we're not seeing that for a variety of reasons evidently. But I think your question is right on target, and it's kind of a major question around what will happen to these widening spreads.

MR. FISHER. You also on your pages 8 and 9 have the risks at some period in which the funds rate could well be below the IOER rate. Doesn't the IOER rate—I'm having trouble saying that—have to be at or below other market rates by statute as well?

MR. CLOUSE. It cannot be higher than the general level of short-term interest rates, but that's a term of art that is being defined in the regulation—in particular, the list of short-term interest rates that are included in the regulation include the primary credit rate, which will likely be somewhat above the general level of many market interest rates. So as a general matter probably it will be the case that the Board and the Committee can envision setting the IOER rate where they wish and not be constrained by that feature of the statute.

MR. FISHER. And then one more statute question, Mr. Chairman. Jim, you correctly mentioned that by statute it would be the Board that would set the IOER rate. I'm curious—and this is a question probably for the Chairman of the Board—in terms of this Committee setting monetary policy, how do you square those two if the IOER rate were to be our principal monetary policy tool?

CHAIRMAN BERNANKE. Well, under the traditional approach, the Board set the discount rate, which was obviously tied closely to the federal funds rate target. So I cannot conceive that the Board is going to defy the FOMC and set the rate at a different level. We need

to work collaboratively, obviously, but my anticipation is that we will collectively decide where monetary policy needs to be and how we should achieve the degree of tightness that we need.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I appreciate that you all are having to operate based more on analysis and thought experiment than on experience with all of this, so you may not be able to shed much light on this question. But I wonder to what degree you think the efficacy of, and the risks associated with, each of these tools and strategies would vary depending on the conditions in which we began to undertake the strategy. So, for example, if we began during a period in which there was a noninflationary, even disinflationary, environment as opposed to one in which we were beginning to feel inflationary pressures, or an environment in which there was a lot of strain within the mortgage markets or not. As best you can tell, is the sequencing and optimality of various tools more or less independent of the particular conditions and the particular sources of concern that might be motivating us to start the exit?

MR. HILTON. I would be inclined to say that, as far as sequencing of strategies for using draining tools, it would largely depend on conditions in the short-term funding markets, and as long as those were reasonably stable, even if there is uncertainty about some of the broader macro issues, I don't think that those would have much bearing on, say, the relationship between where short-term rates are and the rate paid on excess reserves. Obviously, if conditions are disruptive in funding markets as they were in late 2008, the story would be different.

MR. TARULLO. One presumes that those are not the conditions under which we would start to exit.

MR. HILTON. Exactly.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Yes. I was wondering: There seemed to be a presumption in the memos that we would require aggressive sales in order to reach a point where we could feel confident in the connection between the interest rate on excess reserves and the fed funds rate—getting our reserves low enough to where we would feel confident about that connection. So I am going back and looking at an old memo. It goes back to December 9. Some of these estimates might be out of date. It is by Keane, Remache, and Sack on reinvestment policies. One of the policies prescribed there—or thought about there, I should say—is redeeming all Treasuries, agencies, and agency MBS, and under that, by the end of 2010, reserve balances fall to less than \$900 billion, and by the end of 2011, which is the Greenbook's estimate of how long we will wait to raise rates, reserve balances fall to \$626 billion. So it seemed just by redemptions alone—because this is without using sales, without using any reserve-draining techniques—that we can really get pretty close to this \$850 billion point, where we start to see some slope in the graph. Are you saying that we have to get well below \$850 billion, or am I just misreading something in this?

MR. SACK. Well, at \$850 billion, as you can see in the scatter plot on page 3, as you point out, you enter into the point where you see some upward slope, and that tells you that further reductions in reserves tend to move the funds rate up toward the IOER rate. It doesn't exactly identify what happens when the IOER rate goes up and whether the funds rate tracks it closely, and that is, I think, the policy issue that you face. As has been discussed, that's what is hard empirically to assess given the lack of experience. The survey would say that, indeed, you do not achieve a tight, one-for-one linkage at those levels of reserves.

MR. KOCHERLAKOTA. But I guess my question is really, at the end of the day, how far down do we have to get reserves? It seems as though redemptions are getting us down only to, say, \$700 billion or something roughly like that by early 2011, mid-2011. How much further do you think we have to be down to have some confidence about being able to move market interest rates?

MR. SACK. That's a good question. I think that redeeming everything, as you point out, gets us to those ranges by 2011. Actually, if allowed to run its course, it gets us back to no excess reserves in 2015 or so. At a minimum, redemptions would reduce the amount of ground we would have to cover with other operations to ensure that the relationship between the fed funds rate and the IOER rate is maintained, but we just don't know. On the strategy of draining reserves ahead of time to get to a different starting point for raising the IOER rate, in the memo and in Spence's presentation, we threw out a number of \$500 billion, but basically there is very little analysis that you can use to nail down that level. So I think it's really going to come down to how you weigh the costs of the risk that there could be more slippage than we anticipate and how quickly in that case we could actually turn around and drain reserves to tighten up that linkage.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I just have one question about the "early reserve drain" strategy, which is on page 8 in the middle. I guess my question about this, and a lot of the discussion about this, is that under this scenario you'd be doing the reserve-draining operations considerably before you'd be trying to raise overnight rates. But in order to do that, you are really putting upward pressure on short-term interest rates anyway, say, 30-day rates or other short-term rates. So in a macroeconomic sense, how much difference is there really?

Aren't you really saying that you're raising one type of very short term interest rate so that you don't have to raise another type of very short term interest rate? Most of what we look at macroeconomically speaking is at a quarterly level anyway. So, how much difference is there really? If I vote for this strategy, am I not just voting for higher short-term interest rates?

MR. HILTON. I would say that, in voting for the strategy and thinking about how to operationalize it, what impact that beginning to drain and draining successively larger amounts would have on short-term rates should have some bearing on how we should operationalize it. That is, we may want, to present an example, to employ the tools of temporary draining on a larger scale until we observe it beginning to have some noticeable effect on short-term rates. The chart that Jim presented on page 3 suggests that, from current levels of reserves, we could actually drain several hundred billions of dollars and perhaps not have any observed effect on short-term rates of the kind that you're describing.

MR. BULLARD. Oh, no, no, no, no. You have a 30-day Treasury out there, and now you're saying that I'm going to give banks an option to deposit at the Fed at some rate. So suppose you have to go to 75 or 100 basis points on your term deposit in order to get it to attract enough reserves in there. Isn't that an alternative for the bank as opposed to going and buying the 30-day Treasury? So you're putting upward pressure on rates no matter how you cut it. Forget about the overnight rate. No one is trading at the overnight rate. And the macroeconomics for that, if you're writing papers about it, you would not worry about.

MR. HILTON. Well, one possibility with the use of term deposit rates, the question would be, What would be the incremental increase in rates before you paid on excess reserves that would be needed to induce banks to transfer a lot of the reserves from excess reserves into these term deposits? If it is a large level of reserves, most of which are not really providing any

particular, say, liquidity protection, I think that at least initially you could drain a substantial amount of reserves through that mechanism by offering just a very small spread over the rate paid on excess reserves, one that would not necessarily have any effect on broader market rates.

MR. MADIGAN. If I could add something, directionally I think we would agree with you that clearly we are putting upward pressure on rates by doing this. But I am presuming that the Committee would not want to use these tools to push the fed funds rate above the upper limit of its existing 0 to 25 basis point range, for instance, at least initially; that its purpose might be to push it up to the vicinity of the upper end of the range, and that is only something on the order of 15 basis points or less. So at least as viewed through the lens of overnight rates, the magnitude of the increase would likely not be very much initially.

MR. BULLARD. The magnitude of the increase in the overnight rate?

MR. MADIGAN. Overnight rates would presumably be limited to something like 12 to 15 basis points because you wouldn't be trying to push the fed funds rate above your currently existing target of 0 to 25 basis points, I'm assuming.

MR. BULLARD. I'm saying tightening is tightening is tightening.

VICE CHAIRMAN DUDLEY. It depends on where the money is coming from.

MR. BULLARD. You have a spectrum of rates. Okay, and I can see there's a sort of term structure at these very short rates, but these are funding options for banks, and you're putting upward pressure on that, and that is inducing them to possibly keep funds on deposit as opposed to lending them out.

MR. MADIGAN. I don't think we would disagree with that. In recent months as the fed funds rate has ticked down, even as the Committee has kept its target range for the fed funds rate

the same, in some sense that's been a slight easing of monetary policy. So it's the mirror image of that.

MR. BULLARD. Well, there's very little trading going on at that, and we know there are special factors there because of the GSEs. So in a macroeconomic sense, how important is that?

MR. SACK. I think we don't anticipate pushing up overnight interest rates much, and we wouldn't anticipate the situation you described where the term rates—say, a 30-day term rate—would have to be as high as you suggested. We should keep in mind that investors are holding 30-day bills at anywhere between minus 2 and plus 4 basis points of return, and so I think it's possible that we could entice, especially with the reverse repos, a decent amount of reserve draining without having to push term rates up as much as you suggest.

CHAIRMAN BERNANKE. Vice Chairman, did you have a comment?

VICE CHAIRMAN DUDLEY. Yes. It depends in part where the money comes from. Imagine a bank that every day has excess reserves, and then you have a term deposit facility, and it just moves some of those excess reserves that it has every day into the term deposit facility. Well, that is not going to really affect anything else. It's really if the money is getting pulled from other sources. If that bank were selling bills to fund the term deposit facility, it would be something different. So I think it really depends on where the money comes from. I think the argument is that, at the very beginning of this process, the money is probably moving from an overnight bank reserve to the term deposit facility and nothing else really is going on, so the pressure is de minimis. But as you go further, then you are starting to rearrange.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. I would think that the expectational effect would dominate whether this interest rate goes up a little or that interest rate goes down a little. Once we start draining

reserves, people will build in a path for some rate—the federal funds rate, some market rate—and I think that will really be much more important than whether 30-day Treasury bills are higher or lower by 10 basis points.

CHAIRMAN BERNANKE. Okay. As usual our outstanding conversation is stretching the limits of our available time. I am getting a little concerned about that. Why don't we take 15 minutes for coffee? I hope that everybody will use the 15 minutes to think about how to be as concise as possible. [Laughter] In particular, it is not necessary to address every single question that has been presented. I hope you will focus on the things that you consider most important.

MR. KOCHERLAKOTA. I am starting at 2017 and working back. [Laughter]

CHAIRMAN BERNANKE. Fifteen minutes for coffee. Thank you.

[Coffee break]

CHAIRMAN BERNANKE. Thank you for returning promptly. We are ready for a go-round on comments on sequencing, and also don't forget to mention the primary credit rate. We will start with President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. Let me begin with the discount rate. I support the staff recommendation for normalizing terms on primary credit as well as the TAF proposals. My main concern is that the message of liquidity normalization could be misinterpreted as a message of monetary tightening, so I think it is critical that we be clear that this is an action that is essentially a technical adjustment reflecting better market functioning. I strongly urge you to proceed as you indicated you would in floating this in testimony. If you have multiple occasions to do it, that's good.

In terms of timing, to me what would be natural is for the Board to take this action at our next meeting and to make it part of our next statement. But I could support doing it at an earlier,

intermeeting, time. I would hope that all of the Reserve Banks would recommend this action because I think, if we all did it together, it would be clearer that the move is intended as a normalization of the operation of the window.

Okay. Next, let me turn to the seven questions on exit strategy, and I am sorry, I probably won't be as brief as you would like. [Laughter]

MR. EVANS. You are setting the standard.

MS. YELLEN. So I apologize for that. I just want to comment briefly on the last question, number 7 first—it has to do with long-run strategy—because I think, as my remarks on the other questions will indicate, some of our decisions on our exit strategy should depend on our longer-run operating framework. I think we still have time to debate that framework, but it would be helpful to reach consensus before we begin raising our short-term interest rate target.

That said, let me summarize my views on asset sales and reserve-draining operations. I will begin with questions 1 and 2 on asset sales. My preference there is for option 3, redemptions only, lasting for a period that would probably take us until the end of this year. My strong preference is for a mechanistic strategy to shrink our holdings over time. I think a mechanistic approach provides predictability to markets, minimizing ongoing speculation about our plans and the possibility that abrupt yield movements could result from discretionary asset purchases or sales. A decision to shed assets in a predictable way would not preclude some future adjustments in the pace of runoff, as long as we don't revisit our decisions too frequently. We might reconsider this issue, say, on an annual basis.

If we do adjust the path later on, I see some merit in switching to option 2, a gradual and predictable schedule of sales, and we do that only when we are confident that the recovery is well established and the MBS market is functioning normally. I see no great urgency for us to

shrink our balance sheet very quickly, but the pure runoff strategy does saddle us with a very large balance sheet and very substantial MBS holdings for an awfully long time. A more rapid pace of convergence has its attractions.

On the alternative strategy of a state-contingent path of asset purchases and sales, I want to say that President Bullard's memo made a very logical case for that approach, and there are some distinct attractions. Adding a new policy lever to our toolkit has a lot of appeal. In the final analysis, though, I think the risks of using asset purchases and sales for fine-tuning purposes outweigh the rewards. We are uncertain of the effects of all our policy actions on the economy; but in the case of asset sales and purchases, the uncertainty is tremendous. That makes it hard for us to develop a sensible state-contingent rule and an order of magnitude harder yet for markets to understand how we will respond to incoming data. The potential for misinterpretation and disruption is, therefore, quite large.

In addition, my response to question 5 is that I don't favor including holdings of either MBS or agency debt in the SOMA portfolio in the long run because of the political risks relating to our involvement in the housing market and the associated dangers of using our portfolio allocation to influence the supply of credit to the housing sector. So the bottom line is that I view our MBS and agency debt program as akin to the liquidity facilities that we started up in the time of crisis to address market dislocation and the exceptional policy constraints associated with the zero bound. We have phased those facilities out as market function has normalized, and I think we should do the same with our MBS and agency debt program—phase it out when we can do so without creating economic disruption. Now, I have previously argued that we should keep our options open for further purchases if the outlook worsens or if market functioning

deteriorates noticeably when our purchases cease in March. But as with the liquidity facilities, I believe the bar for further purchases should be quite high.

Question 2 concerns the specifics of redemption strategies, and my view here is that I would redeem all agency and MBS holdings, but I might be inclined to roll over the Treasuries, because the market expects it and we are currently below steady-state levels.

Turning to question 3 on reserve draining, I am actually not particularly drawn to any of the strategies that were presented by the staff for consideration. Their main purpose is to make sure that the Desk can achieve a Committee-determined funds rate target and to push the funds rate up, so that trading is at or slightly above the IOER rate. But I am just not convinced that this really matters for the monetary transmission mechanism or that it is crucial to building market confidence that we can withdraw monetary accommodation. I continue to believe that an increase in the IOER rate will suffice to tighten financial conditions, and this will be true whether the funds trade below or above the IOER rate. I see no particular reason why it matters a lot if the Desk can hit a precise funds rate target although, admittedly, we won't look very competent if the Desk proves itself unable to carry out the FOMC's instructions. So we do need to avoid that situation, and one way would be for the Committee to retain a target range for the federal funds rate as we raise the IOER rate and withdraw accommodation.

For example, when tightening begins, we could raise the IOER rate to $\frac{1}{2}$ percent and set a target range for the funds rate from, say, $\frac{1}{4}$ to $\frac{1}{2}$ percent. We could publicly explain that we expect the funds rate to trade persistently below the IOER rate and that, given the idiosyncrasies of that market in the presence of such large reserve balances, the fund rate has become less indicative of short-term money market conditions overall. I prefer this approach to the three staff alternatives. Our decisions on this issue will be easier if we can decide on a longer-term

operating strategy reasonably soon. If we decide on a longer-run operating strategy that deemphasizes the funds rate as a target, there will be a lot less reason to worry about the need to drain reserves now to improve the Desk's control of it.

I read the international evidence as indicating that many central banks use alternative short rates as targets, and some, like the Bank of England, employ a policy rate similar to our IOER rate to communicate the stance of policy. Most appear to operate a corridor system with large reserves quite successfully. So jumping ahead to question 6, my answer is that I am not wed to the funds rate as a target, and I see merit in replacing it with a policy rate like the IOER instead of a market rate. Governance issues, though, do give me some pause, because it is not FOMC-determined. If we decide to move in that direction, the case for draining reserves through reverse repurchase agreements and term deposits does not seem very persuasive. If we instead decide to stick with the key role for the fed funds rate in our longer-run operating strategy, the benefits of draining reserves may be larger. But there are also costs, and the main one relates to communications, and this is Governor Kohn's point. I think it will be very challenging to communicate that a large draining operation, which is what we need, is merely technical and does not mark the beginning of an exit from policy accommodation. That will be especially true if it succeeds in pushing up the federal funds rate toward IOER.

So if we do drain reserves, I would be inclined to wait until we are almost ready to raise short-term rates, perhaps when we change the "extended period" language. Those actions would then jointly signal that a tightening is imminent. An alternative would be to begin draining soon and communicate that the purpose is technical, emphasizing that it doesn't mark the beginning of an exit from accommodation. But I think such communications will be very challenging,

especially if the operations are large and push up the fed funds rate. And I think that's a much more dangerous approach.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. Thanks to the staff. I thought they framed the questions very well, and I thought the memos did a very nice job of framing the issues. I know this is a difficult set of questions and issues to be dealing with because we don't have a lot of empirical evidence. So I thought it really was quite exceptional what they put together.

In terms of my own strategy, I would redeem all Treasury and mortgage-backed securities, but I would keep an open mind as to whether additional purchases will be necessary, depending on how the economy evolves. I would look to interest on excess reserves for the initial increase in interest rates when that becomes appropriate. I expect that market rates will respond to the increase in interest on excess reserves, as the international evidence highlights, but if not, future tightening can be accompanied by removal of excess reserves.

I would engage in asset sales only if the economy is growing too quickly, an event I view as quite remote over the course of this year. In particular, for asset sales, if market participants fear that we intend to unload our mortgage-backed securities, possibly quite quickly, then the resulting downward pressure on mortgage-backed-security prices could cause a significant rise in mortgage yields at a time when the still-fragile housing market will be losing important government support. So I don't want to underestimate the potential impact of deciding to do asset sales. And just thinking in my own instance, if I were to be on the other side of the trade, with a trillion dollars looming that could possibly be dumped, I would be concerned that there would be a significant market reaction.

I would also note that the primary reason for reducing reserve balances is to regain control over the federal funds rate. However, the market for federal funds has become small and specialized, and the federal funds rate has become dominated by GSEs. As a consequence, I believe the focus of our attention should be on the interest rate paid on excess reserves, as well as our communication strategy, rather than on the federal funds rate. In short, we may well be able to sufficiently decrease monetary stimulus, when that becomes appropriate, just by increasing the interest rate on reserves. If the Committee does decide to substantially reduce reserves, I would wait to take that action until after the removal of the “extended period” language because I have the same concerns that President Yellen highlighted.

In terms of the primary credit rate, I, too, want to emphasize that it’s a technical change. I think there are three elements to that. One, I think it is important that it is unanimous among the Reserve Banks. Second, I think it is important that we halt the term auction facility at the same time that we are changing the primary credit rate, and those things as technical changes going together makes sense to me. And, third, I think it is most appropriate to announce it at the March meeting as well. That is a time when we can talk about technical changes, but it is also a bit easier to have a little more extended language to highlight the fact that it is a technical change. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. With regard to primary credit, I support the normalization of primary credit. I think we are winding down our special liquidity programs, and this needs to go along with that. I think we need to raise the penalty back to 100 basis points and shorten the maximum maturity on primary credit back to overnight. I think we need to end the TAF auctions, and as I have argued for some time, we need to get the minimum bid rate on

the TAF auctions back up to something close to the primary credit rate. So I approve and support all of those things. I think they are all part of the normalization process. Those actions were part of special liquidity provisions. And the closer we can announce those changes to the expiration of other liquidity facilities, the better off we will be in terms of our communications. I don't think we need to take this normalization in steps. I would just as soon that we do it all at one time, go back to 100 basis points, end the TAF, and we're back. I agree it should be unanimous among the Banks. I think they would be very supportive. So I am supportive of all of that.

I also think, as long as we are taking steps to normalize some of these operations at the discount window, that it is high time we rescinded the authorization to give Fannie and Freddie access to the discount window. We allowed access to the discount window to Fannie and Freddie back in August 2008. It was supposed to be an emergency measure, until the Treasury could get congressional approval to expand its lending. It did. On December 24, the Treasury announced that it was allowing its own short-term credit facility to expire because it had the backstop credit facility and it could now use preferred stock to support Fannie and Freddie to any degree they saw fit. So I think it's time we close that option, and I hope we will do that very soon.

Let me turn to the exit strategy removals. I want to skip to the question about the long run. Before we can answer some of these questions—4, 6, and some of the others, and about how much we should drain—I think we need to think hard about what our longer-run operating regime should look like. Given the current size of our balance sheet, it is going to be very difficult to implement any kind of monetary policy other than via a floor system because excess reserves are so large. So a corridor system, at least in the near term, seems to be out of the

question. However, over time, I have become more convinced that we should be headed back to a corridor system, not a floor system. Now, of course, what that implies is that we will have to get the reserves on our balance sheet back down to a level where we can target a funds rate that is above the IOER rate. I say this not because I think the floor system can't be effective, because I think it can. But the real reason I say this is that I want to have some constraint on the size of our portfolio. I worry that, if there is no constraint on the size, it may be considerably harder for us to resist calls for the Fed to use its portfolio to allocate resources to particular sectors on behalf of the fiscal authorities.

There are smart people in the Congress who will realize that under a floor system we can saturate the banking system with excess reserves by purchasing large volumes of government debt or other assets, explode our balance sheet, and generate increased earnings that can then be turned over to the Treasury. And we can do that as long as the assets we buy have earnings that are higher than the floor. I think this makes us even a more tempting and an increasingly tempting and convenient target for the fiscal authorities, and it actually puts our independence at risk. I think of the corridor system as serving as a kind of commitment device for the Fed that would allow it to limit the size of its portfolio in order to hit a federal funds rate target between the upper and lower bound, and this will help us say “no” when the time comes.

Now, with regard to some of the other questions, I don't think we have much choice but to complete our purchases of MBS, as we have announced. I was not a big fan of removing the “up to” language. I think it would have given us more flexibility, but we are now stuck with it, so I am inclined that we have to do that. But relatively soon I think we are going to have to rely not just on redemptions of agency debt and MBS but also on selling some of the MBS from our portfolio. And I think we should be prepared to do that when the time comes.

Regarding question 3, about our certainty of our ability to control short-term interest rates, IO—IEO—I can't say it either. [Laughter] Eeyore, right. There we go. The staff memo suggests that current levels of reserves may damp the effect of an increase in IOER on the funds rate. Therefore, beginning to drain reserves before we begin raising rates might seem prudent, and it might put us on a path toward getting reserves back down toward our long-run goal. And my preference would be a corridor system of some kind.

So I think we need to begin to reduce the size of the balance sheet. The tools that the staff has recommended, whether it be reverse repos or term deposits, do not shrink our balance sheet. They may be argued as fine-tuning tools that might get the funds rate near the IOER rate, but they really don't shrink our balance sheet. And I don't think we should rely on them extensively, except in very short term circumstances. Second, I think that the extent of our large balance sheet complicates the public's inference about our resolve to maintain price stability, and if we believe that using IOER and our other tools allows our balance sheet to remain large without implying higher inflation, then we need to be attentive to the disconnect between what we think will work and what the message is that the public is receiving. As I have said before, the dispersion among inflation forecasts of respondents in the Survey of Professional Forecasters and the inflation risk premiums that might be implied by TIPS have increased. Therefore, uncertainty about inflation has increased, and we should be attuned to that and recognize that it may signal that our credibility is somewhat tenuous.

One way to show our commitment to maintaining price stability is—I've lost my pages now because I'm skipping around—in fact to begin to drain reserves, and that may prove to be very helpful. I would also suggest that there are a couple of other advantages to draining reserves. As we raise the IOER rate with high levels of excess reserves, the interest rates we pay

to banks will go up. If we raise the IOER rate by 50 basis points, with \$1 trillion of excess reserves, we are funneling something like \$5 billion more into the banking system. Given the political sensitivities around Washington these days, our choosing to raise the IOER rate with so many excess reserves in the system might get us pushback in the political process about our providing more and more support for the banking system, and I think we have to be sensitive to that. I also suggest that, by shrinking the balance sheet and selling assets earlier, as we raise interest rates, our potential down the road for capital losses on any future sales might in part be mitigated by the fact that we have sold the assets earlier rather than waiting until interest rates got a lot higher. That also might have some benefits to it.

Regarding the long-term structure of our balance sheet, my answer is simple. It should be all Treasuries, preferably concentrated in bills and short-term coupon bonds. I would note for the record that, if the economy were to take a turn for the worse, I would still oppose purchasing more MBS. If you were to engage in more asset purchases, I feel strongly that they should be Treasuries. And to the extent that we redeem Treasuries, rather than letting them run off, I think we should redeem them not with long-term bonds but with short-term Treasury securities—again with the idea of getting our portfolio back to some more normal structure. Our SOMA Treasury portfolio has grown from an average maturity of 40 months in 2006 to more than 80 months today. That is very long. So I would, again, prefer the short-term securities at that point. I guess that is it, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. On primary credit, I support the staff's recommendation for normalization, and on the TAF, I also support the staff's recommendation on normalization, with President Rosengren's emendation. I think it would be a

great idea for the Chairman to float these ideas in his appearances on the Hill, but I also agree that I would like to forestall announcements until our March meeting.

So I turn to our long-term strategy and talk a bit first about interest rates. I think that communication in the short run is going to be safest if we target the interest rate on excess reserves. But the reality is something we are going to have confront, which is that we don't really understand the details and the connection between the interest rate on excess reserves and market interest rates at the short end of the yield curve. So we don't know, if we raise the IOER rate by 200 basis points, what is going to happen to the fed funds rate. Maybe that does not matter to us, but we don't know what is going to happen to one-month Treasury bill rates or two-month Treasury bill rates either. And that source of disconnect is a source of at least discomfort to me. I agree that markets will correctly—and I think rightly—infer that, when we raise the IOER rate, we are tightening. But how much we are tightening will be a matter of lack of clarity, and it's a lack of clarity because we just don't have the experience to know what that is going to say. So there is going to have to be some learning by doing in this process, and my own guess, if I had to bet right now, would be that the spread between the fed funds rate and the IOER rate would stay roughly constant if we raised the IOER rate for a fixed level of reserves. That's purely guess work, and we're going to learn a lot more about that as time goes by.

So let me turn then to the balance sheet. I circulated a memo on a reverse taper exit strategy. What I wanted to accomplish here was to put a concrete proposal on the table, and then the concrete proposal is supposed to indicate that I think we can try to return to normalcy in terms of our balance sheet in five years—"normalcy" meaning excess reserves around \$25 billion and a balance sheet consisting only of Treasuries of varying maturities. And I would be inclined, as President Plosser would be, to have those Treasuries at the short end as opposed to the long end. Without sales we

cannot get there. So my own preferred strategy that I described here is to use redemptions of anything on our balance sheet right now—Treasury securities and MBS and agency debt—in combination with what I would describe as very modest rates of sales.

So I will give you some idea of that. You know, just this week while we were tapering, I think we bought—Brian can correct me if I'm wrong—about \$16 billion worth of MBS. So I am proposing that we sell \$5 billion to \$10 billion per month for six months beginning in the second half of 2010 and then ramp it up to an alarming rate—using it as a joke—of \$15 billion per month in 2011. So basically going very slowly in this process and being ready to reverse if we start to see large price effects from these kinds of sales. I think the challenge here, the concern that the staff raises about sales, is that, if we start to indicate our willingness to sell, the market is going to be concerned that we want to sell \$1 trillion in a month or over a relatively short period of time, and I think this is a communication issue. We have to be ready to communicate that this is not the case. I don't think this is an impossibility by any means, and I describe in my memo one way to accomplish that communication.

What are the benefits of doing this? The main benefit here is not that it's going to enhance our control over the fed funds rate. That's not what I am aiming for. It's that I'm concerned about the connection between the size of our balance sheet and inflation and inflation expectations. I think we see the evidence for these concerns in the data that Brian presented earlier. If you look at the break-even inflation rate, as we are used to doing, it is going up. But if you look for the price of skewness in inflation, which is sort of the price of heavy-tailed risk, which is more what I am concerned about, you start to see that going up as well over the last few months.

Those are my concerns. I think we can accomplish the desirable goal of getting rid of MBS on our balance sheet by the end of 2015, what I would call normalization, so that we have excess

reserves down below \$25 billion by the beginning of 2015 without using undue amounts of sales and without sales imposing huge effects on prices.

The last point I will make is that there are a lot of estimates of the price effect of sales. One of the things we have to be very cautious about is that we don't want to use data from this period of chaos, as Vice Chairman Dudley referred to it earlier, of late 2008 and early 2009 to make inferences about what the effect of sales would be. And so we have to try to use data from the latter part of 2009 or pre-crisis data to make that inference. There are a couple of memos from the New York Fed that have done that. One is by Raskin and Sheets, and the other is by Kimbrough and Madar. If we have any opportunity to talk, I will probably expand upon these points later. But the basic punch line from these memos is that essentially in these normal times buying \$100 billion worth of MBS puts downward pressure on yields of about 3 basis points. So that means \$1 trillion translates into about 30 basis points. I don't think this would be a huge tax on the market, especially for spreading this out over an exceptionally long period of time. But as I say, I'll expand upon those points probably in my policy remarks. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I didn't know what order I was in. So I wasn't ready to begin.

CHAIRMAN BERNANKE. You have to be on your toes here. [Laughter]

MR. KOHN. I spend so much time on my seat that I'm not good on my toes. [Laughter] On the primary credit rate, I am in favor of the staff proposal raising the primary credit rate 25 basis points. I guess I am a little hesitant to go all the way to the 100 basis point spread. First of all, I don't know whether we need or want to go to 100 ultimately, and I would like to stage it a bit to make sure that the markets are resilient to what we're doing. I think it is important to reduce the

incentives for these habitual borrowers and return to the discount credit of last resort type of function.

Communications will be a challenge. It is not a precursor to an increase in rates, but it's an adjustment liquidity facility. I am most comfortable doing this with the "extended period" language still in the directive—I will give you a little preview of what I will be arguing for tomorrow—just so it is clear that it is not a rate signal, and I would like to do it after the Chairman has a chance to explain it in testimony and Michelle and the other public information people have a chance to socialize it with the media so there aren't any misunderstandings. And I would do it before the March meeting, in part to get it away from the monetary policy decision.

I agree with the staff that the TAF minimum bid rate should rise *pari passu* with the primary credit rate. I'm in favor of phasing the amounts down and probably out after March. I guess I would keep a bit of an open mind about whether we go exactly to zero after March, but I could live with that, too.

On the other things about the exit here, the premise of my thinking on this is that significant exit actions will tend to tighten financial conditions. Importantly, this is because of the signaling—expectation effects. Draining reserves or shrinking the balance sheet significantly would be a strong signal to people that we are close to raising rates, and doing either of these independent of a decision to tighten financial conditions would, I think, tend to confuse people. I think also sales of long-term bonds would raise long-term interest rates directly and so tighten financial conditions. So decisions to exit should be based on the usual focus of monetary policy: How can our actions affect financial conditions and achieve our objectives?

On asset sales, I think selling assets would tighten financial conditions. It would tend to raise longer-term interest rates, and so I would not sell anything until we have decided that we want

financial conditions to tighten, that the economy is on a track that we need tighter financial conditions. I think even announcing gradual or slow sales will tend to raise longer-term interest rates at least a little because I think it's the stock rather than the flow effect that tends to affect markets, and selling assets or holding open the possibility of selling assets anytime soon would be especially disruptive as we wind down our purchases.

I agree that in theory, once we decided to tighten financial conditions, we could go after higher longer-term rates first—that is, assets sales before short-rate tightening. But I am concerned that it would confuse people, who expect policy tightening to start with short-term rates. I think postponing the increase in short-term rates would increase perceptions and concerns about the carry trade and what that's doing to asset prices. I also wonder what's going to happen to longer-term rates when we start to tighten short-term rates. I do not rule out a 1994 type of response, and selling long-term assets on top of such a market response could be pretty disruptive. So I would wait until after the first short-term rate increase to begin selling assets. Even before that I am comfortable with redemptions of agencies and MBS, as several others have said. I think that does point the portfolio down where it sends a powerful signal and ultimately will help by absorbing reserves and tightening our control over the funds rate or whatever interest rate we end up looking at.

I'm open on the option of letting the Treasuries be redeemed as well to tilt that curve even further down. I would like to see some analysis of what allowing Treasuries to be redeemed would do to longer-term interest rates, but we ought to think about that just for the reserve effects; to be sure we would end up with having to buy back Treasuries when we got to the end and we wanted a Treasury-only portfolio. I think it would shrink the reserve base quickly without selling. But I'm not comfortable with leaving all the decline to redemptions since we would be left with \$800 billion of the MBS and agencies in 2016. So I would initiate a sort of slow, steady sales program after we

begin to tighten policy and we decide that raising long-term rates even more than they have been raised by our policy tightening is consistent with achieving our goals.

On the reserve drain–IOER sequence, I think we should start draining reserves before raising the IOER rate to make the latter more reliable. We do not need it to be precise; we do not need to control the funds rate every basis point or few basis points. I would feel more comfortable if we had more precise control than I think we will get just by raising the IOER rate. But not much before we raise interest rates. Draining will be a powerful signal that higher rates are coming soon. Intermediate and long-term rates will adjust higher. So I would start that draining after we essentially decide to tighten, very close to our initial increase in the policy rate.

On what our target should be, I expect the funds market to recover as we drain these reserves. I think that was the experience in Japan, wasn't it, Nathan? As they drained those excess reserves, the interbank market, which had gone totally moribund, came back. It never returned to what it had been before, but it did come back.

MR. SHEETS. It came back quickly.

MR. KOHN. And they could target a market rate. I am sort of indifferent as to whether that market rate is the funds rate or the RP rate, but I think targeting a market rate sounds better to me than targeting IOER rate. The market rate and the expected market rates are what should be affecting financial conditions out into the future, and that's our channel for affecting the economy. So I would like to stick with a market rate channel. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Let me start off with the primary credit issue. It sounds as though there is a lot of consensus on that, but I also think we should begin to normalize.

A lot of the things that we are signaling are that the financial crisis is ending or tapering off, so I see this as another step toward saying that is what we think.

I support the staff recommendations on the TAF. I also think communications have to be very clear that it is not the Committee's intention to have a general increase in interest rates associated with this move. As to when to do it, I agree with Governor Kohn that it might be better to do it in February and separate it a little from monetary policy because that's the big issue here. February is the time when we are ending a lot of our 13(3) programs, and possibly we could, after it has been properly vetted publicly, make that move in February.

On asset sales, I think they should be state-contingent, including purchases. I agree with President Plosser. If we did get into a position in which the economy did not perform well and we had to or desired to purchase more, I think it would probably have to be Treasuries at this point, given the description of how the MBS market is operating at this time. But, again, I just want to remind everyone that we have to keep in mind how volatile the economy can be and how unpredictable it can be, and we may well be a year from now and it is not really where we thought it was going to be. So that's one reason I think we should keep our options open on that. It may help a lot to have a baseline plan in mind like the one suggested by President Kocherlakota. I would support something like that. But still committing or having in our head that we're completely committing to a particular path without seeing how the economy actually progresses is not optimal, and I think what really everyone around the table says is that we would make adjustments if the economy came in in a substantially different fashion from what we are seeing at the time. I think we should make that clear then to markets—and we do to some extent, but we could surely make it clearer to markets—that we would take action if we felt the situation demanded it.

Sales, some have said here, are the only permanent way to reduce reserve levels. I think that is something to keep in mind. I do think there has been something of an overemphasis on interest on excess reserves as our main policy tool going forward. At some level, interest on reserves, reverse repos, and term deposits are all ways to make transfers to banks. At the levels of excess reserves that we are talking about, these transfers may be substantial. The Congress opposed interest on reserves for decades for exactly this reason, and it may not be wise to rely on this policy tool in the circumstances given that history. One issue with asset sales is that of large effects of a selloff. I don't find that very convincing. I think the better way to think about this is that we would be gradually reversing some of the effects that we think have occurred over the past year during our purchase program. We would be unwinding those effects slowly over some period of time with some sales. I see no reason to think that we are intending to dump onto the market, and we are certainly not, and we can certainly communicate that. But that's a communications issue.

On redemptions during 2010, the redemptions policy sets a baseline balance sheet policy, but it is a passive one that is not based on an evaluation of economic conditions. So I would not regard the adoption of a particular redemption policy as a substitute for the evaluation that should occur and that should accompany that decision. I think the current policy is okay for now, which is to redeem all MBS and agency debt but not Treasuries. I would be open to adding in Treasuries on that redemption if we wanted to get a little faster downward movement there for the size of the balance sheet. But generally speaking, I think we should manage our balance sheet.

On sequencing between reverse repos, terms deposits, and interest on reserves, as I was saying earlier, I think all of these put upward pressure on short-term interest rates in one way or another. We should think of them as altogether part of a decision to raise short-term interest rates. So I guess my position would be close to the concurrent or nearly concurrent option for deploying

all of these tools. There are a lot of questions about exactly how this is going to work and what the macroeconomic effects really are. There seems to be the idea around the table that, by increasing certain types of short-term rates but not other types of short-term rates, the macroeconomic effects are going to be different, and I don't really think that is borne out by the models that I know of. So from this viewpoint, I do not think that term deposits or reverse repos far ahead of time would make too much sense. You would be signaling, or really you would be increasing interest rates way ahead of the point at which you are trying to make a decision to increase interest rates. So I would not want to go in that direction.

All right. Just a few other comments and I will finish up here. On balance sheet structure, I think I prefer the historical structure. It allows us to influence broad economic conditions without political risk. So that would be an all-Treasuries policy. On the question of the federal funds rate as the operating target, I think eventually we would like to transition to a channel system with the federal funds rate, a market rate, as the targeted rate, and I do think it is important to determine, as President Yellen said, to say something about the longer-run operating framework far in advance, and that's really going to have some impact on how we think of all these questions right now. So I think it would help us a lot to have a better idea of where we are going to go in the next few years as far as implementation of monetary policy in the wake of our still new ability to pay interest on reserves. Thanks very much.

CHAIRMAN BERNANKE. Mr. Chairman. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. I guess I'd start out by saying the one thing that's obvious here is the degree of uncertainty about any of these tools and what their effects will be. And that suggests that we need to go carefully and gingerly. But I would say sooner rather than later so that we can begin to see what these effects might be. On raising the primary credit rate, I

am supportive of that. I think the timing of that is a matter of when we feel we are ready to explain it, and then we should take that action.

Beyond that, on the questions, I think a gradual sale of these MBS over a period of time is the right way to go once we get started on this. I would redeem all MBS and not Treasuries. As far as the sequencing goes, I think the interest rate on excess reserves will be where we start. We need to find out if there is a relationship between moving the rate on excess reserves and the fed funds rate, and I think long term we should be moving back toward a market rate as our target. We have a lot to learn before we get that completely implemented, and so that's the process we have to begin right now. I think we just need to begin to see how these tools work in reverse. I do like President Kocherlakota's systematic proposal, but I think the first step would be to move the interest rate on excess reserves. I will leave it at that.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. I support the normalization of the discount rate. One additional point I would make is that I would like time to present that to my board and the other boards. I also support the recommendation of the staff on the TAF. We have an unusual, idiosyncratic, situation in Dallas, where we have a bank that is properly collateralized, in every single way adhering to proper conduct, except we believe he is gaming the TAF system. I am eager to get those both closed as quickly as possible if only for that reason, but also because I think it is the right policy to pursue. I would suggest that you signal to the markets in your testimony of February 10 as well as in your semiannual monetary policy testimony. I would support, by the way, just to add to President Plosser's point, which is not on the table, eliminating Freddie's and Fannie's access to the discount window. I'm in favor of a corridor

system, constrained on the downside by the IOER rate and on the upside by the primary credit rate.

With regard to the size of our balance sheet and draining reserves, the presentation made by Spence Hilton earlier, when he listed the risks of aggressive asset sales, had exactly the kind of questions many of the people at this table raised when we got into this problem. But we entered this issue and justified it because of the emergency response to having a zero-bound constraint. I don't believe that we should be in the business of financing housing. I think that is a matter for the Treasury and for other authorities, and I would like to get out of that business as quickly as possible. I realize that we must be careful in the way we do that. But in general, I would like to see us get back as soon as possible to the status where the private sector, and not the Federal Reserve, becomes the backbone for these markets. So as to how we do so and how quickly we do so, I will point out that President Kocherlakota not only wrote a good memo but he has been lobbying extremely hard by handing out gifts, such as this Minnesota Vikings hat, particularly to half Norwegians. [Laughter] Despite that, I would say, as Governor Kohn has pointed out, when we decide to tighten, then it would be appropriate to begin asset sales in order to remove us from something that we did for emergency purposes but that we did not have business being in in the first place.

I would be in favor of redemptions in the intermediate period, but once we begin to tighten, I believe we should be selling those assets. I believe we should be invested principally in short-term Treasuries, although, again, things have changed over the last 30 years, and there might be other instruments of that shorter-term nature—commercial paper; I'm not sure what—that we might wish to be invested in. But I would be biased toward short-term Treasuries and

getting out of mortgage-backed securities and GSE debt as quickly as possible and as quickly as markets allow. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. As regards the primary credit rate, I, too, support this. I think it's either a partial or a final normalization. We'll figure that out as we go forward. I think the "when" question probably should be after your communication in February, more or less coincident with the TAF announcement. There is a communications challenge here, and we have to ensure that this is not interpreted as some kind of a signal regarding the policy rate, but just a technical adjustment. I believe that can easily be done, and the market will acknowledge that. As President Yellen said, to avoid any misinterpretation, I will just say that it is best that there be no dissents from any of the Reserve Banks, that we basically all do this together and put the requests in together. So I support the primary credit rate recommendation.

As it regards the TAF, I also support those recommendations. I think they are consistent with eliminating the other credit and liquidity facilities. I would comment that it's good that this, as I understand it, has been codified in Regulation A and, therefore, remains on the books so that we can bring it back if economic conditions require that. Just an interesting point—not a point that has any particular policy relevance, but it was pointed out to me when my staff and I were discussing this—this is actually retiring the third discount window because the Federal Home Loan Bank lending was a second discount window in the process.

Turning to the exit discussion, I am going to premise it by saying that this is a preliminary discussion, so I reserve the right to change my mind after more discussion and hearing more about it. Near term, I would focus on redemptions only. I think we do not want to take chances with any interpretations that are going to create an effect in market rates. I think

that a redemptions-only policy could last for all of this year, conceivably even longer. I am open to sales when the market appears that it can absorb the sales, but I do not think that this should be signaled near term. I kind of like President Kocheerlakota's approach of small, steady, and well-communicated sales when that time comes.

Regarding question 2, I think the policy should be to redeem all agencies and MBS and some Treasuries. As I'm thinking about it, we have a longer-term objective, and that is to change a proportion of MBS to Treasuries in whatever we consider to be the year in which that is adjudged. So it seems to me that we have to be trying to manage that proportion while, at the same time, we are reducing the balance sheet. That is the way I would think of that question.

Regarding sequencing, this is the key question, and I see arguments on both sides of ex ante and ex post, and I really don't have a strong conviction yet. There certainly is a lot of uncertainty about our ability to control the federal funds rate when we get around to rate tightening, and some would argue that it may not even be necessary to control the fed funds rate. If I had to decide today, I would favor draining relatively close to a point of actually taking a rate action, but some draining in advance, recognizing that it's very likely going to tighten financial conditions at the longer end of the yield curve. But I do think it reduces uncertainty and just raises the probability that, if we are dependent on the fed funds rate or we want to affect the fed funds rate, we will be successful at doing so. And I do think we have maybe some time in the course of this year to explore this question a little further.

As regards the longer run, question 5, I prefer moving as close as possible back to previous practice, which would be all Treasuries across the maturity spectrum. I'm favoring a corridor system. It may be an open question when we get to that point of whether we are focusing on monitoring or targeting a market rate, but I do think a market rate within the corridor

is clearly going to be a centerpiece of how we think about monetary policy. Again, I think we have some time to consider this further. My instincts here are to prefer the tried and true if we can get there, and that's something like a corridor system with the fed funds rate as the market rate in between. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. First, let me make clear that I really appreciate the tremendous volume of staff work that has gone into this meeting, particularly in New York and the stuff that is posted on MarketSource.

I support the staff's recommendations about the primary credit facility and the TAF. I agree with President Rosengren's suggestion about communicating it carefully and agree with President Fisher about wanting to be able to consult with our boards in a face-to-face meeting. But that should allow for that. I also agree with President Yellen on the advantages of unanimity.

In the long run, I think we should go to Treasuries only. I think others—including Presidents Yellen and Fisher—have said well that we should be out of housing finance and the associated political entanglements. I am highly averse to our issuing debt instruments like reverse RPs and the term deposit facility. This has already been noticed and has garnered criticism at the American Economic Association meeting. Of course, evidently we don't put much stock in the views of economists, but still there people said on podiums that it made us look like a hedge fund and that this was an end run around the Congress and was dangerous for our independence. I think it paints a target on our portfolio and just makes it tempting for the Congress to legislate or the Treasury to ask us to fund things outside the congressional appropriations process. And I think we should strive mightily to avoid doing that.

About the interest rate on reserves and the federal funds rate and other interest rates, I sort of agree with President Yellen. I think we targeted the federal funds rate for decades because we couldn't pay interest rates on reserves. But I think President Bullard is right: We should think about this in terms of our overall effect on market rates. I am struck, though, by the contrast with last year. Last year we were talking about the effect of additional purchases and the addition to our reserve balances and the effect on monetary policy and the easing of financial conditions. And I expressed some apprehension that the asset purchases that had occurred up to the middle of the year had not really increased bank reserves and that later in the year we would see increases in bank reserves as there were no longer borrowings to displace when we made purchases. Essentially the quantitative easing hadn't come yet. It was going to come, and it might have large easing effects. You all convinced me not to be so afraid. In the end, I think the effects were small; they are what you see in that demand curve for federal funds, that scatter plot of the federal funds rate, where it goes down to 12 basis points as we push reserve balances out. Well, on the flip side of that is that draining reserves by selling assets without changing the interest rate on reserves ought to have an effect of a similar magnitude. So I am not sure I would understand the kind of skittishness on this side when I was persuaded to be more sanguine when we were increasing reserve balances last year.

I agree with President Bullard that we shouldn't be as fearful of the bogeyman of market disruption if we were to sell a dramatic amount of assets. The U.S. Treasury, after all, is selling quite a large amount of assets, and we ought to benchmark our estimates of the rate effect of selling MBS or Treasuries, against what that would imply for the effect of deficits on interest rates now. That is a useful comparison. It strikes me that 100 basis points is on the high side measured against that benchmark. So to the extent that our mortgage-backed security holdings

have depressed MBS spreads, I am not concerned about those spreads widening. The evidence suggests that we have pushed down those spreads below fundamentals in some sense. I will talk more about this later today or tomorrow, but if housing flat-lined over the next two years, I think that would not detract much from the recovery. I think 0.6 percentage point in 2011 is what the Greenbook has.

I would also point out that there was a table in a MarketSource report that showed that other—this “other” category, which I think the Desk identified as mutual funds of various sorts—holdings of mortgage-backed securities have gone from \$1.8 trillion to \$1 trillion, suggesting that there is a fair amount of capacity out there institutionally and operationally and infrastructure-wise to absorb these things without some short-run disruption going on. As I said, in the long run, I would like us to get as soon as possible to U.S. Treasuries only.

In terms of timing and speed, it's true that the Greenbook's forecast is first to raise rates at the end of 2011, but I don't think we should lose sight of the confidence bands around that, both in the Bluebook analysis and in the market's analysis. If you look at it, it looks as though there is a fairly substantial chance, maybe as much as 30 percent, that we raise rates by the end of the third quarter or sometime in the fourth quarter. As we think about this in the next couple of meetings, around midyear we ought to think about, well, maybe we need to be preparing for wanting to raise rates. But the natural way to think about this is that we are going to undo quantitative easing for a while, and when we have IOR—and I am calling it just IOR; I am dropping the E [laughter], based on trouble with it, just for safety's sake—we should think about this as withdrawing a quantitative easing that seemed to have relatively small effects at the end of last year and see if that has some grand signaling effect about when we are going to raise interest rates. I think we use the statement to manage that as we see fit when the time comes.

One last thing. I was struck and somewhat amused by the contrast between the state-contingency option and the other ones, as if the other ones would be such firm, iron-clad commitments. I am sort of reminded of Brett Favre announcing his retirement. [Laughter] They seldom issue a statement that doesn't include the boilerplate language that we're going to naturally reevaluate things in life. I think what we are going to do we are going to end up doing in a way that is going to communicate that, Yes, we will look at this again. I'm not sure we could possibly bring ourselves to commit in an iron-clad way to a schedule. So those are my comments, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. It's a surprisingly difficult topic, and I thought the memos were very helpful. When you said we should be brief, I felt a little like somebody who is resubmitting a paper to a journal editor and has been told to cut 5 or 10 pages. I can assure you I have done my best but— [Laughter]

We have many tools, and this wide array of novel and untested tools raises many issues. Complexity leads to difficulties in communicating our policy strategy to the public and perhaps to ourselves. Complexity also has execution risks. Uncertainty exists regarding the effectiveness of these tools, and so we should seek robustly powerful tools, and having more choices leads to more-difficult consensus building. Now, at some level there is a near economic equivalence among some of these tools, and I agree with President Bullard's comments on that. Each tool puts pressure on remaining reserves and so increases the opportunity cost of lending the remaining reserves to borrowers outside the reserve market. So there is a near indeterminacy, it seems to me, in the best choice of policy tools, which means we could really talk endlessly to no real conclusion on this. It is going to depend a lot on our preferences for

these. I think we need additional criteria to choose, and actually the presentation talked about some additional criteria. I would say that simplicity, communicability, effectiveness, and robustness are the criteria, and the ability to facilitate consensus-building should be an important element there. I doubt that my preferences will entirely deliver on these scores, but they are worthy objectives.

My first observation is to agree that interest on excess reserves, the rate that we pay, can be effective for tightening credit conditions. I do wonder how well this works in terms of building a consensus. I think the evidence is mixed actually. To some, a virtue of using the IOER rate alone is that no preparations for draining reserves are necessary, so a longer evaluation of economic conditions is possible. To others, the downside might be that there is no commitment to beginning the tightening process after we have provided unprecedented levels of accommodation, and so you don't have that commitment. Which is more important is probably in the eye of the individual policymaker at this point. My conclusion, though, is that a heavy emphasis on the IOER rate as the main policy tool makes sense. However, because of the uncertainty surrounding the use of this tool alone, there seems to be a good case for employing more tools in preparation to making IOER most effective.

I think that robust tools seem important. Belts, suspenders, and four-leaf clovers are in order, and so my preferred approach is, I guess, the early drain scenario. Use a number of tools to drain reserves in advance of the most explicit tightening phase regarding short-term interest rates. The analysis indicates that the funds rate is unlikely to increase above our 0 to 25 basis point range, with excess reserves above, I would say, \$500 billion, although that is subject to uncertainty. We can prepare a reserves path for a baseline economic scenario in which we begin tightening the funds rate and the IOER rate in the future. This is getting at what Governor Kohn

was asking, I believe, in terms of lead times for how long it takes for the reserve-draining tools to hit that \$500 billion. For best planning purposes, I would think about picking an expected date for our tightening. This is the hard and controversial part, which I think is low on the consensus-building aspect. We should get the reserves to this \$500 billion using all reserve-draining mechanisms, although I would save asset sales for later and sequence them so that they hit this cumulative amount by the expected date.

So this is a plan. You know, August 2010 is feasible, according to the table. That seems too early, but how does it do in terms of state-contingencies? Well, if the economic situation is appropriate on the chosen date, then we're in business. We can begin raising the IOER rate. The fed funds and other short-term rates should follow immediately because we have prepared that. I think it would be more robust. It's more likely. If the tightening is needed sooner than date C, well, if Governor Mishkin were here, I think he would say, "Use IOER, baby," [laughter] because that tool by itself would probably be enough, and so that increases the robustness. Then, of course, if we hit this date before the economic situation is right, then either we slow the drain if we had seen it coming, we march in place for a while, or we reverse course even if accommodation is needed; I hope not.

What are the overall drawbacks? Well, draining reserves according to this baseline plan is neither simple nor easy to communicate. Combinations of tools inevitably complicate matters. Using IOER alone might avoid this. So that's the simplicity argument. We are unlikely to agree fully on a time path. That is the really difficult part in all of this. We are kind of sidestepping that issue, or we all agree that it is not imminent and that is not a key part of what we are talking about. But the advantages are the robustness of this approach and the consensus-building, if we could agree on the date. We begin to prepare for more-restrictive policies, but we do so in a way

that is likely to maintain maximum accommodation while the economy continues to need it. I think we would see only small tightening effects as we start off with the reserve draining, and we are that much closer to effective tightening. So the bottom line—I think it is important to calculate the lead times needed for this, and that will be important.

On the odds and ends, I agree with Governor Kohn’s comments about the primary credit rate and the TAF, and ultimately a long-run balance sheet of all Treasuries would be preferred. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I also support increasing the primary credit rate to a 50 basis point spread, reducing the term to overnight on primary credit, and reducing the TAF auctions to zero after March. As others have noted, we will have to communicate that these changes are appropriate given the absence of liquidity problems and that they are not a shift in the stance of monetary policy.

Turning to the strategies for removing our accommodation, I also want to start by thanking the staff for the background memos, and in particular Jim and Spence for providing a coherent framework for discussing the issues that we face in exiting from the current, more complicated monetary policy environment. The memos were very helpful to me. I also think that it is helpful to recall that we had a fairly effective operating regime and communication strategy prior to the crisis. So I would like to return to the more familiar, less complicated pre-crisis policy regime as soon as practicable. Because I favor returning to the pre-crisis operating regime—that is, relying mainly on short-term interest rates as our active policy instrument—I prefer to keep the unwinding of our asset holdings in the background.

To this end, I favor a very gradual sales strategy to reduce the size of the balance sheet. Because even a steady and gradual pace of asset sales constitutes some reduction in the current degree of policy accommodation, we may want to commit initially to a more conservative redemption-only policy and then only later announce plans for gradual sales. The staff memos point out that a very gradual sales strategy enables us to smooth out an otherwise variable rate of asset redemptions. Some forward guidance about the balance sheet would be helpful to keep market expectations in line with this Committee's intended path.

In answer to question 2, I support the redemption of all parts of the LSAP portfolio including all agency debt and mortgage-backed securities along with some Treasuries. On question 3, I favor draining reserves with reserve-management tools prior to increasing our primary policy rate. As noted in the staff memos, lower reserve levels would enhance the effectiveness of our operating procedures by improving the connection between the fed funds rate and the rate on excess reserves. An additional factor in my preference for early reserve drain is that we do not have much practical experience with these reserve-draining instruments, and therefore, we should allow some time for them to be deployed and the desired amount of draining to build up. A clear demonstration of these tools intended as technical preparations and not tightening per se would bolster the public's confidence in our abilities. Additionally, an early reserve drain may be helpful in containing inflation expectations.

The Desk reports were very helpful in my thinking about question 4. It was reassuring to me to hear both that we likely have the ability to ramp up our use of these reserve-management tools quickly and that this action would not be a surprise to market participants prior to any rate increase. Still, I think it would be practical to begin with small amounts, like \$10 billion to \$20 billion, and then to increase the drain steadily toward a more aggressive draining of reserves,

as long as, again, the effects on financial markets remain minimal. If we do undertake this draining of reserves in advance of an increase in our short-term interest rates, it is going to require effective communications, as was pointed out in the Clouse and Hilton memo.

My responses to questions 5, 6, and 7 are influenced by my desire to return to a pre-crisis operating regime. There is already enough uncertainty about our policies and the state of the economy without introducing additional changes. I would try to move toward an all-Treasury portfolio similar to what we had prior to the crisis. I also favor working to retain the fed funds rate as our primary policy tool. That said, I am concerned that the characteristics of the fed funds rate might change or could deteriorate significantly, but I am not so concerned that I would want to introduce more confusion by adding another complicating issue at this point. I think it is important to lay out a strategy, and I think a return to our pre-crisis operating procedures is a good starting point. Of course, we may gain experience and discover that we have no choice but to make further changes. For the maximum effectiveness, as others have said, whatever strategy we choose, I presume that we will find the appropriate forum for laying out our approach in as much detail as we can in advance so that our subsequent actions and statements would be understood within the broader context that we have in mind. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. First, on the housekeeping items, on the discount window, I share the consensus that most have spoken about. I think markets will perceive that a bit as though it is a FIFO—first-in, first-out—issue. We will have to communicate what it means, which is to say that, in spite of our best efforts to separate liquidity policy and monetary policy, I still think that market participants are going to view this, rightly or

wrongly, in the eyes of people around the table to be a next and meaningful step. So we just need to judge accordingly. On the TAF recommendation, I concur.

In terms of the broader strategies for removing accommodation, Mr. Chairman, let me cherry-pick a couple of goals that have been described today, both in the materials and at the table. In a time when there is a tremendous amount of policy uncertainty here in town broadly and the economy has a lot of uncertainty, I am more attracted to policy prescriptions that provide as much clarity as soon as we can so that we aren't adding to that uncertainty. I think of our preeminent goals here as ensuring our credibility so that: we can increase control and the perception of control over policy rates; we can be perceived to be able to effectively tighten financial conditions; and we can find our way back to a balance sheet and a regime that preceded this crisis. Those are difficult, and there are tradeoffs. But those are my priorities in terms of goals.

In terms of overall disposition, in which I think the memos really rang true—and I think the memos, at least for me, were particularly useful in being very explicit about what we know and what we don't know: that is, the substitutability between our balance sheet and short-term rates is imperfect. The ambiguity of what we were buying when we were buying these long-term assets, ambiguity on what we are buying when we reduce them, suggests to me that it is not a dimmer switch that we are controlling well but more like an on/off switch made with a couple of levers. But we are not as certain as possible on that. So if you take that disposition when conducting policy, I think we have to err on the side of mitigating that ambiguity as much as practicable for reasons of our own credibility and effectiveness. That prejudices me to want to shrink reserves somewhat sooner and with more force than redemptions alone would allow, so that when we move our policy rate we are more confident as to its effects.

With respect to asset sales, I obviously wasn't crazy about the purchase of the last several hundred billion of them. So, at some level, I would be thrilled just to exit them quickly and with force. But I am reminded of that brokerage firm commercial, I think from President Bullard's home state, where the fellow buys the piece of art and then immediately sells it. [Laughter] And I think the policy reaction function, if we were to exit with any dramatic swiftness after this huge increase, would suggest that the policy process seems confused and confusing. So as attractive as that might be, and hasty, I think it is probably not the best course forward. I think a more reasonable course forward is to begin sales in the second half of this year as a supplement to our redemptions, by which we would pre-commit to modest levels of sales that could grow over time, perhaps along the lines of what Narayana suggested. But I think an important distinction for certainty is that it would be the baseline forecast. There would be a high but rebuttable presumption that the sales under that forecast could change over time, but I think that would bring clarity in the mortgage finance markets and clarity in terms of the size of our balance sheet. It seems uncomfortable to me that the balance sheet would shrink simply by the rate at which redemptions and prepayments come in on the mortgage-backed securities portfolio. It doesn't seem to me to be a pro-active way of making policy.

With respect to redemptions more broadly, I would redeem all agency and MBS and some of the Treasuries. On the sequencing question, I favor the ex ante strategy—that is, I recommend using these tools prior to an increase in the interest rate on excess reserves. I think it is useful on the inflation expectations questions that continue to be alive and well. And it certainly does raise a communications challenge, but I think it is one that we can deal with.

On the question of volume, Mr. Chairman, I must say I don't really have a magic number. But I would be inclined to push down excess reserves so we can be more effective when we decide we have to make more-meaningful steps to remove policy accommodation.

On the question of the long-run balance sheet in the steady state, I think we should "try to go home again." It is difficult, but I think that we should try to, and I think we should be pretty explicit publicly about that desire. I am concerned about the efficacy of our operating target. I think it is useful to have a market interest rate as an operating target. I am not wed to the federal funds rate per se but don't yet see a suitable alternative.

And on your final question with respect to the long-run operating framework, I don't think we need to come out with a grand design. So what I'm suggesting is that we need to provide clarity and not be a source of policy uncertainty. But I think from your first op-ed piece in which you outlined an exit strategy, we have pretty smartly gone through the liquidity facilities. I think we are smartly now going through the next of these. I don't mean to suggest that we should unwrap the final game plan until we are totally complete with it, but I think this next chapter over probably the next two meetings will be useful, so that our credibility on exit will be superior and will continue to give us the benefit of the doubt as we move forward through what is no doubt going to be a tough economic environment. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. Like everybody else here, I look forward to the day we can normalize operations. In fact, having joined this Committee in August 2008, I have a personal objective of experiencing normal here at the Federal Reserve. [Laughter] So with that, I think returning the primary credit rate to normal and the communication strategy that has been outlined is the way to go. It's important that we tie the primary credit rate to closing the liquidity

facilities and make raising this rate effectively closing that as an emergency tool as well. When I was a banker, I always likened borrowing from the Federal Reserve as borrowing from my father. And I think we need to return to that sort of a stance. So whether that is a 50 basis point spread or a 100 basis point spread, I think we need to decide before we make that move, because if we make a quarter move and then a month or two later we decide, no, we want another quarter and we want to spread that, it becomes much more difficult to communicate that it is a liquidity action rather than an interest rate action.

When I think about normalizing,—I moved to question 7—I think we need to think about our longer-run operating strategy sooner rather than later. As we have talked about long-run and temporary draining tools and what those really mean, I look at these projections, and they show us with a very large balance sheet for a very long time. So it seems to me that the long run is that time period when we are showing right now a projection of a large balance sheet.

On question 6, I am concerned about the federal funds rate as an operating target. It's not clear to me yet what set of conditions leads to a restart of the federal funds market beyond this GSE market. And I think we need to have some thoughts about or be prepared for at least a temporary state where there really is no fed funds market. So we need some way to communicate what our targets are that don't depend on there being such a market, although I was encouraged to hear Governor Kohn say that the market would come back. For all of those reasons, I am in favor of the least disruptive ways to reduce our balance sheet as quickly as possible.

As for question 2, I would start with redeeming all agency debt, MBS, and Treasury securities. I think we need to communicate our intention for this large MBS and agency portfolio that we have, and we need to start that communication with the end of the purchases.

At some point—maybe not immediately—we need to make a commitment to exit the MBS and agency portfolio through both maturities payments and gradual sales. This leads me to question 5, where my preference is for all Treasuries. Finally, I would favor the use of draining tools prior to raising the rate of interest on excess reserves. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I think I have Kevin's criteria and Don's conclusions. Let me try to explain why that is where I believe I am, stipulating, as did Dennis, that this is a preliminary discussion from which I assume all of our views will evolve. The two criteria that I find I have uppermost in mind with respect to all of these issues are, first, credibility, and second, my substantive concern about cutting off too soon what is still a halting and potentially fragile recovery.

With respect to credibility, I think there are two subcomponents—one of which many of you have mentioned, quite rightly—communication. At the risk of a somewhat unpleasant metaphor, I think we need to let the markets, the newspapers, and everybody else masticate, digest, and regurgitate what it is that we are doing so that they are not in a position of constantly speculating, does this little action here mean the following or does it not? But there is a second part of credibility, which is that we need to be effective and be perceived as effective when we act. There are a lot of uncertainties here. Many of you have articulately explained how many uncertainties there are. But I don't think we can afford to be seen as doing too much on-the-job training, even in these unusual circumstances, because if we go out there with a proposed course of action and then two meetings later say, "Well, it's not quite working out the way we thought, and we are going to dial it a little in the other direction," regardless of the short-term wisdom of that move, I think we will have lost an enormous amount.

With respect to cutting off the recovery, I think this is just probably a different substantive analytic and policy predisposition that divides us somewhat. But my sense, as we will discuss tomorrow, is that the recovery is less well entrenched than probably some of you believe. With respect to our balance sheet, though, whatever the merits of getting into this position, we are in it now. We have these assets, and unlike Jeff, I think that, although I know that countless bytes will be put onto disks in the future analyzing these programs, there was an effect and it was a fairly significant effect on mortgage markets and long-term interest rates generally. And I am concerned about any move—such as significant asset sales—early on that might plausibly lead to a significant disruption of those markets.

So implications for just a couple of areas: On the discount rate issue, I am kind of with everybody on the general point. But I want to emphasize something that Charlie Plosser and Betsy said, which is, notwithstanding what I think is Kevin's quite correct caution that we are never going to get everybody to separate liquidity policy and interest rate policy entirely, we ought to try by doing what Charlie suggested—which is to say, let's wrap up everything that we think is liquidity ASAP, and let's get our public communication strategy such as to say that is what we are doing. The discount rate move is tied to the TAF, which is tied to the rundown of the TALF facilities, and that's basically what we are about. And if we repeat it enough, we'll achieve that first end, I hope, of making people really understand. It has for me the side benefit of taking away the notion that we have to feed the beast and do something every meeting, which appears to be walking backwards. You know, I don't think we want to get ourselves in the mode where we have to throw a maiden over the cliff to the dragon at every FOMC meeting.

[Laughter]

So, then, what about the longer-term exit strategy issues? Well, as I said, I find myself most in agreement with Don, not because I had those views when I came in—I had sort of inchoate views—but Don convinced me in just what he was saying a few moments ago. But I want to cast it slightly differently, with Kevin’s criteria in mind. I am worried about cutting off the recovery prematurely, and that is why, as Don said, I don’t want us to move until we are really ready to move and we really want tightening to take place, keeping in mind what Kevin and I would harp on, which is the credibility of our actions. When we move, we have to be really sure that we are seen as having an effect and that the tightening is palpable, and people aren’t sitting there saying, “Geez, you know, they have all these assets and reserves floating around and they’re not having the effect that they want.” So that is Don’s sequencing of some pre-move, but close to the moment. Draining plus the move plus asset sales intended shortly thereafter seems to me to use multiple instruments and thereby maximize the chance that we will have an effect. But with my own caution, I really want to wait until I am convinced that we are not putting the recovery at risk. My sense is that, when we get to that point, we want to move quite robustly using these multiple instruments. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. Just, first, on the discount rate and the TAF, I’m completely on board. I just want to present one issue. What you do with the “extended period” language immediately following what you do with the discount rate is really significant. If you changed it in February and then removed the “extended period” in March, it would be a very different signal to the market than if you kept the “extended period” language in place. If we think we are going to keep the “extended period” language in place in March, then I think you are going to be able to communicate pretty clearly. But if you take it

away, then people are going to start to connect the dots even if you didn't intend it that way. So I think doing it in February is better than doing it in March, just to get it out of the way and tie it up with all of the other things that we are doing on the liquidity side.

In terms of the broader set of issues, it is really interesting to hear everybody. There are probably 17 different views. I start with, what is our goal here? Our goal is to communicate clearly. And why do we want to communicate clearly? We want to communicate clearly because we want to keep the risk premium from widening. We want to keep volatility from increasing. And we want to keep inflation expectations low. The tension is that it is hard to communicate clearly when you don't know how all of these things are actually going to work in practice. So there is a tension between laying out as much as we can, subject to precluding us learning as we go. And so I think this is going to be very, very challenging in terms of the communication fronts. I think the markets do need guidance, but we are going to have to be very careful in crafting our guidance so that we don't unnecessarily limit our ability to learn as we go, because we are going to know a lot more 6 months or 12 months from now than we know today.

In terms of what to do, my view up until maybe a week ago was that we could exit smoothly by using just the IOER tool. So my preference until a week ago was to use the IOER first and drain reserves only if the relationship between the IOER and the funds rate turned out to be very sloppy. Why drain the reserves if you don't really need to do so? We could reduce the risk of that sloppiness by doing things like reserve collateral accounts or reverse repo agreements with the GSEs. So that was where I was. I am no longer there, and so let me explain why I have changed.

It still makes sense to take those moves to tighten up the relation between IOER rate and the federal funds rate, so I think it still makes sense to explore doing the reserve collateral

accounts. But I have changed my view because there are two other things going on. One, inflation expectations have gradually drifted up, and we tend to keep dismissing that. But there does seem to be some updrift, and it does seem to be tied to some residual anxiety about our exit. You can see that in terms of the skew in swaption prices; there is a small probability placed on a very large increase in inflation by some proportion of the populous. That makes me feel that our credibility here is really, really important. The second thing is that the market participants, when you take this survey, have a very strong view about how we are going to sequence it. It was not as broad a range of views as in this room. The market view is that we are going to drain a bunch of reserves, then we are going to raise the IOER rate, and later we are going to do some asset sales.

So if we are really pretty close to indifferent between these two strategies, it seems to me that communication is going to be a lot easier doing it the way that the market expects rather than doing something very different. Then we have to re-educate the market about why their view is wrong and our view is right. So I think that where the market is today is not immaterial in terms of how it's going to affect our ability to communicate. In terms of the fact that market participants are worried about inflation, I don't share those anxieties at all. But my view is, even if I don't share them, we have to consider them in terms of how we exit. There's no reason to take a risk unnecessarily that inflation expectations become unanchored. So if draining the reserves first demonstrates the efficacy of the tools and that makes people more assured that we can exit smoothly, then I think that's a pretty strong argument for doing it in that order.

Regarding asset sales, I do not believe we should use them prior to draining reserves or raising the IOER rate. I think they are a blunt tool. We have a lot of experience in terms of how the IOER rate affects financial conditions. We have basically no experience in terms of how

asset sales affect financial conditions. So in terms of risk, I think that I would put asset sales later. I wouldn't rule them out as we go down the road, but I would definitely do the sequencing— reserve drains, IOER rate, and then maybe asset sales later, depending on where we are going.

Regarding the longer-term issue of our framework, I heard around the room that it was either a floor or a corridor system from most of the people who talked about it. It seems to me that we don't have to make the decision between those two things quite yet. We are going to learn as we go through this process. I guess I feel that it is premature to decide what we want before we have a chance to actually learn it because we are going to learn a lot over the next few months. That is about it. Thank you.

CHAIRMAN BERNANKE. All right. Thank you for a very good discussion, and thanks to the staff again for terrific support. I am going to try to summarize a bit. I think I actually heard a good bit of agreement around the table, not complete agreement, and so please understand that I am not trying to represent everybody's point of view equally. But let me just try to draw a few conclusions, and we can continue to talk about this.

Obviously, whatever we do, I think there was a lot of sense that we need to be as clear as possible, to communicate in advance what we are going to do as much as we can, and to try to remove uncertainty where possible. There was a lot of agreement on the primary credit rate and on the TAF. We have potential statements tomorrow that involve announcing the wind-down of the TAF, although the statement is not clear about whether we go to zero or hold the last one in abeyance. We can discuss that tomorrow, but I think there is agreement that we are going to go down on the TAF. On the primary credit rate there was also agreement. People made the point that we need to be very clear and careful about our communications, so in particular I need to

introduce this idea in my testimonies. Another point that was made was that we need to have all of the Reserve Banks requesting this discount rate increase, which I think is also important.

What was not quite so clear in the discussion is whether we should try to do this in February or at the March meeting. What I would like to do is ask Brian Madigan and the staff to consult with all of you after this meeting, and you should think about when your board meetings are scheduled, and just think about logistics, first of all, and what is feasible. And could we get all of the requests in and then do it all by late February? Is that feasible? That's the first question. Then, we will poll you and try to find out what the preferences are and, if necessary, we can have a videoconference. But I hope we can come to some conclusion by just polling the participants. So that is the primary credit and the TAF, for which we will go ahead and take those additional steps to continue to close down the liquidity facilities.

On the ultimate shape of the balance sheet, there was a great deal of agreement that we should go to Treasuries only and either shorter-term or at least a greater variety of maturities than we have now. We need to continue to discuss the ultimate operating regime. A number of people mentioned a corridor system, but I think there is a sense that we want to go back to short-term interest rate targeting. Whether it is within a corridor system or the old system we had before, this can still be discussed, but that's the direction.

On redemptions, I think I heard that everyone wants to redeem all agency securities, MBS and agency debt. On Treasuries, there are some differences in point of view. I think the suggestion I would make is that we redeem all of the Treasuries as they come due. I would leave it to the Desk—and we can discuss this later—to the extent that you want to replace any of the Treasuries, they should be with very short-term instruments, both to shorten the overall maturity

of the SOMA and to give us the flexibility to reduce reserves easily in the future if we need to. That would be my take-away from this.

There is a lot of agreement that we don't want to hold MBS indefinitely, although I would point out that the politics cuts different ways. On the one hand, it is true that we don't want to be the third GSE, and I agree with that concern. On the other hand, I think if we take unnecessary large capital losses, those would also probably be a big problem for us politically. We can take capital losses if we need to, but I don't think we should go out of our way to take capital losses if we can avoid it. So I think we ought to consider something along the lines of what President Kocherlakota described as a reverse taper. Perhaps we should announce at some point, not immediately, that we are, say, not going to be selling in 2010 or for some fixed period and after that we will be selling in some baseline trajectory. I don't think we have to decide this, obviously, in this meeting. I would like the staff to please look through alternative strategies and try to figure out what the implications would be for the size of the balance sheet, for reserves, for capital losses, and other issues that we might be concerned about. So let's proceed that way.

On state-contingency, I liked Governor Warsh's view of a dimmer switch versus on/off switch. I think we all agree that we want to be state-contingent, but I don't think we want to be varying purchases and sales by small amounts, according to small changes in the outlook. But, obviously, if there's a major change in the outlook, either better or worse, then we would have to be prepared to respond to that. So, again, we would like to go for a baseline that gets us way down on MBS within a reasonable period, certainly within Betsy's term.

MS. DUKE. You're going to have to hustle. [Laughter]

CHAIRMAN BERNANKE. With respect to the draining of reserves, I think there was a lot of agreement, not universal, that we should try to drain some reserves first. My sense is—and

this would be my preference also, and I think this is somewhere near the center of gravity—that we should continue to test our reserve-draining techniques aggressively, to make sure we have a lot of comfort with them. That would mean at some point ramping them up to some size—again, because small is not the same as large, and we have to be sure that they can operate at some size. But we should continue to take the posture that these are testing, that we are trying to understand these tools and make sure they work and demonstrate that they work. When the time comes and we think we are very close to raising interest rates, we ought to then move aggressively and announce a meeting or two in advance that we will be draining more rapidly and hope to get at least a significant decline in reserves at the time that we raise rates, in order to have a more secure effect on the economy. That said, we all understand this depends on how things evolve. If things change dramatically and we end up raising rates very soon, then we may not have the luxury of developing this whole process, and we will have to go with what we have. Fortunately, the IOER rate seems likely to work, but it would be helpful to have some reserve drains.

So those are just some observations. Oh, one last thing on the target rate, I don't think we are quite in sync on that yet. There is, obviously, a desire to go back to the federal funds rate, if possible, and it may depend on the tools we use. If we use the reserve collateral accounts, for example, that might reduce the viability of the federal funds rate. It seems to me right now that the major alternatives being suggested are either the IOER rate, the IOER rate plus some monitoring of a set of short-term rates, or the federal funds rate. I think those are the options that are on the table, and we will have to think about them, and that will be part of our thinking about the long-term operating procedure and also the tools that we are going to use to drain reserves. So there are some observations. Any questions or comments? President Kocherlakota.

MR. KOCHERLAKOTA. Mr. Chairman, I think you, as usual, ably summed up everything that people have said. The one question I had was about redeeming Treasuries and using the proceeds to buy short-term Treasuries, while at the same time draining reserves. It seems as though we are somehow in the position of both borrowing and saving at the same time.

CHAIRMAN BERNANKE. Buying short-term Treasuries would, of course, add to reserves. Right? But if they are very short-term Treasuries, then they can be easily disposed of as part of the draining process as we get close to the moment when we want to raise rates.

We now have a decision to make. We could now go ahead and hear the staff presentation, perhaps without Q&A, or with Q&A, or we could start tomorrow morning at 8:30. Is there a general feeling? Can we go ahead and just hear the presentation?

MR. FISHER. 8:00?

CHAIRMAN BERNANKE. 8:30?

MR. TARULLO. 8:30, but you have to be brief, Richard. [Laughter]

MR. FISHER. Hey, I am not a problem.

MR. PLOSSER. 8:30 tomorrow morning.

CHAIRMAN BERNANKE. All right. I hear sort of a general preference. I'm sorry. I apologize to the staff—you have sat here for four hours.

MR. STOCKTON. We always do. [Laughter]

CHAIRMAN BERNANKE. All right, before you walk away, we do have one action we have to take. Believe it or not, this is a record, four hours into the meeting and we have not yet ratified the domestic open market operations.

MR. KOHN. So moved.

CHAIRMAN BERNANKE. Without objection. Thank you. We will continue tomorrow morning at 8:30 with the presentation by the staff. Thank you. There is a reception and a dinner for your convenience available upstairs.

[Meeting recessed]

January 27—Morning Session

CHAIRMAN BERNANKE. Good morning. This is the continuation of our joint FOMC–Board meeting. We are at item 8, the economic situation, and let me turn to Dan Sichel. And for President Lacker’s benefit, we have Dan Sichel, Mike Palumbo, Dave Stockton, Nathan Sheets, and Brian Madigan.

MR. LACKER. I’m sure the rest of the group also benefits from that as well. [Laughter]

CHAIRMAN BERNANKE. Thank you. Dan, please.

MR. SICHEL.³ Thank you, Mr. Chairman. I’ll be referring to the material labeled “Staff Presentation on the Economic Outlook.” The economic situation since the time of the last Greenbook has, for the most part, unfolded about in line with our expectations. One wrinkle of note, however, is that the improvement in economic activity appears to be more front-loaded than we had projected in the last Greenbook. As shown in the top left panel of the first exhibit, we have revised up considerably our estimate of real GDP growth in the fourth quarter and now expect it to clock in at an annual rate of better than 5 percent. But we have also marked down the first-quarter growth rate. The panel to the right pinpoints the source of these revisions. The contribution of final sales to real GDP growth (lines 1 and 2) was revised little in both quarters, but the contribution of inventories (lines 3 and 4) was marked up sharply in the fourth quarter and down in the first quarter. While part of this revision reflects an accumulation of wholesale inventories of farm products, the revision also appears to reflect a timing shift of production adjustments.

The middle two panels provide some additional perspective. As shown by the black line on the left, firms began to draw down inventories in 2008, and this liquidation became more aggressive in early 2009. The pace of drawdown appears to have slowed sharply in the fourth quarter as firms apparently became more confident about their prospects and moved production rapidly back up toward sales. As noted to the right, this slowdown in the pace of liquidation came sooner than we had expected in the December Greenbook as firms across a wide swath of the economy appear to have pulled forward production adjustments that we anticipated would have occurred later.

Apart from inventories, the recent data have been consistent with our forecast of strengthening final sales. The bottom left panel focuses on the goods component of real PCE; the underlying data on retail sales and unit sales of motor vehicles through December point to a moderate fourth-quarter gain, and we expect another decent-sized increase this quarter. We also expect solid near-term gains in equipment

³ The materials used by Messrs. Sichel, Palumbo, and Sheets are appended to this transcript (appendix 3).

purchases. The panel to the right shows that both orders and shipments of nondefense capital goods excluding aircraft moved up recently, on net. With orders now having moved into alignment with shipments, backlogs of unfilled orders are stabilizing. Moreover, an important contributor to the recent uptilt in orders and shipments was the tech sector, where falling prices imply that the recent nominal gains will translate into larger increases in real investment.

The next exhibit turns to the medium-term outlook. As shown in the top left panel, we made only small changes to our forecast of strengthening economic activity. The bullets to the right highlight the main factors that we believe will contribute to the recovery: accommodative monetary policy, financial conditions that continue to become more supportive of growth, reduced drag from past declines in wealth, and improvements in household and business confidence.

Although changes from one Greenbook to the next are often incremental, a more notable upward revision to our outlook is evident when we look further back in time. The middle left panel compares our forecast for real final sales with that in the June Greenbook. Final sales now appear to have been considerably stronger in the second half of last year than we had projected last June. We also have marked up our forecast for final sales growth *this year* about ½ percentage point.

The box to the right highlights key changes between the June and January Greenbooks. On the positive side of the ledger, financial developments have been more favorable than we had anticipated in the June Greenbook. As shown in the bottom left, equity prices have moved quite a bit higher, the triple-B bond yield is considerably lower, house prices appear to be on a more favorable trajectory, and mortgage rates are a little lower. In addition, summary indicators of financial market stress (not shown) have, for the most part, improved significantly faster than we had expected last June; however, bank credit standards remain very tight, and bank credit has continued to contract.

Returning to the bullets in the middle right, we also had a bit more fiscal stimulus in the second half of last year than anticipated, and we expect a little more this year. This extra fillip reflects both the additional package that we assume will be passed this year and other piecemeal provisions that were enacted in recent months, including the expansion of unemployment benefits and the homebuyer tax credit. In addition, foreign growth has been stronger and the dollar has been lower than we had anticipated in June.

On the negative side, we have been surprised on the downside by the extent of the ongoing weakness in employment and some other labor market measures. For example, as plotted in the bottom right panel, total hours in the nonfarm business sector came in noticeably lower last year than we had anticipated last June. Michael will now discuss the outlook for individual sectors.

MR. PALUMBO. Exhibit 3 turns to the outlook for consumer spending, first by describing some aspects of the substantial financial adjustment—most notably, the “deleveraging”—undertaken by households since the onset of financial turmoil. As you can see in the top left panel, the personal saving rate shifted up from close to 1 percent in early 2008 to above 4 percent late last year. We expect the saving rate to remain in the neighborhood of 4 percent over the medium term. The right-hand panel shows that the rise in personal saving appears to reflect a broader retrenchment in the household sector, evidenced by a substantial reduction in the rate of household borrowing. Household debt climbed at double-digit rates from 2003 to 2006 but decelerated sharply in 2007 and 2008 and then contracted about 2 percent last year. A consequence of the recent deleveraging by households can be seen in the middle left panel: Aggregate debt service payments—that is, required principal and interest on existing household debt—dropped from almost 14 percent of disposable income in early 2008 to about 12½ percent last quarter, leaving the debt service ratio at a level last seen in early 2001. We expect this ratio to decrease somewhat further through the end of next year, as growth of disposable income outpaces household borrowing.

Turning to the right, the combination of steep decreases in home prices and stock prices cut the ratio of household net worth to disposable income from its elevated level of nearly 6½ in 2007 to 4½ in early 2009. Since then, home prices have flattened out and stock prices have rebounded, returning the ratio of net worth to income close to its long-run average level, roughly where we expect it to stay over the projection period.

The bottom left panel provides some perspective on the behavior of consumer spending over the course of the current business cycle. The black line shows data and our forecast for real PCE, and the red line shows the level of spending from a simulation based on one of our forecasting models that conditions only on the realized and projected values for household wealth, income, and interest rates. (The main takeaway points are noted to the right.) The chart shows that consumer spending began to fall short of the simulation in 2007 and then dropped far below it in 2008 and early 2009. We think that the sharp tightening in mortgage and consumer credit and heightened anxiety about the potential depth of the recession and job loss (as evidenced by the outsized decline that occurred in consumer sentiment) played important roles in the “shortfall” in spending. We expect consumer spending to continue to accelerate over the course of this year and in 2011, as wealth and income become more supportive of growth and as consumers regain confidence and credit becomes more available.

Exhibit 4 covers real estate markets and construction activity. Existing-home prices, shown in the top left panel, dropped back last quarter, as we expected, after popping up in the second and third quarters. Looking ahead, we expect prices nationwide to be about flat over the projection period, reflecting continued downward pressure from the supply side of the housing market that we think will be roughly offset by improvements on the demand side. One indication of an abundant supply of homes on the market is the Census Bureau’s “homeowner vacancy rate” (the blue line

in the panel to the right), which has remained unusually high despite being down from its peak. In addition, the black dashed line shows that the volume of foreclosure starts picked up over the latter half of 2009, and we expect them to recede only a little this year and next, adding to the supply of homes for sale over time. On the demand side, sales of existing homes fell back last month, broadly consistent with November's drop in the pending-sales index and the notion that some of the earlier surge in sales was induced by the homebuyer tax credit. Nonetheless, as noted in the middle left panel, the volume of existing-home sales rose noticeably over the second half of last year, with demand evidently lifted by the combination of low conforming mortgages rates and low home prices. In addition, a growing sense that prices may have bottomed out in many parts of the country and a gradual increase in employment in coming quarters should contribute to rising demand.

Turning to the market for new construction, the blue line in the right-hand panel shows that sales of new single-family homes moved roughly sideways over the second half of 2009, after having increased last spring. Nonetheless, as shown by the beige shaded area, construction has been well below sales for more than two years, resulting in a sizable liquidation of the inventory of new homes for sale. Indeed, as the inset box reports, the inventory of new homes for sale fell from 545,000 in May 2007 to just 235,000 in November, the lowest reading in any month since 1971. With inventories so lean, we expect construction to move up toward the level of sales during the next few quarters. We expect the stronger overall macroeconomic conditions in 2011 to generate a rising demand for new homes that should provide a further impetus to residential construction.

The outlook for nonresidential construction is gloomier. The bottom left panel shows that vacancy rates continued to rise through the end of last year, and prices of commercial properties fell a bit more. As noted to the right, amid these very weak fundamentals, respondents to the January Senior Loan Officer Opinion Survey, on net, reported expecting the performance of their commercial mortgages to deteriorate further this year. Also, relatively large net fractions of bank loan officers reported having continued to tighten CRE lending standards in recent months, as well as a further weakening in demand for these loans. Against this backdrop, we expect nonresidential investment (outside of drilling and mining) to fall around 7 percent this year and to inch down in 2011.

A theme that continues to pervade much of the recent commentary about the macroeconomy is that conditions appear to be worse for small businesses than for large firms. The top left panel of exhibit 5 shows that, in December's NFIB survey, the fraction of respondents reporting plans for capital expenditures in the next six months (the blue line) remained quite low, whereas the fraction reporting credit becoming more difficult to obtain (in red) stayed high. That said, tight credit supply is probably not the only or even the principal factor holding down their capital spending plans: Indeed, when asked about the most important problem they face, many more small business owners cited "weak customer demand" than cited "financing conditions."

Meanwhile, as Brian mentioned yesterday, spreads on triple-B-rated and high-yield corporate bonds—plotted to the right—dropped further in recent weeks and are now at levels last seen in late 2007. Solid corporate balance sheets and scant defaults in recent months appear to have encouraged investors.

Turning to the outlook for equipment and software investment, the middle left panel notes a few findings from the Reserve Bank survey about firms' plans for capital spending this year. Looking across the responses collected by all of the Reserve Banks, almost 40 percent of firms reported that they plan to increase equipment spending, while just under 20 percent reported that they plan to decrease spending. The most commonly cited factors by firms reporting plans to increase investment were an expectation of strong sales growth and the need to replace IT equipment.

Information about the high-tech sector from other sources has also been upbeat of late. In the middle right panel, you can see that in the NABE survey released on Monday, more respondents expected increases in IT spending this year than expected decreases—a finding that is consistent with corporate reports indicating an expansion of IT budgets in 2010. Other reports suggest that tech spending that tends to be driven by telecommunications “traffic”—such as servers and communications equipment—is expected to continue rising robustly, while spending typically driven by “headcount”—such as personal computers and the local network gear connecting them—is more likely to pick up steam later on.

As can be seen in the bottom left panel, we now estimate that investment in equipment and software climbed at an annual rate of 12½ percent last quarter—much stronger than we projected in the December Greenbook, particularly in the transportation and high-tech categories. Looking ahead, with solid increases in business sales and profits, strong replacement demand, and relatively inexpensive bond-market finance, we expect increases in equipment and software investment to average about 14 percent this year and next.

The right-hand panel provides some perspective on the recent investment data and our projection. The very short bar toward the right indicates that the meager amount of gross investment undertaken in 2008 and much of 2009 was probably barely enough to cover depreciation, so that, by our estimates, the real stock of equipment and software was almost unchanged over those two years—something not seen since World War II. Moreover, even with the double-digit growth rates of E&S spending projected for this year and next, the *level* of investment will still be quite low, resulting in very sluggish growth of the real E&S capital stock. Dan will continue our briefing on the domestic outlook.

MR. SICHEL. An important element of our outlook is the anticipated pickup in private payrolls. As shown in the top left panel of exhibit 6, we expect payrolls to flatten out this quarter and then to begin to turn up more definitively in the second

quarter. Final sales have been growing for a few quarters, which should help businesses gain confidence in the resilience of the recovery, a point supported by recent indicators of business sentiment. In addition, as shown by the blue line in the panel to the right, the recent very large increases in labor productivity have, in our estimation, pushed the *level* of productivity in the nonfarm business sector well above its structural level (the red line). We believe that there is limited scope for firms to achieve further outsized gains in productivity, suggesting that hiring will need to commence soon as output continues to expand.

Indicators of layoffs also are broadly consistent with a leveling-out in employment. For example, the middle panel plots initial claims for unemployment insurance over recent business cycles. The turquoise bars mark NBER recessions, while the yellow shaded region to the right covers the range that we currently estimate to be consistent with unchanged employment. As you can see, claims have just entered the upper end of that range. The bottom left panel highlights some margins of adjustment other than direct hiring that firms tend to use around the time of an upturn in employment. The workweek (the black line) and temporary-help employment (the red line) both have turned up recently. While the recent upturns in these series are modest so far, they are in the range of moves that have been associated with employment upturns in the past, with those points marked by vertical lines for the last two episodes. However, indicators of hiring remain lackluster. The bottom right panel shows a composite index of help-wanted advertising that blends the old newspaper index with a measure of Internet job listings; this series has flattened out recently and has yet to show clear evidence of an upturn. Although we view the available information as supportive of our forecast of a pickup in payrolls, considerable uncertainty attends our forecast of imminent employment gains.

Exhibit 7 turns to the outlook for inflation. The red line in the top left panel shows our estimate of the NAIRU plus the effect of extended and emergency unemployment benefits (labeled EEB). The sum of these two pieces is about 6¼ percent over the forecast period, and the shaded area above the red line shows our estimate of resource slack. We continue to expect that the wide margin of slack will put downward pressure on inflation. In our projection, however, this effect is muted by the relative stability of long-run inflation expectations. As shown to the right, survey measures of inflation expectations (the black and red lines) have been quite stable; although readings on the TIPS measure in recent months (the green line) look a bit elevated relative to earlier years, extracting a signal for inflation expectations remains difficult. Elsewhere, we see little evidence of significant upward pressure on consumer price inflation. As shown by the blue bars in the middle left panel, labor costs remain quiescent. Compensation per hour has decelerated in recent years, and we project that increases in this measure of compensation will remain modest this year and next. Moreover, given the large recent increases in labor productivity, unit labor costs (the red bars) are estimated to have fallen considerably in 2009. And we expect these costs to increase only modestly over the next couple of years. Finally, although core import prices, the middle right panel, are projected to move up noticeably in coming quarters, we estimate that this increase will have only a limited

effect on consumer price inflation. All told, as shown by the blue bars in the bottom panel, we continue to project that core PCE inflation will slow a little further over the medium term, reaching about 1 percent next year. Overall PCE inflation (the green bars) is pushed up this year by a pickup in energy prices, but we expect the headline index to converge toward the core next year as energy prices decelerate. Nathan will now continue our presentation.

MR. SHEETS. Our outlook for the foreign economies is now brighter than we expected at the time of the June chart show. The global recovery broadened and became more established in the second half of last year, with growth taking hold in both the emerging-market and advanced foreign economies. We estimate that total foreign GDP (line 1 in the table) rose at a 2¾ percent rate in the fourth quarter, moderating some after a 4½ percent rebound in the previous quarter.

Going forward, the foreign economies should continue with this moderate recovery, expanding at an average pace of about 3½ percent this year and 4 percent next year. We anticipate that persistent stresses—including from difficult labor market conditions and deteriorated fiscal positions—will weigh on private spending and keep output in many countries well below potential. But the forces supporting recovery should be sufficient to ensure that the recovery does not stall.

Broadly in line with these expectations, foreign inflation (line 12) is seen to hover around 2 percent through the next two years. As shown on the right, our forecast for inflation is predicated on a leveling-out of oil and other commodity prices, following their surprisingly sharp rebound over the past year. One notable risk is that the ongoing recovery may continue to push commodity prices higher, with consequent upside pressures on global inflation. An offsetting risk, however, is that prevailing slack may weigh on prices to a greater extent than we now deem likely.

Recent indicators have pointed to generally vibrant demand in the emerging-market economies (EMEs). As shown on the middle left, Chinese industrial production has continued to power ahead, and a recent surge in exports has made China the world's largest exporter. Other emerging Asian economies (the middle panel) have also seen a solid rebound in exports and industrial production. In Latin America (on the right), Brazilian production has bounced back vigorously from its year-end 2008 low, and other indicators for that country also point to strength. In contrast, the rebound in Mexican production has been comparatively tepid, but Mexico's expansion is likely to gain steam going forward, in step with the U.S. recovery.

The advanced foreign economies (AFEs) are also recovering, but at a more muted pace. In Japan (the bottom left panel), exports have recently recorded a solid rebound, but household spending remains soft. Going forward, we see the Japanese economy expanding at a 2 percent rate, slightly above consensus, but still implying an output gap of roughly 5 percent of GDP at the end of next year and continuing declines in consumer prices. Given the sustained deflationary pressures that are afoot

in the Japanese economy—nominal GDP has fallen nearly 10 percent since the first quarter of 2008—there is a compelling case for the BOJ to ease its policy decisively. Moving to the right panel, the pace of activity in the euro area appeared to decelerate at the end of last year, with retail sales continuing to edge down and industrial production still not showing much vigor.

As shown in your next exhibit, our leap of faith—and indeed a linchpin of our outlook—is the assumption that private final demand in the AFEs will strengthen over the forecast period, even as support from fiscal stimulus and inventories abates. We see private demand growth gradually rising in the euro area, Japan, and the United Kingdom, in line with improving financial conditions, strengthening sentiment, and ongoing support from monetary policy. Private spending in Canada is likely to continue to expand briskly, supported by strong global demand for commodities and the ongoing rebound in the auto sector.

Strained fiscal positions are one unfortunate legacy of the crisis and a notable risk to the recovery. As shown in the middle left panel, fiscal stimulus measures, financial sector rescues, and the recession have led to steep rises in debt-to-GDP ratios. As such, fiscal retrenchment—and the drag on economic growth that this implies—will be unavoidable. But getting the timing of this retrenchment right is likely to be challenging. Moreover, markets may push countries with fiscal imbalances to consolidate more rapidly or more substantially than we have assumed in our baseline. Ireland has already announced deep fiscal cuts in response to such pressures. And revelations of Greece's enormous budget deficits have driven up sharply the spread on its sovereign bonds (the green line in the middle panel). By this metric, the contagion to other potentially vulnerable euro-area countries, such as Spain or Portugal, has remained limited to date. If a full-blown debt crisis does erupt in Greece, there seems to be little consensus in Europe as to how it should be managed and, hence, might expose deeper divisions among euro-area countries.

As shown on the middle right, the Bank of Canada and the Bank of England are expected to begin raising rates in the second half of this year, whereas the ECB will wait until early next year. Our best guess is that the BOJ will keep its policy rate close to zero forever, [laughter] but at any rate through the end of the forecast period. We note, however, that recent inflation data for the United Kingdom and Canada have come in above our expectations, highlighting that the risks around our policy rate assumptions are now two-sided.

Difficult conditions in labor markets are also likely to exert a drag on the recovery in the AFEs. As shown in the bottom left panel, these countries have seen a much shallower decline in employment than that in the United States, in part reflecting public payments to firms to keep employees on their payrolls. On the flip side, greater labor hoarding has implied sizable declines in productivity (the right panel) in contrast to the substantial increases seen in the United States. This labor hoarding will likely impede the pace of hiring, and hence of household spending, through the recovery. An unsettled issue is to what extent these declines in labor productivity are

purely cyclical versus reflecting longer-term scars associated with the crisis, which would suggest lower levels of potential output going forward.

The sources of growth in the emerging-market economies are more difficult for us to parse out. That said, there is little doubt that domestic demand in China (the top left panel in your next exhibit) is barreling ahead, with both investment and consumption expanding briskly. Domestic demand in other EMEs also appears to have bounced back rapidly in the second half of last year. Growth in these countries, as in China, has been supported by policy stimulus and by temporary boosts from the inventory cycle. Our forecast calls for domestic demand in the EMEs to moderate this year, as a strengthening in underlying private demand allows the authorities to begin withdrawing policy stimulus. However, we continue to believe that a durable rebound in the EMEs is likely to depend importantly on a recovery in private spending in the advanced economies.

As highlighted in the middle left panel, the generally favorable growth prospects for the EMEs, along with improvements in global financial conditions, have driven a sharp rebound in capital inflows. This, in turn, has stoked concerns that asset-price bubbles may be forming, especially in emerging Asia. The middle panel shows that forward-looking ratios of equity prices to expected earnings have risen, but such ratios remain within historical ranges. And, as shown on the right, while Hong Kong and Singapore have seen property prices rise sharply, particularly at the high end of the market, prices in other Asian economies appear to be flat or up only moderately. All told, we are not convinced that asset bubbles are emerging in earnest, but we will continue to monitor this closely.

In response to strengthening economic conditions and some recent upside inflation surprises, major EMEs are moving to tighten policy. As displayed on the bottom left, restrictions by the Chinese authorities on certain kinds of lending successfully reduced the pace of credit growth during the second half of last year. However, loan growth surged again during January, reportedly prompting the Chinese authorities to impose more-aggressive tightening measures on several banks. And earlier this month, the People's Bank of China surprised the markets (and us) by raising its reserve requirements 50 basis points. Finally, we expect the impetus from fiscal policy (the right panel) to diminish markedly this year in China and to be a drag on growth in other major emerging-market economies.

Turning to your final international exhibit, in the weeks since the favorable November employment report (and despite the less impressive report for December), the dollar has moved up markedly against the euro. This rise has been driven both by increased optimism about the prospects for U.S. growth and by uncertainties about the outlook for the euro area, reflecting both soft incoming data and mounting concerns about fiscal problems, particularly in Greece. The dollar is also up some on net against the yen and a number of other currencies.

Even after these gains, however, the real broad dollar index (shown on the right) is still down about 5 percent since the time of the June chart show. As we have noted previously, much of this decline appears to reflect normalization in risk appetite. Broadly consistent with this hypothesis, the green line in the middle left panel shows that U.S. residents have resumed their purchases of foreign securities after pulling back during the crisis. In contrast, private foreign purchases of U.S. securities (the red line) have remained anemic on net, as rising acquisitions of U.S. equities have been largely offset by sales of debt instruments, particularly corporate bonds.

As reported in the table, U.S. exports and imports both expanded at a double-digit clip in the fourth quarter as they continued to bounce back from their crisis-induced lows. Going forward, the recovery in foreign and domestic output should be sufficient to ensure that trade growth remains healthy, at a pace of around 9½ percent for exports and 8½ percent for imports. Exports receive an additional boost from the dollar. These projections imply that the contribution from net exports to U.S. GDP growth will be negligible on average over the next two years. As seen in the bottom left panel, real exports and imports should both be at or above their pre-crisis peaks by the end of 2011.

Finally, as shown on the right, we project that the current account deficit will hover around 3 percent of GDP through the forecast period. Longer-term simulations of our models indicate that annual dollar depreciation of roughly 2¼ percent in the years beyond the forecast period—a touch less than we have assumed for this year and next—would be sufficient to close the current account deficit by 2020. Brian Madigan will now conclude our presentation.

MR. MADIGAN.⁴ I will be referring to the separate package labeled “Material for Briefing on FOMC Participants’ Economic Projections.” Exhibit 1 depicts the broad contours of your projections for 2010 through 2012 and over the longer run. These contours are little changed from those based on your most recent projections, those you submitted in conjunction with the November 2009 FOMC meeting. Most of you continue to project a gradual economic recovery, with the unemployment rate slowly trending lower and inflation remaining subdued over the next few years.

Exhibit 2 reports the central tendencies and ranges of your projections for calendar years 2010 through 2012 and over the longer run; the corresponding information about your November projections is indicated in italics, and Greenbook projections are included as a memo item. As shown in the top panel, most of you anticipate that real GDP will increase 2¾ to 3½ percent in 2010. The lower limits of the central tendency and range of your growth projections for this year are both slightly higher than in November. You see economic growth stepping up by almost a full percentage point in 2011, with a central tendency of about 3½ to 4½ percent, and then staying at about that rate in 2012. Both the range and the central tendency of your estimates of the longer-run sustainable rate of GDP growth, the right-hand column, are the same as in November.

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

The broad contours of your unemployment rate projections, the second panel, are also much the same as in November. Your forecasts of the unemployment rate in the fourth quarter of 2010 lie in the range of 8½ to 10 percent, and the central tendency is narrow at 9½ to 9¾ percent. Underscoring your expectations of a gradual economic recovery, almost all of you expect the unemployment rate to remain above 8 percent at the end of 2011. Indeed, most of you project that the unemployment rate will be about 6½ to 7½ percent even in 2012, a central tendency that is well above your estimates, shown in the right-hand column, of the 5 to 5¼ percent unemployment rate you anticipate to prevail over the longer run. Your longer-run projections for the unemployment rate have the same central tendency as in November.

As shown in the bottom half of the exhibit, the central tendency of your projections for headline PCE inflation in 2010 is 1.4 to 1.7 percent, not much different from your projections in November. Nearly all of you project that both total and core inflation through 2012 will stay at or below your view of “mandate consistent” inflation of 1¾ to 2 percent. A number of you see inflation slowing through 2012, but others see inflation remaining in the vicinity of 1½ to 2 percent. As a result, the central tendencies and ranges of your projections for core and headline inflation in 2011 and 2012 are generally wide.

As can be seen in the top panel, your views on the outlook for economic growth over the next several years differ somewhat from the staff’s outlook: Greenbook projections for real GDP growth are at or slightly above the upper end of the central tendency of your projections through 2012. In contrast, the staff’s estimate of longer-run GDP growth—at 2½ percent—is at the lower end of the central tendency of your longer-run growth projections of 2½ to 2¾ percent. Consistent with the staff’s slightly brisker projection of output growth over the next three years, the Greenbook forecast of the unemployment rate is at or below the lower end of the central tendency range of your projections through 2012. Most of you see the rate of unemployment that is sustainable over the longer run as close to or just a touch above that projected by the staff. Even though most of you envision a slower recovery and higher unemployment than anticipated by the staff, your inflation forecasts are generally above the staff’s. This helps to explain why a sizable majority of you anticipate that it will be necessary to begin moving the funds rate up earlier than envisioned in the Greenbook.

As shown by exhibit 3, your views of the uncertainties and risks in your projections have not changed appreciably since November. Almost all of you continue to see greater-than-usual uncertainty regarding your projections for growth and inflation, the solid bars in the two left-hand panels. As shown in the top right panel, nearly all of you judge that the risks to output growth are roughly balanced. Most of you also continue to view the risks to the inflation outlook, the bottom right panel, as roughly balanced. That concludes our presentation. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you very much. Are there questions for our colleagues? President Bullard.

MR. BULLARD. I just have one question on this last exhibit, and maybe it is a question for the Committee. Is there any discipline on us to prevent us from saying that uncertainty is always higher than average?

MR. LACKER. On average, no. [Laughter]

MR. BULLARD. My experience in the Fed over all these years has been that policymakers are always describing the current environment as a very uncertain one, which is true at some level, but you can't have above-average uncertainty all the time.

MR. LACKER. Don't the instructions ask us to respond to that question with reference to a particular historical period—I think the last 20 years—and wouldn't that allow us to always think uncertainty is higher than usual if it trends up?

CHAIRMAN BERNANKE. Uncertainty is always rising. [Laughter]

MR. BULLARD. Well, I'm just wondering how useful it might really be if we are always going to be describing things as very uncertain.

CHAIRMAN BERNANKE. We have been giving this information for only how long—a couple of years? It's kind of a short sample.

MR. BULLARD. Okay.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. I want to ask three quick questions, if I may, on the economic presentation. With regard to E&S and cap-ex, which I think is an important variable we are all looking at, when we talk about the survey of capital spending plans and the data that you

reported, are you distinguishing between plans domestically or plans overall? For those who are planning to spend, how much of this is domestic, and how much of it is global?

MR. PALUMBO. We get reports that are mixed. Some reports will be explicitly about global cap-ex or global IT, and we will report those as distinct from our more domestic reports. We can usually parse the pieces, but most of what I was referring to were domestic plans for domestic spending. There is an import component to that spending, which is another piece, so it's not all domestic production. But we also think that domestic production in the high-tech area has already been accelerating and that the plans are to continue to accelerate. So we have some ability to parse those things, but they are really broad indicators as opposed to anything that would add up to something that shows up in the national accounts.

MR. FISHER. Thank you. The second question is on food prices, which we rarely discuss. We always talk about oil prices. If you look at the key food oils as well as at corn, wheat, and some of the other key grains, we have had a complete retracement over the year. If you talk to the retailers, they are complaining about food-price deflation, and I wonder if you have any comments on the food component looking at it from the standpoint of inflationary pressures.

MR. SICHEL. I think the broad story on food prices would be that there was the big run-up with commodity prices through 2008 and then we saw the big backoff on crop prices and the underlying food commodity prices. That's obviously finished. With the recent freeze, there is going to be some near-term volatility in food prices. But we do see food prices rising going forward, not at a rate particularly different from core prices, but we do see increases going forward.

MR. FISHER. And my last question, Nathan, has to do with your points on Chinese economic growth as well as on the exhibit you had on fixed asset investment. I just want to check a data point. If you talk to the bulk shippers, they will tell you that last year, if you look at the slippage in terms of imports on all but two countries, you had an implosion of roughly 300 million metric tons of imports. Two hundred seventy million was made up by imports going into China and the remainder into India. Question: Even with a slight reduction in what you expect for Chinese economic growth, against the background that this occurred, if you look at the chart on fixed asset investment in China, there is a decline over 2009. I am just wondering about whatever pickup we have in the rest of the world, and we expect some pickup to take place—I think the presentation captures the overall demand picture fairly accurately—could one expect then to see continued upward price pressure on dry shipments and, if so, to what degree?

MR. SHEETS. That is a pronounced risk. I think that the key question we have a very hard time getting our hands around, given data limitations, is all of the stuff that was shipped to China over the last year, how much of it has gone into inventories, and how much of it has actually been utilized. Our thinking about this issue and how we reconcile continued increases in global demand, on the one hand, and global GDP with this flat commodity path, on the other, is that, first, there was an element of inventory accumulation that occurred last year. As those inventories get replenished, the demand would come down, holding all else equal. But that is offset by continued growth, so we have some shifting in the nature of the demand that is going on.

Then the second thing is that if we really believe that, both for oil and other kinds of commodities, there are some supply-side effects that are likely to come on line over the next few years. For instance, we were told that the copper industry by historical standards is at a

relatively low level of capacity utilization. So we are hoping—and it really is a hope because we don't have the data that we want to confirm this—that there will be a different mix of purchases with less inventory replenishment during the coming year and that we will see some supply responses, and for that reason this futures path with flat commodity prices will materialize. But I think our track record on forecasting commodities shows that any forecast we write down there has considerable uncertainty around it, and my instinct is that there is more upside than downside risk to our commodity prices outlook now.

MR. FISHER. Thank you. Thank you all for an excellent presentation. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you, Mr. Chairman. As I listened to the presentation, I found myself sort of stuck on exhibit 6, nonfarm business productivity, and I kept staring at that chart because, however you put it, my takeaway was that it seems as if hiring is inevitable. Actual productivity is higher than structural. If we are going to get economic growth, we are going to have to get this hiring. And I just would like to point out at this time that I have not been able to talk to anybody who will move off the proposition they will not be hiring until—and then they won't tell me exactly when. This is a big risk, isn't it? I mean, how do you feel about these implications?

MR. SICHEL. I think they are highlighting a very important risk and one that we are acutely attentive to. As we put the forecast together, we were looking at a number of different things. We have some indicators that are laid out here that I think provide some sense that, based on the historical record, a pickup in hiring is plausible. The stage seems to be set for that. There is a macro story that's laid out in that top right panel that suggests, conditional on our ability to

assess the structural underlying rate of productivity growth, that a pickup in hiring would be imminent. But as you note, we heard the same stories about business uncertainty, and it does seem that it is going to need to resolve to some degree before hiring begins to pick up.

I think some indications that it may be happening—and I don't want to assert this too strongly—come from some of the business sentiment surveys. Some of the improvements in financial market indicators suggest that it may be happening. And we are now in a period when final sales will have been growing for a time, suggesting that there may be some growing confidence in the resiliency of the recovery. But, boy, that's a lot of forecast and hope rather than a lot of hard facts to which I could point you suggesting that we really have great confidence that is going to happen. We think that is the best way to put together the pieces of the macro story, but there's a lot of risk there.

MR. EVANS. Yes, back at home I have dubbed this the “inevitability hypothesis.” The recovery is inevitable, and it will happen. Thank you very much.

CHAIRMAN BERNANKE. Other questions? President Kocherlakota.

MR. KOCHERLAKOTA. I am just going to follow up quickly on what President Evans was saying about hiring. If you look at the hiring rates in JOLTS, the job openings and labor turnover survey, hiring rates have been flat basically since March, and the help-wanted index data that you are showing us here are pretty similar on that. Until we see that pick up, I do not see how we are going to get to a 263,000 gain in employment.

MR. SICHEL. Again, that is a fair point, something that we have thought a lot about. I would note that the typical pattern prior to the last two jobless recoveries was that, after GDP turned up, it took employment a couple of quarters to turn up. That does not mean that it is going to happen this time, but that was the typical pattern.

I would also note looking at that help-wanted index, if you look at the vertical lines that show the point at which employment picked up in the past, in those earlier episodes that turn came pretty quickly. So when the macro forces and the stars lined up the right way, hiring started. It is kind of an uncomfortable thing for us to have to say that the second quarter here is what we are going to get. At some point it's going to happen, and it may happen pretty quickly. It might not be the second quarter. It's sort of uncomfortable to be forecasting that so close, but again, the macro story seems to line up, suggesting that it's a sensible forecast to write down, subject to all of the risks.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Just one follow-up on that: This help-wanted index, you do have these Internet problems, and they make comparability to the past recessions before the last two, which were jobless recoveries, pretty problematic. So I would be a little worried about relying too much on that.

MR. SICHEL. Yes. So one thought on that—we have done a lot of work trying to blend, connect, and splice together the current Internet job postings with the old help-wanted index. You're absolutely right that doing these long comparisons across time is treacherous because job postings now probably aren't the same thing that job postings were 30 years ago. As we look at that index, we really do not try to make much of secular trends. We really think it's more useful for identifying shorter-term movements. Whether shorter-term movements in Internet postings are similar to shorter-term movements in the old newspaper postings is an open question, but we still think that there is some useful information here.

CHAIRMAN BERNANKE. You have to be careful of your intuition because gross hiring is always reasonably high even in a recession. In some sense, a sufficient decline in

separations can lead to increased payrolls even if the active hiring process has not accelerated. So there are some intuitive traps here that we have to pay attention to. Other questions? All right. Seeing none, let me begin with President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. Like the staff forecast, my outlook has not changed much from the December FOMC meeting, despite a fairly disappointing employment report. That report highlighted that we are still losing jobs, that many were taking part-time work for economic reasons, and many have had little success in finding work despite being unemployed for some time. As the recent Massachusetts election has highlighted, people remain quite focused on the very weak labor market and are concerned that economic growth will be insufficient to make much progress in labor markets. I still anticipate that unemployment will decline only gradually from these very elevated levels, with a trajectory for the unemployment rate that is quite similar to that of the Greenbook.

In discussions with business leaders from around the District, there is a clear sentiment that major investment and hiring decisions can wait until there is more clarity on the economic outlook, and many are refocusing their investment programs. A president of a major university in Boston highlighted that, despite some recovery in its endowment, it remains well below peak and the university remains concerned about future prospects. Major projects have been shelved altogether, whereas others have been examined for a possible joint development. A major builder highlighted that lack of credit remains a significant issue but that, given significant vacancies and weak demand for new space, major construction does not make sense as long as the cost of building remains much higher than the cost of buying. With the CMBS market severely disrupted and foreclosures looming, he sees little prospect for a turnaround in commercial construction in the near term. Such sentiments highlight that it may be some time

before business fixed investment is a significant driver in this recovery. Despite the New England economy being somewhat better off than the rest of the country, many of the states have significant revenue shortfalls. Even with stimulus money from the federal government, state and local spending is likely to be restrained for some time.

The economy is clearly susceptible to external shocks. While many of our problems earlier in the recession affected the rest of the world, Chinese restrictions on their lending and mounting fiscal challenges in many of the peripheral European countries could reverberate here. Until the economy is more self-sustained, negative shocks can have an outsized effect, given that with the zero bound on interest rates and the prospect of large future deficits makes it difficult to offset negative shocks with monetary or fiscal stimulus. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Overall economic conditions in the Eighth District remain weaker than one year ago, but declines in activity have leveled off and activity has begun to improve in some areas. District manufacturing activity continues to decline, albeit at a slower pace than previously. District services activity continues to improve in most areas. Holiday retail sales were mostly positive, with a slight increase over last year. Current estimates suggest that District employment in 16 metropolitan statistical areas is down about 3.5 percent since the beginning of the recession compared with a national number of about 5 percent over the same period. So on this dimension, the recession in the Eighth Federal Reserve District has been less severe than in the nation as a whole, but it is still bad, to be sure. Employment increased during the second half of 2009 in key District service sectors, including finance, insurance and real estate, professional and business services, education and health, and leisure and hospitality. District contacts during the fall expressed some concern that momentum from the second half of

2009 may not carry over into the first quarter of 2010. However, very recent data from large firms in the District seem to indicate that such fears were unfounded. If anything, business activity for these firms has continued to strengthen so far in the first quarter. I found this encouraging, and for some of these firms, the international component of their business has led the way.

Nationally, my sense is that the economic recovery remains on track and that the real GDP growth rate for the first half of the year will be at or above the long-run average rate for the U.S. economy in the postwar era. I do think we may be at a juncture in the process today as we speak and over the next few weeks, as markets are reassessing the global policy response to the worldwide recession. But presuming that that goes okay, I think we are on track. The pace of recovery that I am projecting is not particularly strong by historical standards, as we have noted here. Thus, I think that there is some upside potential that the economy may recover more rapidly, better in line with historical experience. I have hedged my bets on this outcome because I view the shock that hit the economy as one that is largely without historical precedent and because I put some weight on the evidence suggesting that downturns associated with financial crises tend to last longer.

Inflation risks in my view are low for the near term but high for the medium term. I think we have now avoided the deflationary risk that we faced in 2009. The TIPS-based expected inflation rates are now all very near 2 percent or higher, depending on whether you look the 5 year, the 5-year forward, the 10 year, or the 20 year. I think one reason these have continued to rise is that people have started to put less and less probability on a deflationary outcome, and I expect that, as the recovery remains on track during 2010, we will see these continue to move up. I believe that these medium-term inflation risks are manageable but that it will require careful

policymaking in the year ahead. For this reason, I have suggested that the Committee do more to keep options open now so that actions that may become desirable can be taken later in the year without surprising or confusing financial markets. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Economic activity in our region is growing, albeit slowly. Regional manufacturing activity continues to rise. Our Business Outlook Survey's general activity index indicated expansion for the sixth consecutive month in January, although the level at 15.2 was a bit lower than the December level of 22.5. The index is now slightly below the level we typically see in expansions, which, I think is an indication that, although the region is in recovery, it isn't yet a robust one.

We asked some special questions this month in our survey, and responses were consistent with moderate growth. Forty-three percent of our manufacturers said that the underlying demand for their products had risen in the past three months, whereas only 23 percent reported a decrease. But our firms remained considerably uncertain about the future. About a quarter reported that they have become more certain about their forecasts for growth over the next six months. About the same percentage said they had become less certain about the future. This is a bit unusual. Typically uncertainty dissipates as the recovery gathers strength. Another sign that businesses remain uncertain of the strength of the recovery is that, while the index of future expectations on general activity remains quite positive, it is also slightly below what we would usually see at the beginning of a recovery.

The news on employment in our District remains mixed. Unemployment rates in our three states fell in November, as they did in the nation, and our Business Outlook Survey's employment diffusion index was positive for the second consecutive month in January. These

were the first positive readings on the employment index in 21 months. This suggested that at least some firms are thinking about hiring. Unfortunately, the unemployment rate in each state rose in December and is now above the national average in New Jersey, but it remains below the national average in both Delaware and Pennsylvania. More anecdotally, we are beginning to hear some signal from my business contacts that they are starting to think about expanding their workforce rather than not thinking about it at all. They remain highly uncertain about the outlook for the demand for their products, and they also repeatedly say things like “until I get some resolution on fiscal policy”—they don’t know what their taxes and hiring costs are going to be, and they continue to worry about that, and that plays into their reluctance to hire.

At a national level, my outlook for the economy has changed very little from my November forecast. I believe that the economy is in a recovery and there is an increased likelihood that the recovery will be a sustainable one even as the effects of monetary and fiscal policy wane. I think conditions in the financial markets continue to support the recovery. Credit conditions appear to be easing somewhat in the banking industry—but at least they are not tightening any further. Some of the downside risks we saw a year ago, including steeper-than-expected house-price declines, equity-price declines, and other financial meltdowns, did not occur. Labor markets continue to be under stress, but the rate of job loss is slowing, and I expect to see payroll growth resume being positive in the first quarter and more than likely pick up steam in the second half of the year.

On balance, the data have been slightly stronger than I anticipated, and I have revised up my 2010 projections slightly since November. But the basic structure and shape of my forecast in 2010 and beyond remains largely unchanged. I think the recovery will gain more solid footing, with real GDP growth of about 3.4 percent this year, which then will moderate to

3 percent in 2011 and 2012, a somewhat weaker path than the Greenbook and probably weaker than one would expect in the normal course of a recession as deep as this one. Thus I see, at least relative to my forecast, that there may be some upside risks to that similar to what President Bullard was suggesting.

I would also like to note that the Greenbook and the presentations incorporated the effects of the extended and emergency unemployment benefits on the measured unemployment rate. Unemployment insurance benefits have been extended a significant amount during this recession and now have reached 99 weeks of coverage. The Greenbook recognizes this and that this can affect the natural rate of unemployment, and the Board staff has adjusted up its estimate of the NAIRU about 1 percentage point, from $5\frac{1}{4}$ to $6\frac{1}{4}$ percent, through 2011, where it looks as though it gradually falls back toward $5\frac{1}{4}$ percent by 2013.

Coincidentally my staff in Philadelphia has also done recent work on this issue, and their work suggests that extended unemployment benefits raise unemployment duration by lowering job search intensity and dropouts from the labor force. Their calibrated model suggests that the iterative extension of unemployment benefits that we have seen during this recession could have pushed up the average duration of unemployment by six to seven weeks, accounting for about a half to two-thirds of the actual 11-week rise that we have experienced. These estimates also suggest that extended UI benefits have raised the unemployment rate in the neighborhood of 1.1 to 1.7 percentage points over and above what would have otherwise been. It is a slightly higher percentage than the 1 percentage point the staff has; we think it's a little more than that, maybe as high as 1.5 percent.

These findings have two broad implications that we should recognize. First, they suggest that, as labor market conditions improve and the extended benefits are permitted to expire, we

may see an accelerated decline in both the duration of unemployment and the unemployment rate. In other words, going forward, unemployment rates may improve more quickly than in some forecasts that don't incorporate the effects of the unemployment insurance. So going on the other side, we may see accelerated improvement. Second, these findings suggest that there's less resource slack than one would have if one ignored these benefit programs. For example, suppose that the natural rate previously was thought to be in the neighborhood of 5 percent and, as some people have argued, the permanent shock or the persistent nature of the shock we have had in this recession has effectively raised the natural rate significantly. Let's say it's raised, just to pick a number, 1 percentage point. So the longer-run natural rate is now 6 percent rather than 5 percent. If we now add the effects of extended UI claims of about 1½ percentage points, we get a natural rate in the current environment of something like 7½ percent. This would imply a much smaller unemployment gap than if these effects were ignored—again, underscoring the difficulty of measuring any sort of resource utilization gaps. While the natural rate may gradually drift back down as the economic shock dissipates and the benefits expire, such situations do suggest that we need to be careful about keeping rates too low for too long.

My inflation forecast continues to differ from the Greenbook. I expect underlying inflation to remain moderate in the near term, but I expect it to drift upward over the next couple of years as it has drifted upward over this year. Moreover, I see the upside risk to this inflation forecast to be higher in the medium to longer term.

I would like to suggest that we exercise some caution in relying on core inflation measures as a signal for underlying inflation trends. Presumably we seek to peer through relative price shocks to discern as best we can underlying inflation trends. The argument for core measures is that food and energy are particularly volatile, although they are not the most volatile

components of the price index. There are other components of the CPI that can also exhibit large and significant relative price movements and potentially make it difficult for us to assess underlying inflation trends. Indeed, one might argue that we have experienced a very large and significant relative price shock to housing broadly defined. Shelter makes up about 30 percent of the CPI headline index and even a larger share of the core index. So movements in shelter prices have a large impact on the CPI. Of course, for the PCE, housing gets less weight, and so the effects would be less pronounced. For example, for the last three months of 2009, headline CPI rose at an annual rate of 3.3 percent. Over that same period, core CPI rose at an annual rate of 1.3 percent—a rather large discrepancy. Yet if we look at the index excluding food, energy, and shelter, the rise was 2.8 percent, much closer to the headline number. Now, for the whole year the numbers are similar. From December '08 to December '09, headline inflation was 2.8 percent. Core was 1.8 percent, but core less shelter was 2.9 percent. Obviously, declines in the price of housing are a very large contributor to the low CPI inflation as measured by the core.

Our colleagues at the Cleveland Fed have recognized this problem recently and revised their methodology in computing their median CPI measure. They divide owners' equivalent rent into four regional components. Nonetheless, owners' equivalent rent still emerges as the median component over half the time between January 1998 and July 2007. But the crux of this issue is that, if the price change in a large component like shelter represents a downward relative price shock, we shouldn't be complacent that the low level of core inflation in this environment is necessarily signaling low underlying inflation trends. Again, of course, these numbers will be somewhat different for the PCE. I couldn't really get the data to back out the pieces as you could for the CPI, but the point is that we're seeking to peer through large relative price movements to

seek out our underlying inflation trends, recognizing that the housing shock may be a very large relative price shock we should recognize.

Now, let me hasten to add that I am not advocating that we throw out individual components of the price index as it suits us or seems convenient. I am also aware that in the context of some models we should be paying more attention to those prices that are presumed to be sticky; and shelter, at least until the current episode, might arguably fall into that category of a sticky price. Yet what we need to recognize is that the decline in core inflation has been largely a result of the decline in the price of shelter, and it should always give us pause if we want to focus on trend inflation if an index or a sub-index is dominated by the behavior of one expenditure category. In fact, the way I think about this is that it suggests to me that we ought to be placing more weight on headline measures as opposed to any particular sub-index where we pick and choose what to include and what not. Thus, we should be cautious and not become too sanguine about the behavior of core as an indicator of our underlying inflation trends.

I will briefly reiterate some of the points that President Bullard just made about inflation expectations. While they seem stable and I am encouraged by that, TIPS measures of five-year, five-year forwards have been drifting up rather continuously since the beginning of the year. Those should give us pause. Survey measures seem to be rather stable. That's some good news. But dispersion of survey measures and some interpretations of the TIPS measures may mean that uncertainty or inflation risk premiums may be rising, and if inflation risk premiums are rising, that suggests that we should be concerned perhaps about our credibility and make sure we maintain it.

Thus, to keep inflation moderate in the medium or long term I think that we will have to begin tightening policy some time much sooner than forecast in the Greenbook, and indeed, I

suspect it will be by late spring or early summer. My forecast suggests that the funds rate will have to rise nearly to 2 percent by the end of 2010—which is, by the way, still very low by historical standards—and rise fairly steadily thereafter. I assume that we will begin reducing the level of excess reserves in the banking system through a combination of tools, including asset sales, prior to that. The extraordinary monetary policy accommodation we put into place must sooner or later be removed, and we will have to be careful and cautious in our communications to the public about how and when we do that. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. In my remarks today, I would like to press two themes: first, the tentative nature, the fragility, of the recovery and the need to be patient with accommodation and, second, the gap that we are picking up in the Sixth District between anecdotal intelligence and the Greenbook outlook and even some data.

Our contacts in the Sixth District over the last two weeks seem more optimistic about the state of the economy. However, there is still much uncertainty about the medium-term picture, and this is contributing to more restraint than one would ordinarily expect as the economy emerges from a deep recession. Retailers reported that they are not stocking ahead of sales—that is, in anticipation of improved sales numbers—except where there is no choice in the case of seasonal goods or imports. The approach to inventory management up and down the production and supply chain is exceptionally cautious. We heard that the posture of retailers is that missed sales opportunities are an acceptable cost of doing business in the current economic climate. I continue to hear reports of firms reorganizing their workforce to be more cost effective, and this includes more downsizing. There is still little appetite to add permanent staff. I am also hearing that there is considerable interest among stronger companies in cost-reducing M&A activity that

would consolidate operations in an industry and improve competitive positions. I hear little enthusiasm for business expansion requiring new capital expenditure, a view that was confirmed by the recent cap-ex survey we conducted. Maintenance cap-ex that can't be postponed dominates business investment spending.

As regards the outlook, I expect real GDP growth to moderate significantly this quarter and remain on a path under the Greenbook baseline over the two-year forecast period. My outlook assumes the continued significant deleveraging of businesses and consumers. I think firms dependent on bank credit are unlikely to have their credit demands fully met, and in an environment of weakened balance sheets, soft labor markets, and exceptionally heightened economic and policy uncertainty, many simply do not have the appetite for more debt. A key difference between Atlanta's updated forecast and the Greenbook is the outlook for business investment. I am projecting a very modest trajectory for new fixed capital spending this year and next.

Now, I have to acknowledge some upside risks to the forecast I submitted. The pace of spending and production in the fourth quarter suggests that real growth could be relatively strong this year and next. But this is not what the ground-level economic intelligence I gathered in preparation for this meeting suggests. I am still getting a sense of a lot of fragility in the recovery with continuing downside risks. So as I total up the risks to economic growth today, I judge them to be roughly balanced.

As regards inflation, risks exist on both sides of the forecast, and uncertainty remains high. We heard from contacts that price pressures are influencing business decisions in companies with commodity exposure. We also heard that, while pricing power of businesses isn't strengthening, price discounting is less intense than at the time of the December meeting.

Overall I acknowledge the improving data, and like just about everyone else, I have raised my growth forecast from where it was in October. But the private sector still faces considerable impediments on the path toward a full recovery, and those impediments continue to have a significant weight on my expectations for the economy over the forecast period. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. Unlike President Lockhart, I am less uncertain than I was at the last meeting. I have upgraded the intensity of the economic growth that we foresee, but I find that I am sort of in consensus with the numbers that you have accumulated, Brian. That ought to make you all feel very uncomfortable. [Laughter] It certainly makes me feel uncomfortable.

With regard to my District, we are seeing the production barometers for our District signaling significant increases in factory activity for the past three months. The index of new orders and shipments posted very large improvements. Our staff noted them as dramatic improvements in the numbers we just released on Monday. And capacity utilization has increased. The business activity and company outlook indexes for our District reached the highest level since mid-2007, and we surmised from the sliver of what is either 8 or 10 percent of the nation's manufacturers that a recovery in activity and in our region's manufacturing production is definitely under way. Residential construction has stabilized. The rig count has trended upward, as you may know. What's interesting is that our largest employment sector is health care, and it grew last year in terms of employment at the fastest rate in over a decade and continues to surge forward.

Employment in our District rose in October and November. It then pared back a little in December. All eight components of our regional leading indicators have moved upward and are signaling improvement actually since September, and we're forecasting at least 1.8 percent employment growth for our District for the year 2010. I expect that to be revised upward. We also note from our regional surveys that, while there are reports of upward pressures on raw materials prices and downward price pressures on finished goods have abated, prices at the retail level have held flat. There does not appear to be much leeway in terms of pricing power. I am going to turn to that in just a second. But the bottom line for our District is that it is expanding. Employment is actually turning into positive territory. As to price pressures, there are no red flags yet.

Nationally, my corporate contacts report slight improvement yet continued expectations for limited growth. As you know, I like to look at how things get to market—ships at sea, air travel, and freight shipments, as well as rails. Just to summarize what I have learned from my contacts and the anecdotal evidence in those areas, there is a slight improvement taking place. I like to talk about railroad cars. If you talk to Burlington Northern/Santa Fe, they still have some 25 percent in capacity, but the 200 miles of intermodal cars that were lying fallow in the third quarter of 2009 have been pared somewhat. They now have 176 miles, so a slight improvement has taken place. So in terms of how goods get to market, there has been a slight pickup. And in terms of the intermediate stage, the best description I can give you is, in the words of the CFO of Texas Instruments, that there is a slow crawl but it is positive upward. You see that in the semiconductor shipment data that you gave us. In telephonic communications, AT&T reports that they had the healthiest first week of January in three years on the business-to-business side and, in fact, a spike upward in activity. And according to the CEO of Disney, in terms of

advertising for the networks, they are seeing “a shift from maintenance to opportunity,” which indicates that there is some expectation of improved sales activity moving forward by their key advertisers, in addition to Ed Whitacre, who is buying up a lot of personal space for General Motors.

I talked to many retailers. I’ll summarize that very quickly. According to the report given back to me from the San Diego retail conference that took place last week—every major retailer but JCPenney was there—the bottom line is that traffic is up slightly but it is still being driven by value. The positive side for retailers is that, because of the commercial real estate situation, they are able to negotiate better rents and move up into higher-class buildings. The negative side is that, as one reported, while customers are willing to put one more item in the market basket, they are still driven by value. I think that perhaps the best summary of what is happening in retail is captured by one of the great literary journals of all time called *Beer Marketer’s Insights*. *Beer Marketer’s Insights* had a very good article in their last issue—they summarized 2009—when they pointed out that sales of the elixir of Main Street, beer, fell 2.2 percent last year. This is an interesting dynamic. That market is an oligopolistic market. It’s controlled by two companies—Anheuser-Busch and Miller—which have 80 percent of the market. They raised prices 5 percent last year, and for the first time since 1950 saw sales decrease. I talked to the two largest beer distributors in the country, and they are seeing even worse numbers at present. The two large manufacturers have announced 3 percent price increases. I seriously doubt that the increases will take. And I think that is a good representative insight into the pushback that’s being received from the customers at the end, even though there are some price pressures building up over the supply chain.

With regard to employment, perhaps the best summary was by the COO of Wal-Mart, who said that for the first time in his memory, when he walks into a Wal-Mart store, the employees greet him with smiles and with handshakes. They are grateful for their jobs. They are afraid of losing them. And I would say that on net, Mr. Chairman, this seems to be the constraining factor, as was made clear by the presentation of our staff.

Like President Bullard, I do not see immediate price pressures, but I am very concerned about the intermediate and longer term, and I would just remind you that if you were to look to the Greenbook, particularly the charts on consumer prices, we were in a situation where globalization and other factors were leading to significant price pressures before the stick was put into the spokes of the wheel because of the financial crisis. I remain convinced that neither the Chinese nor the Indians will allow economic growth to slow to such a significant degree that it creates political problems. We will have some demand–pull inflation pressures coming from the EMEs, as you like to call them. And as we pick up our economic growth here and as we turn the corner, we are at risk of going back to the kind of price pressures we had in the summer of 2008. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. Let me first say that I am very impressed with the breadth of market intelligence reading that President Fisher seems to be able to do. I may unsubscribe to Goldman-Sachs and begin subscribing to *Beer Marketer's Insights* right now. [Laughter] It might upgrade the quality of my market intelligence.

Reports we have received on the Fifth District's economy continue to indicate a mixed picture, but the picture has been improving marginally over the last month. Overall manufacturing, which increased earlier than other indexes, you'll recall last year, came down to

neutral in November and has remained essentially flat since then. The components of the manufacturing index have been basically flat as well. The only component that showed any sizable movement was the wage index, which swung from minus 5 to plus 6 in January. In services, the retail index is neutral this month after having recovered from a very sharp downward dip in December. There were noteworthy positive signs in the shopper traffic and expected demand six-months-ahead components. Big ticket sales are still fairly negative, however. While price trends were stable in the services sector, there was a notable pickup in price trends in the manufacturing sector. Both prices-paid and prices-received numbers moved up, and the expected trends ratcheted up as well.

The anecdotal reports we are getting from our directors and other contacts are still mixed this year. As I noted in the last meeting, we continue to hear reports that uncertainty about changes in tax and regulatory policy seem to be inhibiting willingness to commit to hiring and investment outlays. And it's a bit broader than you might think from the news. For example, in West Virginia, they report that a wholesale revisiting by the EPA of permits and permitting decisions made over many years is impeding investment in coal and extractive industries there. But, overall, the reports we have gotten have a noticeably more positive tone since December. A few examples—temp agencies are seeing a pickup in orders, consistent with the data you showed. Residential real estate is said to be firming in several markets. The national homebuilders are said to be gearing up to build inventory. Stability is visible in the multifamily housing markets. And tourism is picking up along the Carolina coast.

My outlook for the national economy hasn't changed much since the last meeting. After smoothing through the usual volatility, real output appears to be on a solid growth path. Despite the shaky labor market, consumer spending has moved higher in recent months. Once we start

adding jobs, I think we can expect consumer spending to gain a bit of momentum. Regarding the labor market, I agree with the staff that we are likely to see positive employment growth soon, with the obvious caveats about risks around that outlook. Business investment in equipment and software is also advancing. The latest data on new orders are consistent with the view that equipment spending is likely to add to overall growth this year. And I am positive about equipment and software, just out of a bit of introspection, knowledge of what the national IT infrastructure at the Federal Reserve is doing, just abundant opportunities, not that they are spending a ton of money recklessly.

MR. FISHER. We are holding up the economy, Jeff. [Laughter]

MR. LACKER. Right. Spending in a very disciplined way. But there are just abundant opportunities to improve business processes and rationalize the infrastructure that we have built up over the last couple of decades. There's a drag, naturally, from commercial construction, but that is only 3 percent of GDP. So it looks to me as if the positive factors are going to lead to decent GDP growth this year and better growth next year. We wrote down 3½ percent for real GDP this year, about the same as the Greenbook, and 4 percent for 2011, which is somewhat below the Greenbook. My main difference with the Greenbook probably isn't a surprise. The Greenbook has us waiting until the end of 2011 to raise rates without having any trouble keeping inflation in check over that period. The Committee waited a similar two-and-a-half-year period after the end of the last recession before beginning to raise rates, and core inflation rose above 2 percent in 2004 and remained elevated throughout the rest of that expansion. Overall inflation, of course, was significantly higher. This time around, I think there is a very good chance that to keep inflation in check we need to raise our rate sooner than late 2011. And that is why my 2011 GDP forecast is somewhat below the Greenbook's.

Finally, let me say a word about housing, because it is the macroeconomic sector that is probably the most closely related to the discussion we had yesterday afternoon. The Greenbook has single-family housing starts, as I mentioned yesterday, rising pretty briskly from 0.5 million units to 1 million units by the end of 2011. But even with that strong recovery, residential investment, given the small size of the sector now, contributes only 0.1 percentage point to real GDP growth in this year and 0.6 next year. Now, I recognize that stabilizing the market for housing was an important motivation for our MBS purchases, given the aftermath of what in hindsight looks to have been a decade or so of overbuilding in the housing sector. I realize that stabilizing housing prices probably contributed substantially to stabilizing consumer spending and household wealth over the course of the last year. But given all of the overbuilding we have seen, the magnitude and the scale of that, it seems to me awfully uncertain just how rapidly we ought to expect homebuilding to recover in this expansion and how much we ought to hope homebuilding recovers in this recovery. Given how small a share of GDP is devoted to it, I wouldn't be that disappointed if residential investment were essentially flat for the next couple of years and we didn't get a recovery in starts and we didn't get new home demand rising over the forecast as it does in the Greenbook.

So this contributes to my willingness to run some risk about what happens to mortgage-backed security rates as we remove stimulus in the next couple of years. If anything, if we're having any effect on the housing market, it is subsidizing home mortgage finance, and that sense I have is bolstered, I had mentioned, by the Desk's analysis, some of which documents the limitations to the ability of market participants to short MBS. I think that our task in this recovery, unlike previous recoveries, is twofold. And this is another way to think of what we have before us. We have to withdraw monetary policy stimulus, but we have to withdraw a

perhaps sizable subsidy to the housing finance market. To my mind, the recovery is going to be healthier faster the more rapidly we withdraw that artificial subsidy and get capital markets back to neutral. Thank you.

CHAIRMAN BERNANKE. President Lacker, housing has two other effects, though. One is on wealth effects, as an important component of consumer spending and therefore affects it. The other is on the quality of mortgage assets and the implications for the banking system and so on. So there are other channels of effect—do you think those others are not serious as well?

MR. LACKER. Let me go in reverse order. A fair amount of capital seems to be flowing into the banking system. There is a lot of private equity on the sidelines or being mobilized to go into the community bank sector, for example. Large banks have been able to raise capital, even in recent months, quite notably at the large end of the scale. So I don't see the economy as terribly constrained by the amount of bank capital. And even if it were, I don't think buying MBS is the right way to recapitalize banks. It's kind of an indirect channel. As for housing wealth, if what we are doing is subsidizing mortgage-backed securities and keeping housing prices artificially high as a result, I'm not sure that's a healthy way to build a recovery either. I think we ought to be aiming to get housing wealth and housing prices to where they ought to be relative to the economy, if they are being held up by our mortgage-backed securities holdings.

CHAIRMAN BERNANKE. Okay. President Evans.

MR. EVANS. Thank you, Mr. Chairman. The incoming data in my business report seem consistent with the basic contour of the moderate recovery that we have been expecting since last fall. Although no one has experienced a breakout in demand, most manufacturers are reporting increases in orders. In the District, the Chicago purchasing managers' index, which will be

publicly released on Friday, continued to rise in January to a new level of 61.5. That is an increase of 15½ points over the last four months. However, construction-related activities continue at the very low levels they experienced at the trough of the recession.

Labor market developments have been mixed. In line with Dan's macro storyline, the good news is that temporary-help employment is increasing significantly. This segment tends to lead permanent hiring in the early stages of a recovery. Both Manpower and Kelly report that demand for temp workers continued to rise smartly in January. They say these increases are in line with typical recoveries, much like the industry's experience in 1994, just before overall employment started to take off. Still, most employers remain cautious, even when booking temporary services. Rather than ordering additional temp workers a week or two in advance, as is the usual practice, clients have been sending in last-minute orders when they actually need to increase production. And as I suggested in my question, the other common refrain is that businesses are all saying that they will do more with less. Few firms are planning further layoffs, but almost all of them say that they are very hesitant to hire on a permanent basis.

Like President Plosser's, my staff has studied unemployment durations during recessions, and their analysis raises further concerns. I would say that the recovery in the labor market will be sluggish. So I am less optimistic than Charlie was. Even after adjusting for demographic trends and the severity of the downturn, the average duration of unemployment spells is extremely high, and my staff also says that about half of this may be due to the extension of UI benefits. The rate at which people find jobs tends to fall a good deal as spells lengthen. Workers are less likely to be good matches for the jobs that are available. Their labor force attachment weakens, and their skills deteriorate. Consequently, many of the unemployed are likely to be without jobs for quite some time. For these long-term unemployed, the adjustment process back

to a more steady-state duration was long in the 1974–75 downturn, it was longer in the 1982–83 downturn, and today they have even further to go than in those cycles. Now, I suppose lower wages might speed this adjustment. That would be the normal type of response. But in any event, income growth, consumer confidence, and demand will likely suffer.

Turning to financial conditions, my directors and business contacts report that the availability of credit continues to increase. For example, some hedge funds that had previously experienced reductions in bank credit lines are now getting calls offering substantially larger lines at low spreads. Worries about price exuberance do seem premature, though. Still, spreads in bond markets have fallen to the point where traders we talked to expressed concerns that some risk premiums are being pushed too low. In other conversations, many people, like my directors, mention that there is cash on the sidelines waiting to be deployed. But, frankly, when I asked them for examples of what they were talking about, I was kind of underwhelmed. There is an impression that there are these funds ready to flow in, but it is hard to tell exactly where they are coming from or where they will be going. We have received some positive commentary regarding small improvements in CRE financing. Some CRE loans are being restructured. Often the values are being written down significantly, but at least the problems are beginning to be addressed.

There is not much new to report about the inflation outlook, I would say. Wage increases are small or non-existent. My manufacturing contacts did not express strong concerns over higher commodity prices at the moment.

In terms of the forecast, our outlook is pretty much where it has been for the last three or four meetings. We see GDP growth being about 3½ percent this year, increasing to the 4 and

4½ percent range in 2011 and 2012. And we're expecting slightly lower core inflation this year and then some gradual pickup to about 1¾ to 2 percent by 2012.

Now, I might regret this type of comment, but President Plosser brought up an interesting point, and I have written down here, "I would like to have more discussion." That is the possible regretful part. [Laughter] The idea that taking out shelter might be an important indicator of underlying inflationary pressures does seem to come up every cycle one way or another. Either shelter is too high or it's too low. And I think Charlie is right to say that we don't want to get involved in taking out these price elements in each argument. But I would say that focusing on total PCE or headline inflation is not going to be a panacea, as we might think. We would then have to start focusing on medium-term projections for inflation, and we're simply going to disagree on how to go about doing that. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. My views on the outlook have changed remarkably little during the intermeeting period in spite of incoming data prompting us to revise up substantially our estimate of last quarter's GDP growth. As the Greenbook emphasizes, that upward revision mainly reflects a dramatic reduction in the pace of inventory liquidation. While it's heartening that inventory overhangs are no longer such a major drag on the economy, I would be more reassured if the surprise had reflected unexpected strength in final sales. Instead, both my retail contacts and the incoming data suggest that the holiday shopping season was lackluster, even though tight inventory management made it far more profitable than 2008. Moreover, businesses are still very cautious about capital spending.

Going forward, we anticipate moderate growth in the first half of this year, similar to the Greenbook, and see this forecast as consistent with recent data. I expect real GDP growth to

strengthen over time, rising from about 3½ percent this year to about 4½ percent in 2011 and 2012. This forecast is predicated on strong private demand coming on line as the impetus to growth from fiscal stimulus fades away later this year. Private demand seems likely to pick up as financial conditions ease further with higher equity prices, narrower risk spreads, and improved bank credit supply.

The risks to this forecast appear fairly evenly balanced. On the upside, it is possible that history will repeat itself. Every previous deep postwar recession has been followed by faster growth than I expect this time. Post-recession booms commonly reflect a spurt of pent-up demand, and we could see such a snapback if, for example, households and businesses postponed spending during the period of greatest economic uncertainty and now feel more secure and ready to open their wallets. So far such a scenario doesn't square with information from my contacts, but it remains a plausible risk. On the downside, although my economic growth forecast is similar to the Greenbook, it's strikingly optimistic relative to most private-sector forecasters. About 90 percent of private-sector growth projections, including those in the Blue Chip sample, predict weaker growth than I do. My optimism may not be justified if, for example, credit constraints are more persistent than expected, perhaps fed by mounting commercial real estate losses at banks. Also, the fallout on households from foreclosures could be more severe than I anticipate.

Turning to the labor market, I expect unemployment to remain painfully high for years, edging down to 9½ percent by the end of this year and 8¼ percent by the end of 2011. However, if last year is any guide, then this forecast is especially uncertain because the big surprise in 2009 was the steep rise in the unemployment rate. For example, the median FOMC projection for last January was a very accurate guide to real GDP growth and core and overall inflation in 2009.

For these three variables, our median forecast error was inside the one standard-error bands that we published based on past projection errors. The fly in the ointment was the median FOMC forecast for the 2009 unemployment rate, which was off by 1½ percentage points, an error of three standard deviations. A three-sigma annual forecast error should come along about once every 400 years.

MR. KOCHERLAKOTA. So it won't happen again. [Laughter]

MS. YELLEN. Clearly, something went seriously off track. What went off track last year was Okun's law, the usually reliable empirical relationship between output and the unemployment rate that underlies most macroeconomic forecasts. Based on actual real GDP growth in 2009, Okun's law would have predicted an unemployment rate of just over 8 percent by the end of last year, much lower than the 10 percent we got.

So how can Okun's law be reconciled with the output and unemployment data for 2009? First, the NAIRU may have risen, as President Plosser suggested, so that the currently reported unemployment rate is essentially too high. This is also the Greenbook's solution to the puzzle. The Greenbook assumes that extended unemployment benefits are temporarily boosting the effective NAIRU to 6¼ percent, and certainly a higher NAIRU could be part of the story. But my staff continues to find little underlying evidence that the NAIRU has jumped up enough to close the gap. For example, exit rates from long-duration unemployment have behaved much as they typically do over the business cycle. The same is true for other labor variables, such as labor force participation and hours per worker. Indeed, the fact that labor force participation was not elevated last year is hard to square with the notion that large numbers of people are staying in the labor force just to get extended unemployment benefits.

Instead, the lion's share of the deviation from Okun's law in 2009 reflects a surge in labor productivity. Higher productivity allowed output to stay flat last year while employment dropped and the unemployment rate shot well up past our forecasts. It is always difficult to discern to what extent movements in productivity over a single year are temporary or permanent. However, some evidence supports the view that a significant portion of this jump in productivity growth may be permanent. If so, then potential output last year grew much faster than typically estimated as, for example, in the Greenbook and the chart that Dan distributed to us.

Faster growth in potential last year and the resulting wider output gap would help reconcile Okun's law with the data. This resolution of the puzzle is hard to square with historical evidence suggesting that financial crises commonly lower the equilibrium level of output because adverse shocks to financial intermediation require significant real adjustments in the economy that can lower the equilibrium level of output. However, the hypothesis that the breakdown of Okun's law reflects a higher level of potential and a wider output gap is consistent with labor and productivity data. I also consider it consistent with the anecdotal reports from my contacts. They uniformly think that the productivity gains they have put in place are permanent and not the result of an unsustainable spurt of effort. Furthermore, although the low-hanging fruit of productivity improvements seems to have been picked, there is widespread optimism for further gains, albeit at a slower pace. Indeed, with opportunities for increasing output through productivity gains going forward, many businesses remain very cautious about hiring.

Finally, let me note that my resolution of the Okun's law puzzle has implications for my inflation forecast. The breakdown in Okun's law reflects the difference between the labor-side and the product-side measures of economic slack, with the labor measures suggesting more slack than the output measures. Essentially, I see a rise in the effective level of potential output as at

least as important a factor in reconciling Okun's law as a rise in the effective NAIRU. This puts the effective amount of slack in the economy higher than in the Greenbook and may argue for lower inflation going forward. Indeed, my forecast for core inflation runs a bit below the Greenbook over the next few years.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. Our region of the country continues to show modest, steady improvement across the areas. To begin with, in terms of the investment outlooks, in energy, where we've seen some pretty nice recoveries, there is a return to some pretty vigorous investments in that area, in oil rig counts and so forth. Agriculture also has shown improvement, and we're seeing investments regain there. Our manufacturing side, our manufacturing survey shows continued improvement in the most recent survey for this month. There is an issue around other industries in terms of the ability to invest, but because of excess capacity, there is a tendency to wait and see, but I think they are in a position to begin to invest if their confidence continues to improve. We have had a couple of instances, anecdotally, where one of our directors has had a desire to expand and has found the financing to be readily available. Another has had one of their companies acquired, and the acquiring company's financing to make that acquisition was fairly readily available. So there is that note of improvement. On the labor market, our layoffs are subsiding clearly, but the hiring is very modest, so one interpretation of that is we may be at that inflection point, I hope.

Looking to the national economy, I am seeing, along the lines of the broad consensus here, 3¼ percent growth in 2010 and, beyond that, further improvements toward 4 percent, spurred in part by the stimulus and in part by monetary policy. The inflation outlook under these conditions still is modest, and I see that in 2010 as well. On balance, though, I see the story on

the national economy as continuing to improve and continuing to show a strengthening outlook, and I think that is the critical element for us. Thank you.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. My outlook has not changed significantly since our December meeting or since the last forecast submission in November. My outlook for real GDP growth for the first half of 2010 has been consistently on the softer side of the forecast distribution, and currently my outlook for the entire year falls on the low side as well. My outlook for growth is restrained relative to a typical business cycle recovery path for some of the reasons that many of us have discussed before—wealth losses, credit constraints, weak labor markets, and increased preferences for liquidity, just to name a few.

However, I also have a notably more pessimistic assessment of capital spending this year than is shown in the Greenbook baseline, and so I would like to focus my comments on that sector. Business executives appear to be unusually aggressive about restraining their capital spending this year. According to the survey that the Board staff asked us to conduct, capital investment plans of the respondents in my District remain remarkably modest following last year's steep contraction in capital spending. In my conversations with CEOs of some very large companies, several important factors emerged. These firms have plenty of cash, and they have little need to borrow, so credit constraints are not the issues for many of these large companies. But with no top-line growth, holding down investment spending increases profits and adds flexibility. Firms have been challenging themselves to see how much paring back they can do to generate cash. One executive told me that he never thought that he would reduce capital spending below his depreciation charges, but last year his cap-ex was equal to one-half of his depreciation.

Business executives also tell me that uncertainties over health care reform, cap and trade, and corporate tax policies are significant impediments in their capital spending decisions. On the margins, these factors are pushing their plans for capital spending offshore, where the underlying longer-term growth dynamics favor investments relative to the United States. Another element in the capital spending decision process is the underlying amount of excess labor capacity. Many companies have reduced work hours and furloughed employees, and the CEO of one manufacturing company that has 70,000 employees worldwide told me that his entire workforce was required to take one week off per quarter. Just eliminating that program adds 8 percent capacity to his workforce, and just yesterday this CEO announced that they have eliminated that program, so that is a positive sign. Nonetheless, this CEO and the other CEOs that I talked to said that they are going to use overtime well before they take on any new positions. Comments like these persuade me that labor markets and, hence, household spending will be quite moderate for a while. It also seems to me that it is going to take longer than usual to get a sense of when the recovery is truly taking hold.

Putting all of these pieces together, I continue to see weak growth in the current year, just 2½ percent over the entire 2010. In my outlook, the recovery doesn't really start to gain momentum until 2011, when I see GDP growth hitting roughly 4¼ percent. As job losses moderate and many people remain out of the labor markets, I expect the unemployment rate to edge down to 9½ percent at the end of this year and to fall to just below 8 percent in the fourth quarter of 2011.

Turning to inflation, the incoming data continue to confirm my outlook of slowing core inflation in the near term. The Cleveland Fed's median and trimmed mean analysis of the consumer price data consistently points to a further moderation of PCE core inflation to about

1 percent this year. Despite the continued and substantial resource slack, renewed economic growth and anchored expectations pull up PCE core inflation in my outlook to 1.5 percent in 2011 and 1.7 percent in 2012. That said, I am hearing some increasing reports about concerns about commodity-price increases. Although the contacts who talk about these concerns say that the fundamentals don't support sustained commodity-price increases, there is some concern emerging that in the current environment of rising federal deficits and accommodative monetary policy, inflation expectations could destabilize as a result of these commodity-price movements.

So, overall, the risks to my outlook for economic growth and inflation remain balanced, and the uncertainty attached to my projections remains high. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I will focus my remarks on only four elements of the current economic situation—conditions in the Ninth District, national labor market conditions, the inflation outlook, and conditions in financial markets. The first two feed into my thinking about policy on interest rates, and the last two feed into my thinking about the balance sheet.

Economic conditions in the Ninth District can be summarized with a three-word phrase, which actually President Hoenig used: “wait and see.” Businesses see economic conditions as stable but not improving greatly. There are few plans for capital expenditure. There are some complaints of difficulties in getting credit, but many businesses do have cash, and they are choosing not to expand. The basic story is a simple one, which we just heard from Presidents Hoenig and Pianalto. Businesses have unused capacity, but they also have a great deal of uncertainty about future demand. They are waiting and seeing whether demand will actually return to the levels that warrant further expansion.

Data for the Ninth District are consistent with this description of an economy that is stable but not improving. Unemployment in Minnesota, which contains half our population, has ranged between 7.4 percent and 7.6 percent over the past four months. This may sound low to some of you around the table, but unemployment in Minnesota was 4.8 percent in December 2007. In Wisconsin, unemployment ranged between 8.4 percent and 8.2 percent from September through November but has jumped up to 8.7 percent in December; unemployment was, similar to Minnesota's, around 4.5 percent in December 2007. In a similar vein, employment fell sharply in the Dakotas and Montana from November to December.

Let me turn, then, to the national labor market. These are figures that are all familiar to us. The unemployment rate in December was 10 percent, which is more than double the unemployment rate in December 2007 at the start of the recession. Unemployment has been roughly stable over the past three months. The employment picture is similar. Employment in December 2009 is nearly 6 percent lower than in December 2007, and it has been essentially flat the past three months. Given these figures, it is no surprise that the Greenbook predicts that unemployment will still be 9.5 percent by the end of 2010 and 8.2 percent by the end of 2011. I agree with this forecast and, indeed, believe that it may well prove to be too optimistic. So I think the risks are on the upside. I believe that there is a lot of work to be done before we can say that we are fulfilling the employment side of our dual mandate.

I turn next to the outlook for inflation. Both realizations and expectations of inflation remain within desired ranges. There has been some upward movement in the break-even inflation rates encoded in TIPS bonds. However, inflation expectations and realizations remain below 2.5 percent for both five- and ten-year TIPS bonds. My own outlook is for inflation to average less than 2 percent per year over the next three years. However, it is important to keep

in mind that expectations alone, as one summary statistic, do not tell the full story about inflation. I have argued at previous meetings that our large balance sheet combined with the large federal debt implies that we face a low probability risk of high inflation. So I am worried about a tail event in inflation. It is always hard to find ex ante evidence of this kind of tail risk. So let me just cite two pieces of suggestive confirming information.

If you look at the euro-dollar options market, prices of options in euro futures imply that there is a positive but low probability that the dollar will decline more than 24 percent against the euro over the coming year. Those same prices put a zero probability on the event that the dollar will increase against the euro more than 12 percent. So there is an asymmetry in the prices of these options. That exactly suggests the kind of tail risk in dollar inflation that concerns me. I think better evidence—which I just learned yesterday—is that these premiums were skewed toward the higher long rates that Brian Sack showed us in his presentation, which have gone up quite a bit. That, again, is evidence of people wanting to pay for protection against that kind of tail-risk event in inflation. That is a concern to me that I link directly to our balance sheet.

Let me turn, finally, to the condition of financial markets. And here the news is excellent. Interbank loan spreads are low relative to historical norms, as are corporate bond spreads. Financial markets are functioning—this is putting it mildly—much better than they did in late 2008 and early 2009. This fact has important consequences for our discussion of policy, which will be taking place soon, I guess. There are many forms of relatively riskless debt available for investors. When markets are functioning poorly, cross-market arbitrage across these various instruments is very difficult, and so it ends up as a bunch of segmenting markets, where different assets are essentially traded in distinct, relatively small markets. Intervention in a given one of these markets can have big price effects as a result. When markets are

functioning well, these roughly substitutable assets are traded in a single well-integrated market. Selling even \$1 trillion of assets over a five-year period into this large market is likely to have only modest effects on prices relative to buying a bunch of assets in the situation in which these markets were distinct from one another. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. The economy appears to be evolving along a trajectory very close to what we had anticipated several months ago. The end of the deep inventory liquidation cycle has led to a strong bounce in economic activity in the last quarter, but final demand growth remained weak. Because the boost from the swing in inventories will prove temporary, real GDP growth is likely to slow sharply during the first half of 2010. Consumption growth is likely to remain subdued as real disposable income rises only slowly and households respond to high debt burdens and lower net ratios of worth to income by continuing to save a higher proportion of their incomes. I'm not sure what will happen to the household saving rate, but flat to higher seems much more likely than a decline from current levels. As a result, the type of dynamic in which recoveries get strong support from housing and consumption appears likely to be mostly absent in 2010. For 2010, we anticipate a growth trajectory somewhat weaker than the consensus. But relative to the degree of uncertainty about many aspects of the outlook, I would argue that the differences in the real GDP forecasts around the table are actually pretty trivial, reflecting relatively minor differences in views about how factors such as credit availability, the desired saving rate, and the timing and speed of recovery in housing will influence the level of real activity over the next year.

For myself, I'm particularly uncertain about how increases in labor demand will feed through to the unemployment rate. I notice that the central tendency projections show a very

narrow range, but I think the outlook there is highly uncertain. Hours worked and the participation rate have both fallen sharply, suggesting that, even if labor demand picks up, this may not translate into a meaningful decline in the unemployment rate anytime soon. I'm also very uncertain about what productivity growth is going to do this year. Last year's spurt was a surprise. It's probably going to prove temporary, but I'm uncertain about whether we are going to go from above trend to below trend this year or we'll settle down close to the longer-term trend. And I don't know what the longer-term trend is either anymore. So, as a consequence of all of this, even if I knew what GDP growth would be this year with certainty, I'm very uncertain about how it actually maps back into the unemployment rates.

There are four issues that are troubling me to various degrees. I'm going to mention them—the order has no significance. First, I wonder what to make about the gradual updrift in inflation expectations embodied in five-year, five-year-forward break-even TIPS measures, which I talked about a bit yesterday. My instinct is not to worry for now, but at what point are the increases big enough that they have to become a significant policy concern? As I said, I'm not that worried yet because the rise is not borne out by most survey measures of inflation expectations. And the fact that the 10-year, 10-year-forward measures are below the 5-year, 5-year-forward measures suggests that the measures may be somewhat tainted by technical factors.

In that vein, as Brian Sack mentioned yesterday, the rise may be partially explained away by the relative paucity of the supply of TIPS relative to nominal Treasuries. Less relative supply may be holding down TIPS yields, and this might lead to higher break-even inflation measures. At the same time, I would not dismiss these developments in their entirety. There is evidence that market participants are still worried about our ability to exit smoothly, and this is suggested by the skew that President Kocherlakota and Brian mentioned yesterday in terms of swaption

prices, in which investors are willing to pay more for protection against a rise in rates than against a fall. If worries about exit are the explanation for the rise in five-year, five-year-forward break-even inflation measures, then this argues not for a tighter monetary policy regime but instead for measures to reduce this perceived risk—in other words (1) an early explication of how we will exit in order to reduce uncertainty about our ability to do so and (2) a belt-and-suspenders approach, not just relying on the interest on excess reserves tool but also demonstrating our ability to drain a large amount of excess reserves prior to tightening monetary policy.

The second thing that I'm worried about is that I don't think we know much about the consequences of our exit from our various emergency liquidity facilities and large-scale asset-purchase programs. We don't know how important the absence of these backstops might be if there were future shocks to a still-fragile financial system. We also don't know what the end of the large-scale asset-purchase program means for long-term rates and financial conditions more generally. Now, this uncertainty will presumably resolve itself over time, but right now I think this uncertainty implies patience with respect to our conduct of monetary policy.

Third, I'm worried about the risk of a spike in risk premiums and a tightening of financial conditions caused by worries about fiscal sustainability. In particular, the circumstances in the EU strike me as likely to get worse before they get better. Greece wants to do less in terms of fiscal consolidation. The EU wants them to do more. And that type of game of chicken can end badly. Despite the fact that Greece had a successful five-year note sale earlier this week, their situation could end quite suddenly. The ability of Greece to credibly pay higher interest rates is limited by the size of their deficit and the fact that they have a very large debt-to-GDP ratio. More important, this isn't just about Greece. The contagion could be significant. After all, there

are many countries, both in Europe and even closer to home, with large deficits that are dependent on the kindness of strangers.

Fourth, I'm worried that we have made little fundamental progress in rebalancing the global economy. We need greater foreign exchange rate flexibility, and we need less dollar reserve accumulation by foreign central banks. Over time we need to have a lower consumption share of GDP, and the Chinese need to have a higher one, but I don't see much progress in this area. This leads to two concerns: (1) that the global recovery will be more muted, as there is not a ready replacement for the U.S. consumer to serve as the engine for global growth and (2) that we are building up potentially big cliff effects as the imbalances, the high rate of reserve accumulation, and the gap between current exchange rates and where longer-term sustainable exchange rates are moving grow ever, ever larger. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. My forecast was similar to the Greenbook's—a little weaker, but not much: private demand and GDP gradually strengthens as financial conditions continue to improve, especially as banks rebuild capital and begin to compete more effectively for new business; as wealth turns around and confidence rebuilds; and as households and businesses, responding to the low cost of capital and rising confidence, increase spending on durables, houses, and capital equipment to keep stocks in better alignment with output, income, and wealth. Economic growth exceeds potential, but not by much, and unemployment recedes slowly in my forecast. Continued large slack keeps inflation subdued, well below my 2 percent objective for the next three years, on the assumptions that commodity prices rise in line with futures markets and that longer-term inflation expectations remain anchored.

Like others, I noted that my forecast was pretty much unchanged from the one I made at the end of October, almost down to the decimal point, and I'm pretty sure that this is the first time in several years that has happened over a three-month period. I think the encouraging aspect of this is that incoming data over the past three months have tended to confirm that an upswing in the economy is in train. The rebound in consumption and in some business capital spending is persistent enough to suggest that the recovery can survive the end of the boost from the inventory cycle and the ebbing of fiscal stimulus, and confidence in the strength of private demand is reinforced by the net improvement in financial conditions over the past three months, which will support that spending.

The less encouraging aspect of an unchanged forecast since late October is that the incoming information has also confirmed that the recovery is likely to be gradual rather than sharp, and consumption and investment are strengthening slowly compared with past recoveries from severe recessions. Most recent data on the labor market for December and initial claims reports since then, have underlined continuing weakness and the prospects for very slow improvement, which we've discussed around the table. By any measure, the economy is now operating with a substantial output gap, and that gap is likely to close very gradually.

I think inflation data have also been largely in line with expectations. I agree with President Plosser. It's very hard to sort out the underlying rate of inflation from all of these numbers, but I have been looking at core inflation as a better predictor of future inflation than headline inflation, and core does seem to be decelerating. Both core CPI inflation and core PCE inflation increased more slowly in the second half of the year than in the first, despite the rise in energy prices that boosted headline inflation. Both core measures are well below the 2 percent level for overall inflation and are likely to decelerate further under the highly competitive

conditions in labor, beer, and other product markets. [Laughter] Moreover, with energy prices well off their highs of a few months ago—I think down what, \$10 over the last three or four weeks?—headline inflation should fall back toward core. It will be interesting to see what that does to inflation expectations. Survey measures of longer-term expectations are stable to slightly lower, but market-based measures show some concerns about the possibility of higher inflation. I agree with everyone else around the table: We need to watch that very, very carefully.

Like many others, I had uncertainty greater than usual. Sorry, President Bullard, but I actually think there are reasons for that in the unusual situation.

MR. BULLARD. This time I mean it, right? [Laughter]

MR. KOHN. This time I mean it. The severest recession since World War II and an unprecedented financial disruption, and I had the risks balanced around my central tendencies. I must admit, as I was staring at the computer screen trying to decide whether growth would be 3.2 or 3.5 or inflation 1.3 or 1.4, it occurred to me that the risks and uncertainties were different and more profound than the stuff I usually concentrate on when making a forecast. Now, maybe this is because I was doing this last Friday, and a lot of things were happening.

I would include in that list of risks, first, the distinct possibility that the regulatory and legislative response to the crisis and the public anger and fear it engendered could undermine the rebound in the availability of credit from banks and, more generally, whether uncertainty about a broad range of policies and even a sense of hostility to businesses might not inhibit business investment. For banks we are raising base levels of capital and liquidity, possibly adding surcharges for systemically important institutions, taxing borrowing, and restricting business models. Now, each of these may be desirable to some extent when taken alone, but how they will add up does worry me. We are raising the cost of bank lending to households and

businesses. It was too low before. Risk premiums were too low, but I think we run a risk of going too far in the other direction.

Second, I see a number of question marks overseas with potentially significant effects. This overlaps to some extent with the Vice Chairman's comments. Greece's situation is a test of whether the institutions of the European Community and the monetary union are strong enough and coherent enough to craft a solution that preserves discipline but can be accepted by the Greek population. And Greece's problems will put additional pressure for fiscal consolidation on other European countries with fiscal problems. China's economic growth has been an important factor supporting the global recovery, but that growth was built on a 30 percent increase in bank lending last year, much of it for questionable local government and state-owned enterprise investments, a lot of those investments in property markets driving up the prices of property. I think we have seen this movie before—lending supporting property prices, and it had kind of a bad ending. Whether the government can walk the tightrope of sounder lending and less upward pressure on asset and consumer prices while sustaining robust growth is in my mind still an open question. It could slip off either side of that tightrope, even in what is still a semi-command-and-control economy, and the Chinese government must deal with the issues that Bill was talking about in the current conjuncture, while needing to address the longer-run structural problems of inadequate domestic demand.

Third, commodity prices and their implications were on my list of concerns. China's move toward restraint has the important side effect of taking some pressure off commodity prices. Oil prices have fallen \$10 since early January, and thus have made me more confident in adopting the futures market path of slow increases in commodity prices. Still, as I think the conversation with Nathan earlier suggested, we don't really understand what's driving these

commodity prices. A further spike is a risk with a number of adverse consequences. Obviously it could raise inflation expectations, which would pressure central banks to withdraw stimulus before output was on a path that promised the eventual closure of gaps. Just the mere rise in the commodity and petroleum prices reduces real income and spending power.

So though the incoming data have tended to confirm that a recovery is under way and inflation is likely to be subdued, Mr. Chairman, I found plenty to worry about when I was putting my forecast together. Thank you.

CHAIRMAN BERNANKE. In evaluating your level of uncertainty, you have a long experience to draw on. [Laughter] Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. I am going to try to answer two questions in my discussion today. One is a familiar one: What is the most significant development since we last met? And the second is, Who knew free money would be so popular? [Laughter]

So I stared at my screen and tried to answer that first question on the most significant development since we last met, and Don, as usual, stole my homework assignment. The most significant development is Washington. The most significant development is the path and variance around policy in the intermeeting period with, I think, very real consequences for the real economy. The negative feedback loop afflicts the political economy much as it afflicts the real economy. It is said in Washington that even-numbered years, of which we are now early in one, bring strange things, and 2010 is proving to be persuasive evidence for that old maxim. I'm not making a statement principally about policy direction. I'm making a statement here principally about policy variance. I'm also not making a statement about gridlock, which tends not to be terribly bad news generally for real economies or financial markets. But I am talking about a variance in policies that can be extremely harmful.

I would underscore the reason for concern here with two emphases. One, particularly now when the economy is at this transitional point, if the Greenbook forecast is right and the baton is passed ably from the public sector to the private sector, we shouldn't be surprised that this is a time of Washington policy variance. But I think it's maybe more important than ever. The second reason for heightened concern is that Washington has positioned itself so centrally in this narrative that the heightened policy variance is bound to retard the natural recovery in growth and employment even more than usual. We say around this table often that policy needs to be anchored, and the reaction function of policymakers needs to be clearly understood for policy to be effective. Well, that's not unique to monetary policy, and there are real implications of this kind of variance for regulatory policy, fiscal policy, and trade policy. And in that I would reference what Governor Kohn said about the state of policies everywhere else around the world. All of this, I think, makes the job ahead for us in predicting the turn in the real economy and the inflation prospects very significant. So let me give a couple of examples.

First, regulatory policy, which again Don referenced. Without assigning particular merit to policy proposals, the changing goalposts of what is being billed as comprehensive, fundamental regulatory reform strike me as not helpful to the financial architecture. Financial firms, perhaps more than other sectors, need policy to be anchored. This may be even more important than that it's optimally decided. And if the credit channel to small businesses, which is going to be so important for job creation, is having a harder time taking advantage of highly accommodative policies and putting them into action, we run grave risks of delaying the onset of meaningful job growth in the recovery. Over the medium term this could lead to a higher NAIRU if uncertainty drives more-persistent structural unemployment, but I think in the short term it could really have grave risks for the transition happening in the real economy.

Second, let me turn to fiscal policy and the questions of variance. Market participants appear to be every bit reevaluating sovereign risks across a number of countries. The recognition of large off-balance-sheet, contingent liabilities could make ratios of official debt to GDP move higher virtually overnight. Now, recognizing that this is arithmetic, these off-balance-sheet liabilities—whether you’re thinking in the United States of Fannie Mae and Freddie Mac or you’re thinking of the European Union of what would happen if Greece weren’t to do the right things—markets could come to view sovereign risks differently. I suspect that sovereign debt markets are likely to be subjected to higher volatility until policy questions are answered, and the potential for nonlinear outcomes is real. As I have said before, if Dubai is about Dubai, and Greece is about Greece, and Fannie and Freddie are about Fannie and Freddie, then we have nothing to worry about.

Okay. The second question—Who knew that free money would be so popular? I’ll talk about two things: financial markets and inflation. If you think broadly about the intermeeting period—and maybe I would have to except the last week or two, when financial market prices seem to have leveled out and fallen and seem to have become a little more discriminating, which is generally a good thing—it still looks as though high-yield and leveraged-loan spreads and credit spreads generally continue to trend lower. Volatility measures are up since we last met, so that if you look at the VIX and at some measures of volatility in the credit markets, I think there is further upside risk in the volatility of asset prices separate and apart from what their actual levels ought to be, which has caused me to further mark down my estimates of GDP and employment growth in the forecast period.

What about inflation prospects? I think I share what I have heard to be a bit of an emerging and concerning consensus. That is, while I would note personally that the dollar sank

relative to the euro, dollar stability broadly against foreign currencies is an encouraging sign and should help mitigate some of the trends on import prices, but it's hard for me to ignore the move in nonfuel commodity prices, and it bears watching much as others have said. The trend of some of these inflation measures, particularly in a constellation of policy uncertainty around fiscal policy here and everywhere around the world and the misperception that somehow this policy uncertainty will affect the Federal Reserve, which is something that I think all of us will fight vigorously against, does raise the question about inflation expectations and puts a special burden on all of us. If policy rates were to stay as accommodative as the Greenbook suggests, given these policy uncertainties, I would be surprised if inflation and inflation expectations stayed at levels consistent with price stability in the forecast period. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. The best news I have to report is that, in the banking community, the managers are increasingly talking about how to put more loans on their books rather than collection prospects for the loans that they already have. But I'll talk first about credit quality.

I expect credit costs in 2010 to be just about the same as in 2009. Consumer and credit card delinquencies and charge-offs have peaked but remain elevated. Peaks in the first mortgage and home equity portfolios are a few quarters away but definitely in sight, and commercial real estate problems will grow but still appear manageable. Construction and land development portfolios, where the biggest losses have been, are sharply reduced as loans have been sold off, paid off, or charged off; and virtually all of the reduction in commercial real estate portfolios has come in construction and land development loans. The market for problem assets continues to improve as the prospects for massive fire sales fade. There are more bidders—going from one or

two to eight to ten—and the bidders are strategic and crowding out the speculative funds and the flippers. Prices are firming, and the banks report that their marks are holding up.

Foreclosure-mitigation efforts continue. The HAMP permanent modifications are still very low as fewer and fewer borrowers remain after each step in the process, but the picture is better than the headline, as many of those who fall out of the HAMP process still get some kind of modification from the institutions. A number of banks are now offering their own principal-reduction plans. Increasingly, though, borrowers go delinquent because they have lost their jobs. Modifications are nearly impossible without income. In such cases, the banks are formalizing programs for short sales that include deeds in lieu of foreclosure if the short sale doesn't materialize as part of the agreement. But none of these programs works if there are junior liens. Finally, banks report no problem managing the flow of OREO. In fact, OREO inventories are down a bit. So the bankers seem increasingly confident that they have the programs in place to ultimately work through loan problems, and now they realize that they need to produce some earning assets in order to maintain income.

But even as they claim to be focused on loan production, it's hard to come up with a plausible story for how lending starts to grow again. I first tried to build the story from the bottom up by looking at individual loan categories. Commercial real estate lending and, in particular, construction lending will be limited by regulatory guidance and the banks' own very dire loss experience. Residential construction loans have been worked down 43 percent from their peak at the end of 2007. In residential construction, the builders who survived are very conservative. The lenders who survived are still using highly restrictive terms. Products are being reengineered to a much lower price point, and the smaller builders have been financed by smaller banks. Many of those have not survived or have sharply curtailed their construction

lending. So I would bet on CRE being flat or down for the next two years, and I don't see any willingness to fund the level of housing starts that is forecast in the Greenbook.

Regarding consumer lending, which is more concentrated in the larger banks, subprime borrowers are an increasing fraction of the population, and they have very few borrowing options. Right now no mortgages and no unsecured loans are being offered; some auto. There is no outlet for private mortgage securitization. Fannie, Freddie, and FHA are all tightening their terms. Revolving home equity lending is flat, and amortizing junior lien balances are falling. The credit card business model has been completely changed. New card competition, if you look in your mailboxes, has moved from teaser rates to point bonuses and airline cards in an effort to attract transactors, those who create interchange income but tend not to carry balances. Portfolios are shrinking because of discontinued business lines and products, charge-offs, and voluntary attrition, and pricing is moving to more up-front APR and higher fees. Auto lending is the only sector of consumer lending that is really recovering and the only place where the subprime borrower can still get credit. So consumer lending does not seem the place to look for growth to resume.

The only real bright spot is in C&I lending, where much of the drop in funded volume has come from demand rather than supply. Every banker says that utilization rates of existing credit lines are at record lows and still falling, and these are loans that are already approved and attractively priced. Banks are chasing C&I loans primarily at the high end of the credit-quality spectrum and in segments and sectors of the economy that have improving outlooks. They are trying to improve small business credit availability despite higher charge-off rates. Some of this is due to political optics, if nothing else, but they are using balance sheet goals, second-look programs, beefing up guaranteed lending through the SBA. In addition, as the economy

improves, the larger company credit availability will in some measure pass through to smaller companies in the form of trade credit to assist suppliers or those who sell the company's products. But it is going to take an awful lot of C&I volume to fill the hole left by real estate and consumer.

So I tried to look from the top down to see where the push might be, and here I will echo both of my last two colleagues. On a more macro level, banks are shrinking assets generally and the loan book in particular in the context of their uncertainty about capital requirements, capital costs and availability, liquidity requirements, and accounting changes. The cost of funding continues to grow, with FDIC assessments and the proposed financial crisis responsibility fee. The proposal is for a 15 basis point fee on total assets less tier 1 capital and the deposit subject to FDIC assessment. For comparison, the FDIC assessment base rate is 12 to 16 basis points, and there is still an old FICO bond assessment left over from the S&L crisis that is a little over 1 basis point. There is the transaction guarantee fee for demand deposit accounts. Risk category 1 banks pay 15 basis points, although many large banks—Chase, Bank of America, Wells, Goldman, Bank of New York, Sun Trust, and BB&T, for example—opted out. Whenever a fee is assessed on assets or liabilities, based on my experience from the 23 basis point FDIC assessment, it does increase your cost of funds. It will be included in the pricing formulas for both assets and liabilities, and it will affect the minimum required spread for transactions at the margin. If it applies to the liabilities that are created when securitizations come back on the balance sheet under FAS 166 and 167, it will increase the cost of securitization; and if passed, the new fee seems likely to accelerate asset shrinkage, but it could also reduce risk as nondeposit funding is not advantaged over deposit funding.

All in all, I think the best case would be very slow growth, but the more likely outcome is continued decline in traditional bank credit for some time. Accounting changes, FDIC proposals regarding securitized assets, and legislative proposals to haircut secured lending will continue to weigh on securitizations. There is still no sign of clarity for the future of the GSEs, private mortgage securitizations, or the mortgage insurance market. So I think credit availability is going to weigh especially heavily on housing markets and consumer spending. I opted for the Greenbook forecast, but I was sobered by the results from the “weaker aggregate demand” scenario which incorporated restrictive credit availability. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I realized as all of you were speaking this morning that, after a year here, I’ve come to regard the FOMC as a bit like a big extended family in which each member finds a niche at its periodic gatherings. So, for example, as you just heard, Governor Duke frequently provides extensive insight into the state of the banking sector. President Yellen has found a role in giving us careful and illuminating expositions of important analytic issues. My role, on the other hand, it appears, is to create metaphors. [Laughter] So here we go.

The data we have seen since our last meeting suggest that the basic story line in the economy hasn’t changed. Expectations of recovery have taken firmer hold, and forecasts for 2010 of modestly above-trend growth with little prospect of unwanted inflation seem on track. But if the basic story line hasn’t changed, neither have the subplots. First, December’s unexpected drop in nonfarm payrolls may, as some have suggested, reflect some weather-related and administrative anomalies, but it may also support the kind of anecdotal reports to which President Evans was alluding of extraordinary cautiousness in hiring by many employers that

will likely persist for some undetermined length of time. And I think this is also supported by concerns about financial encumbrances to new business creation. Second, continuing declines in bank lending remind us that CRE problems and impaired credit availability for consumers, nonconforming residential mortgages, and smaller businesses will continue to hinder recovery. Third, significant imponderables remain on the economic horizon, including the impact of cessation of RMBS purchases and later this year of waning stimulus effects. Finally, the atypical etiology of the recently ended recession and of monetary and fiscal policy responses to it counsel particular alertness on our part for unanticipated and potentially rapidly developing trends, particularly in financial markets.

Not only has there been little or no change since our last meeting, I also would expect the narrative to be pretty consistent through at least the next couple of meetings. After that, I anticipate that the effect of some of the just-noted imponderables will begin to exert considerable influence on economic performance, for better or for worse and in a way that I now find difficult to predict. I also harbor an uneasy suspicion that both the run-up to the midterm elections, as Kevin was describing, and some potentially unpleasant geopolitical developments may introduce additional uncertainty into economic and financial markets, further clouding prospects for the latter part of the year.

In sum, despite reasonably clear prospects for moderately above-trend growth for the first half of calendar 2010, my uncertainty about the third and fourth quarters and beyond has not declined nearly as much from the middle of last year as I might have anticipated. The economic narrative is, thus, less like a Hemingway tale, moving crisply toward its conclusion, and more like a serialized Dickens novel, sprawling and complex and in which you know there are going

to be surprising developments in later installments, but you'll still be surprised when they occur.

Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you all. Let's take a coffee break for about 20 minutes.

[Coffee break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence? Dave Stockton, I think you have some data.

MR. STOCKTON.⁵ We do. We handed it out. You should have at your place a table and charts of the single-family home sales for December that were released this morning. As you can see, total sales were 342,000. That was weaker than we had expected. We had been thinking around 360,000. But with the upward revisions to October and November, actually the quarterly average was just about exactly what we had been anticipating. That said, stepping back from this one release and thinking about the configuration of the home sales and production data that we have seen, I think that both in trajectory and in overall tenor we are looking at a weaker housing market than we had thought and that the most recent data probably give some reflection of Governor Duke's fears and President Lacker's hopes that there may be more downside risk than upside risk to our housing forecast. [Laughter] That's all I have to say.

CHAIRMAN BERNANKE. Any questions? Let me try to summarize our discussion. I had a lot of difficulty in getting it done, so I may not be too effective this time.

Economic indicators since our last meeting were somewhat mixed. An earlier-than-expected stabilization of inventories raised fourth-quarter GDP. Overall, though, the outlook does not appear much changed from previous meetings. Participants continue to project a moderate recovery, picking up in 2011, but with high and only slowly improving unemployment rates. This recovery will depend in part on private demand being sufficiently strong to outweigh reduced support from the inventory cycle and from policy. Continued weakness in the labor market is a downside risk to the recovery scenario, as is continued financial restraint. Another

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

minor negative is state and local fiscal conditions. Consumer spending has been growing modestly with holiday sales mixed, although sentiment remains relatively poor and the bulk of spending is driven by value. Consumers are still deleveraging and are worried about the labor market and credit availability.

News on the labor market is also mixed. Fewer workers are losing jobs, but hiring is very limited, and long-duration unemployment is high. Growth in output and the difficulty of finding further cost cuts might lead to more positive employment growth, but then the possibility remains that productivity gains will continue leading to slower employment growth. Anecdotes from firms are mixed, with some being more optimistic than before. Generally, though, firms remain cautious about both economic and policy uncertainty and are unwilling to hire, build inventories, or invest until orders pick up and the range of uncertainties moderates. Larger firms have cash but are reluctant to put it to work without faster top-line growth. They are using more temporary workers, but on a just-in-time basis. Strength can be seen in some sectors, such as health care and high tech. Shipping is up somewhat, as is tourism, but generally a tone of caution still prevails.

In the housing sector, we have seen improvement in some real estate markets. Foreclosures are still an issue, although government programs and the restructuring of mortgages may be helping somewhat going forward. The question was raised about the significance of the housing sector since it is a very small part of GDP. There are, though, certainly risks to the sector, including the removal of the MBS purchase support and fiscal supports.

Financial conditions remain generally supportive and were, in fact, discussed less than in previous meetings. Spreads are down. Liquidity is better. Volatility is somewhat up. We are seeing some riskier practices, but it may be too soon to worry yet about over-exuberance. Bank

credit problems look to be peaking and are being better managed, but bank lending seems likely to keep contracting for a while. Commercial real estate loans remain a major risk for many banks, but again, improved management is helping. Lending is likely to continue to decline, as I noted.

Internationally, foreign growth is helping to support industrial production and recovery in the United States. However, there are a number of risks associated with the foreign economy, including questions of fiscal sustainability, as in Greece; the issue of whether China's recovery can be sustained at the current pace; the sustainability of current account balances; and the possibility that growth in emerging markets and abroad will lead to increased commodity prices with resulting effects on inflation.

Turning to inflation, it has been relatively stable. Price discounting is less, but pricing power remains limited. Core measures of inflation remain moderate with rents flat to down. However, the decline in shelter costs may be exaggerating the extent of underlying disinflation. Wage growth continues tepid. Slack clearly seem high, though measurement is difficult. For example, on the one hand, emergency unemployment benefits may be increasing the duration of unemployment and raising the effective NAIRU. On the other hand, the breakdown of Okun's law and the associated strong productivity gains might be interpreted as saying that the gap is even larger than output-based measures suggest. Again, commodity prices associated with expanding global activity are an inflation risk. There were numerous comments about inflation expectations. Those measures were mixed over the intermeeting period, with survey measures fairly stable. But concern was expressed about increases in five-year, five-year forward breakeven inflation rates as well as indicators of inflation risk premiums, suggesting rising concerns about medium-term inflation risks. Concerns on the part of the public about the fiscal

deficit, the Fed's balance sheet, and political factors surrounding the Fed might be affecting these medium-term inflation expectations somewhat.

So I think the overall picture is one of continued expectation for moderate recovery, weakness in the labor market, but a great deal of uncertainty associated with that general prognosis. I apologize to those whose comments were excluded from the summary, but are there any questions or comments?

Let me add just a few words. I think the discussion today was exceptionally comprehensive. It's actually difficult to say something new because in many ways the outlook looks quite the same as it has for some months now. I think it's appropriate that we are almost at Groundhog Day, with its repetition. [Laughter] When I was making my notes for these remarks, I was looking at the financial indicators, and I noted that the stock prices and the long-term bond yields were exactly what they were at the last FOMC meeting. I think that has changed a bit in the last few days, but there really has not been, in my view, a very significant change in financial conditions. Perhaps a bit of good news on the bank side: It looks as though the credit risks are stabilizing somewhat, and we've seen a bit of good news from the survey of loan officers. On the real side, as people have noted, we have a powerful short-term inventory cycle, which is affecting fourth-quarter GDP. But there isn't much change around the table in views of where the most likely outcome will be in terms of growth and employment over the next year.

I would just like to build on a comment by President Bullard about the Lake Wobegon theory of uncertainty [laughter]—that uncertainty is always greater than average. I think uncertainty actually is greater than average right now. There are a number of areas where it remains very difficult for us to be highly confident about this forecast, notwithstanding the fact that it has remained stable for several meetings.

First, on the pace of recovery, I think there are risks in both directions. In order to get the moderate growth, the 3 to 4 percent growth that people have been talking about, what we need essentially, and it is not yet demonstrably seen, is a handoff from the inventory cycle, from fiscal supports to sustainable growth in final demand of about 3 to 4 percent—in particular, consumption growth around 2½ to 3 percent, which is what the Greenbook is forecasting. Those are reasonable projections, given the underlying fundamentals, but again, they are projections and not realizations. We have not yet seen final demand pick up to that higher level, and when I wake up at night and I'm recovering from the nightmare, I remember the summer of 2008, when we were quite comfortable about a steady recovery moving forward for the rest of the year. So I think that, while there are good reasons to think that moderate growth will, in fact, be sustained in 2010, again, this is still a projection and not a reality. On the other hand, I think that we should recall that we are talking about the downward phase of the recession. There was a lot of discussion about state-switching models and the fact that, in a recession, dynamics can become very powerful and drive you very quickly into a decline. Certainly some of those factors can work in the upward direction as well. It's possible that pent-up demand of various kinds, positive feedback loops, and increasing confidence could lead to a more powerful recovery. We certainly hope that is the case, and we will want to watch that carefully.

The second area of uncertainty that was discussed quite extensively around the table is in the labor market, the case of job creation. Again, I talked last time about the extraordinary depth of this employment recession measured not only in terms of unemployment rates but also in terms of hours, duration of unemployment, and part-time work. I think there is a very real possibility that, even with a moderate recovery, employment will grow very slowly and unemployment will climb very slowly. That, in turn, will have obviously negative consequences

for sustainability of consumer spending and final demand. As President Yellen talked about, though, one of the real uncertainties here has to do with the meaning of these tremendous productivity gains we have been seeing. If they do reflect unsustainable, temporary cost-cutting measures, essentially getting people to work harder for a temporary period, then they should reverse, and as a result, as the economy recovers, we might see stronger job creation. But if they can be maintained, as some anecdotes suggest they can be, then that, of course, will be an additional factor dragging down employment. We do not understand the sources of these productivity gains. We don't really understand the interactions between job creation and credit availability, and so I think there's a lot of uncertainty still in that area as well.

That leads me to the third area of uncertainty, which is the banking system. I think generally things are better there. It's very good news that banks have been able to pay back government capital and raise private capital. There is evidence that credit losses are stabilizing and that banks, as Governor Duke was discussing, are getting better control over their portfolios. All that being said, the rate of losses that banks are experiencing is still extraordinarily high on a historical basis, and very important upside risks on losses remain in commercial real estate, in mortgages, and in other areas. We have already seen to our great regret the power of instability in the banking system and its ability to amplify weakness in other parts of the economy, and so I do not consider this to be a rearview mirror situation. I think it is still something we need to continue to look at.

Finally, there was quite a bit of discussion—I thought very interesting discussion—about the uncertainties regarding inflation. I was also going to talk about the difficulties in measuring slack, and that has been covered pretty well. But we note that, for example, besides the unemployment insurance, we have an unusually large number of workers with long-term

unemployment spells. Are these in some sense less effective in bringing down wages under the usual kind of Phillips curve interpretation? An alternative way of looking at this, though, is that the weakness of the labor market is reflected not only on the extensive margin—the number of workers, the unemployment rate—but also on the intensive margin—hours of work per week, permanent versus temporary workers, and so on. Arguably there is even more slack in the labor market than is suggested by the unemployment rate. I just raise this as saying that there are a lot of uncertainties about how much slack there is and how much downward pressure that will place on inflation. I also was going to mention, as a number of people have, the larger medium-term issues about fiscal sustainability, about the politics surrounding the Federal Reserve, our balance sheet, all of those issues. They are very difficult ones, and even if we feel comfortable ourselves that we have those under control, the public may not be as comfortable, and that is itself something we have to be concerned about.

So the bottom line from both my summary and my few additional comments is that I think we should be encouraged that the path of recovery still seems to be on track; that we look to be having greater stability in the financial sector and in the housing sector; that we are seeing a spurt of growth from the inventory cycle, which in turn will feed down the supply chain into other production. But that said, we are still at a very uncertain phase, and I think that we need to be appropriately patient to continue to allow events to unfold as we get a better sense of what the economy is actually going to do. I think we ought to focus, as we'll talk about policy in just a minute, on a gradual and steady normalization of our overall policy stance, moving steadily toward the exit without lurching or shocking the system. Of course, if the situation changes, we can move more aggressively. But as of right now, again, with the level of uncertainty being what

it is, I think we should move gingerly and just continue to move in a steady way toward more normal policy.

Comments or questions? Why don't we turn now to the policy go-round, and I will turn to Bill English to introduce that.

MR. ENGLISH.⁶ Thank you, Mr. Chairman. I will be referring to the package that was distributed during the coffee break, which is labeled "Material for FOMC Briefing on Monetary Policy Alternatives." The package includes draft statements and directives for alternatives A, B, and C. As usual, the Committee may want to consider combining the elements of the alternative statements in other ways.

Despite last week's volatility in asset markets, financial conditions generally remain supportive of growth. Corporate bond spreads fell further over the intermeeting period, and bond issuance has been substantial. Though they declined notably last week, equity prices remain close to their levels in mid-December. Mortgage rates and spreads remain low for conforming loans. The most recent Senior Loan Officer Opinion Survey indicated that banks have stopped tightening lending standards for most types of loans and that the fractions tightening terms continued to wane. Nonetheless, bank lending standards and terms remain tight, and access to credit for smaller businesses and for households without strong credit histories remains strained. Given the pressures on banks from anticipated loan losses and from potential government actions, bank lending policies are likely to ease fairly slowly.

As Brian Madigan reported earlier, your economic projections continue to show a gradual recovery this year that gains momentum next year and in 2012. However, almost all of you see the unemployment rate remaining well above its long-run level for some time, and some of you expect unemployment to remain elevated for more than five or six years. Most of you project that inflation will remain subdued—around or below its longer-term "mandate consistent" level—over the next few years.

With unemployment predicted to decline slowly and inflation projected to be at or below its mandate-consistent level for some time, the Committee might be dissatisfied with the outlook and so decide to provide additional policy stimulus as in alternative A on page 2 of the package. Members might also see further stimulus as appropriate in order to guard against downside risks to the outlook—for example, the possibility that the end of the large-scale asset purchases causes an unexpectedly large run-up in mortgage rates, damping housing investment and slowing the recovery. While the Committee's projections suggest that the risks to the outlook for economic growth are roughly balanced, members may see downside surprises as considerably more costly than upside surprises because output is well below potential, inflation is low, and the federal funds rate is already at its effective minimum.

⁶ The materials used by Mr. English are appended to this transcript (appendix 6).

Under alternative A, the Committee would provide additional stimulus by boosting its purchases of agency mortgage-backed securities to \$1.5 trillion from the currently planned amount of \$1.25 trillion. In order to accommodate the increase in purchases without putting undue strain on the MBS market, the Committee would extend the time frame for these transactions to the end of the third quarter. The Committee would leave its planned purchases of agency debt securities at \$175 billion and bring those purchases to a close at the end of the first quarter. The target range for the federal funds rate would remain unchanged at 0 to $\frac{1}{4}$ percent, and the statement would continue to say that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period.

Market participants do not appear to be expecting any changes in the Federal Reserve's large-scale asset purchases, so they would be surprised by a statement along the lines of alternative A. Staff estimates suggest that a \$250 billion increase in MBS purchases might lower longer-term rates by 10 to 25 basis points and, through that channel, reduce the unemployment rate two years from now by 0.1 or 0.2 percentage point relative to the rate that would otherwise prevail. In addition, short- and medium-term interest rates would presumably decline as investors pushed back their expected timing of the first increase in the federal funds rate. Equity prices would likely rise and the foreign exchange value of the dollar decline. Inflation compensation could increase if the statement undermined investors' confidence in the viability of the Federal Reserve's exit strategy or led them to mark up their beliefs regarding the Committee's long-run inflation objective.

If the Committee feels that the possible costs of additional stimulus outweigh the potential benefits, then it may be inclined to leave policy unchanged and adopt the statement provided in alternative B on page 3. Despite the progress that has been achieved thus far in developing reserve-management tools, members might remain concerned that a further increase in the size of the Federal Reserve's balance sheet could complicate the eventual exit from policy accommodation. Moreover, even if the Committee is confident that it can tighten policy when necessary, market participants may not share that confidence, and so a further increase in asset purchases could cause inflation expectations to become unmoored, potentially contributing to higher-than-desired actual inflation.

With incoming economic data providing clear evidence that the economy is expanding, the statement under alternative B would note that economic activity has continued to strengthen and reiterate that the deterioration in labor markets is abating. It would indicate that business spending now appears to be picking up and that businesses have brought inventory stocks into better alignment with sales. In view of the mixed changes in financial conditions over the intermeeting period, the statement would say that financial market conditions remain supportive of growth but would note that bank lending continues to contract. The inflation paragraph could start by acknowledging the increase in energy prices in recent months but go on to say that, with substantial resource slack and stable longer-term inflation expectations, inflation is likely to be subdued for some time. However, with oil prices having declined

notably over the past couple of weeks, the Committee may want to delete the first sentence as well as the word “however” at the start of the next sentence and simply summarize the inflation outlook as in the draft statement. As in December, the third paragraph of the statement would indicate that the Committee continues to anticipate that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period; it also would leave unchanged the amounts and timing of large-scale asset purchases.

Market participants generally appear to expect that today’s statement will be broadly similar to the December statement, more or less along the lines contemplated here. As a result, the adoption of alternative B is not likely to prompt any significant market reaction.

In yesterday’s discussion of strategies for removing policy accommodation, some participants suggested that active management of the Federal Reserve’s securities holdings could prove a useful policy tool for influencing financial market conditions. Others indicated a desire to use asset sales to reduce the overall size of the Federal Reserve’s balance sheet in preparation for raising the federal funds rate. If the Committee wanted to signal that it might choose to adjust its holdings of securities in response to changes in financial conditions or the economic outlook over coming quarters, or if it wanted to suggest that it was inclined to use asset sales before long to start to bring down the size of the balance sheet, then it might want to implement the variant of alternative B indicated by the brackets in the final sentence of the third paragraph. In this variant, the sentence would indicate that the Committee will evaluate its holdings, rather than its purchases, of securities in light of the economic outlook and financial conditions. However, members may feel that the adoption of this language at today’s meeting could be premature since large-scale asset purchases are scheduled to continue until the end of the first quarter and there remains considerable uncertainty regarding how markets will adjust as these purchases are wound down.

The Desk’s survey of market participants’ expectations for the sequencing of steps when the Federal Reserve begins to tighten policy indicates that markets do not expect the Federal Reserve to sell any securities during the first two quarters of this year. Indeed, about a third of those surveyed do not anticipate any asset sales by the Federal Reserve over the next several years. The remainder generally expect only modest amounts of such sales, with sales starting well after policy rates are increased. Thus, a statement like this variant of alternative B, coming at this meeting while the LSAPs are still continuing, could well cause a substantial shift in investors’ expectations about the anticipated trajectory of the Federal Reserve’s securities holdings. As a result, yields on agency MBS, agency debt, and Treasury securities could increase significantly, and the levels of actual and implied volatility in these markets would also tend to move up.

If the Committee anticipates that the economic recovery will be sustained and is concerned about the possible effects of the very large Federal Reserve balance sheet

on inflation expectations or on its ability to execute a smooth, effective, and timely exit from the current degree of policy accommodation, it might want to begin laying the groundwork for tighter policy by adopting alternative C, on page 4. In providing the rationale for this step, the first paragraph of the statement would express greater confidence about the outlook than in alternative B, noting that economic activity is increasing at a solid rate and that the labor market is stabilizing. The sentence listing the factors that are restraining household spending would be dropped, and the final sentence of the paragraph would indicate that the Committee believes a sustainable economic recovery is now under way. The second paragraph would note that inflation has been somewhat elevated as a result of higher energy prices and would condition the Committee's expectation that inflation will remain at levels consistent with price stability on appropriate monetary policy adjustments rather than on the substantial resource slack cited as an important factor under alternative B. Although the Committee would retain for now its target range of 0 to ¼ percent for the federal funds rate, it would indicate an expectation that economic conditions are likely to warrant *low* levels of the federal funds rate for *some time*, rather than *exceptionally low* levels for an *extended period*. With the LSAPs nearing completion, alternative C does not contemplate any reductions in the total amounts of securities to be purchased, but the final sentence of the third paragraph would indicate that the Committee will be evaluating the size and composition of its securities *holdings*, which would provide it with the flexibility to engage in asset sales relatively soon if such sales were seen as appropriate. This wording might also be seen as helpful if the Committee wanted to signal that it was disinclined toward any securities purchases beyond those already planned.

A statement along the lines of alternative C would come as a considerable surprise to market participants. The adjustment to the forward guidance would be read as suggesting that the Committee was preparing to begin firming its policy stance relatively soon and that the adjustment could be more rapid than had been anticipated. As a result, market participants would likely mark up fairly sharply their expected path for the federal funds rate, which would boost short- and intermediate-term interest rates significantly. And with the reference to possible adjustments to the size and composition of the Federal Reserve's holdings of securities evidently putting asset sales on the table, term premiums would move higher as well, boosting longer-term yields, perhaps substantially. Reflecting the change in interest rates and resulting revisions to the outlook, stock prices would likely drop, and the foreign exchange value of the dollar could increase.

Under all three alternatives, the final paragraph of the statement would provide an update on plans to wind down the liquidity and lending programs the Federal Reserve put in place to address the financial crisis. The paragraph would note that, as previously announced, the Federal Reserve will be closing the asset-backed commercial paper money market mutual fund liquidity facility, the commercial paper funding facility, the primary dealer credit facility, and the term securities lending facility on February 1. The statement would also note that the temporary liquidity swap arrangements with foreign central banks will expire on the same day. The

statement will provide more detail than in December regarding the term auction facility, indicating that the February 8 auction will be for \$50 billion of twenty-eight-day credit, that the March 8 auction is expected to be for \$25 billion of twenty-eight-day credit, and that the Federal Reserve will consider whether to conduct further auctions beyond that date. Alternatively, your discussion yesterday suggested that there might be support for a firmer statement on the TAF—perhaps “The Federal Reserve is in the process of winding down its term auction facility: \$50 billion in twenty-eight-day credit will be offered on February 8, and \$25 billion in twenty-eight-day credit will be offered at the final auction on March 8.” The statement would then reiterate the current schedule for winding down the term asset-backed securities loan facility. The paragraph would conclude by indicating that the Federal Reserve is prepared to modify these plans if necessary to support financial stability and economic growth.

As Brian Sack noted yesterday, the staff recommends adding a sentence to the directives for alternatives B and C, shown on page 8 in the package, indicating that “The Committee directs the Desk to engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS purchases that are to be conducted through the end of the first quarter as directed above.” Dollar roll transactions have proven helpful to the Desk in settling MBS purchases, and including the recommended sentence in the directives for the next several meetings would allow the Desk to conduct such transactions as needed to assist in the settlement of agency MBS purchases executed through the end of March. That completes my remarks. We would be happy to take your questions.

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

MR. WARSH. Thanks, Mr. Chairman. Bill, one question on paragraph 2, the inflation paragraph. What do you think is the difference in the language that is proposed in alternative B, “inflation is likely to be subdued,” versus the language I think we used for a while “expects,” “inflation is expected to be subdued”? Is that supposed to be revealing a little less certainty, or is that thought to be consistent?

MR. ENGLISH. I think it was intended to pick up the thought that the headline inflation numbers had been a little higher because of higher energy prices. In December we said “expects that inflation will remain subdued.” So we are taking out the “remain” thought and saying that inflation is likely to be subdued, in some sense making it a little more forward looking.

MR. WARSH. Thank you.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I guess I get to go first and throw myself to the bears here.

CHAIRMAN BERNANKE. Hold on. Do you have a question?

MR. PLOSSER. No, no, no. I thought we were starting the go-round.

CHAIRMAN BERNANKE. Not quite yet.

MR. PLOSSER. Oh, I am sorry.

CHAIRMAN BERNANKE. Anybody else have a question? Okay. If not, now you get to start. [Laughter]

MR. PLOSSER. Thank you, Mr. Chairman. The economic recovery, I believe, is gaining some momentum. I think the Committee has to prepare itself and the public for the possibility that we will need to begin to reduce the size of our balance sheet and may need to commence this activity sooner than suggested by the Greenbook. I would like to see us begin to modify our language in a way that will help rather than hinder our ability to take the proper actions at the proper time.

In terms of this policy meeting, I can support alternative B. In particular, I don't see how at this juncture we can do anything but follow through on our announced purchases. However, I do think we could consider speeding them up so that we complete them prior to March 31 and not necessarily wait until the end of the quarter. Paragraph 1 of alternative B is fine with me. I have no objections to that.

In paragraph 3, I favor the alternative variant that substitutes the word "holdings" for "purchases" because I think, again, this is one of those small steps toward signaling our intention

to exit. I would also favor changing our forward guidance from “extended period” to “some time” for the same reason. I believe it’s important that we extract ourselves from housing finance and adopt an operating mechanism to protect our independence and raise our ability to say “no” to efforts in the political process to use our balance sheet for fiscal policy. I like the language generally in paragraph 4, which reiterates that many of the special facilities will be closed on February 1. This is a significant step toward normalization of policy, and I favor that.

Now, as I have suggested in several earlier meetings, I have tended to favor alternative C’s inflation paragraph because it emphasizes the dependence of inflation on the stability of long-term expectations and on the policy adjustments that will be taken to keep inflation consistent with price stability. I very much like the idea that it is monetary policy actions and not structural features of the economy that will influence inflation over the longer run. Given the concern that a number of people have expressed around this table today about the potential risk for increased medium- to longer-term inflation, keeping those expectations anchored is very important, and this change in language would help signal to the markets and to the public our commitment to deliver on price stability and may put at rest, or at least help put to rest, some of those fears about outbreaks of inflation.

On Bill’s reference to energy prices with regard to paragraph 2, I am comfortable with deleting the reference to energy prices in part because I see singling out one set of relative prices for mention and not others can be problematic over time. So I would be comfortable just eliminating that.

Finally, I just want to thank the staff again yesterday for their outstanding work on exit strategies. I thought yesterday’s discussion was extraordinarily fruitful and interesting. I learned a lot, and I hope we can continue those kinds of discussion going forward. I think we must

continue to address the issue and evaluate how our various tools fit together, and I hope we will soon come to a decision about the type of implementation framework, floor versus corridor, and the policy rate, funds rate, another market rate, or administered rate like the IOER rate, or where we are ultimately headed in that regard. I think doing so will help us think more carefully about the nature of and the way we do our exit strategy, and it will help us address the size and shape of adjusting our balance sheet as we go forward if we know where we want to end up.

As I said yesterday, my own preference is that we aim for implementing policy with a corridor system, where the market rate such as the funds rate is our operating target, and that we have a much smaller balance sheet that contains Treasuries only and is weighted toward short-term Treasuries at that. I think this will give us the ability to exercise our independent control of our balance sheet and enhance our independence with respect to operating and setting monetary policy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. I also support alternative B. With unemployment likely to remain stubbornly high in the United States and with many of our trading partners also experiencing weak labor markets, the risk of political or economic misjudgments that could sap the strength from the current recovery remains high. This makes it particularly important that our exit strategy does not inadvertently cause markets to tighten too soon in anticipation of our actions, particularly as we are likely to miss both elements of our dual mandate by a sizable margin throughout this year.

In terms of language, I strongly prefer the language in paragraph 3 that the Committee will continue to evaluate its purchases rather than its holdings of securities, for two reasons. First, we have not completed our purchases, and I think talking about holdings while we are still

continuing purchases through the end of March would be confusing. So I think we should complete the purchase program before we start talking about holdings. Second, I think sales should be the last thing that we do, as I said yesterday, so I would be doing many things before I would be thinking about sales. That would include removing the “extended period” language, draining reserves, increasing the interest rate on excess reserves before we start asset sales. I think we are a long way away from signaling to the market that we might be doing asset sales. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I favor alternative B. As I’ve said in the past, I’d be very surprised if we need to start tightening policy this year. So “extended period” still seems appropriate to me. The economy is clearly operating far below maximum sustainable employment, and inflation is undesirably low. The Bluebook policy simulation shows that it will be well into 2011 before policy would optimally be tightened.

On the issue in alternative B of whether to refer to securities holdings or purchases, my strong preference, too, is for purchases. A switch to holdings now, while we are still purchasing securities, would certainly suggest that we are contemplating sales, and I consider that quite premature. As I indicated yesterday, I could eventually envision a program of gradual sales, but that would occur once the recovery is well established and we are finally ready to start tightening policy.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. I support alternative B. Unemployment remains high, and inflation and expected inflation both remain subdued. In my judgment it’s too early to remove the “extended period” language as is done in alternative C. At

the same time, I do not believe the benefits and further expansion of the LSAPs outweigh the costs, and so I do not support alternative A.

I support the use of the term “holdings” rather than “purchases” in alternative B. I think this is consistent with the hope that the Chairman offered in his remarks at the end of the economic go-round for a gradual and steady normalization. We want to be careful to deliver information smoothly about our plans as opposed to in lumps, and I think switching to the word “holdings” is beneficial along those lines.

Right now we have three different tools at our disposal for thinking about draining reserves or managing reserves—the term deposit facility, reverse repos, and sales. The first two are relatively untested. I think we feel relatively confident that the price effects will be relatively small on those. But there are still some doubts about whether or not they will work logistically to the scale envisioned, and the Bluebook acknowledges as much. In terms of sales, we know how to do that, but there are concerns about what the price effects will be, and I will talk about that momentarily.

Yesterday I was heartened in some ways, but I became concerned about the divide between the Committee’s attitudes toward the use of “sales” and the beliefs of market participants about those attitudes. Yesterday we heard that many on the Committee are willing to consider the use of sales of MBS as a tool of balance sheet normalization. There is certainly heterogeneity about what the timing of that is going to be, but I think we definitely heard that there was a desire to get in the long run, which I took to mean before 2037, to an all-Treasury balance sheet. In contrast, the New York Fed survey shows that market participants significantly discount this possibility. I think our goal for the use of those surveys is to tell us what market participants believe, and the job of our communication is to try to shape those beliefs.

So we need to use language to shift those beliefs. I think “holdings” represents a gentle way to start to move in that direction. One thing I should say, which is sort of obvious, is that “holdings” is a very flexible kind of language. It is designed to tell people only what our tools are, not to tell them what we’re going to do. In particular, it doesn’t preclude the possibility of further purchases if we do see deterioration in economic conditions.

Now the main concern that the Bluebook raises about including the term “holdings” is that it could lead to significant increases in agency MBS yields and mortgage rates. So let me talk a little about that. I want to begin with a point that I raised earlier in the economic go-round, which is that financial markets are functioning much better than they did in late 2008, early 2009. I think the problem that creates is that we have big purchases that took place in that period. It’s very tempting to use those data as a source of information about what the price impact of sales is going to be. But markets were very different at that point, and so it seems very problematic to use that kind of experience to infer the likely price impact of our sales when markets are functioning as well as they are now. So to get a good measure of the price impact of sales today, we need to use pre-crisis data or data from the latter part of 2009. I am aware of two such studies, both done by the Markets Group at the New York Fed. One is by Matt Raskin and Clara Sheets. They used an event study methodology to document that, after March 2009, each additional purchase of \$100 billion of agency MBS led to a 3 basis point fall in yields. According to this estimate, an announcement that we were trying to sell \$1 trillion of agency MBS—presumably over an extended period of time, not in a week—which would lead to a 30 basis point increase in yields.

In contrast, they also estimated the price impact before March 2009, between November ’08 and March ’09, and the price impact was twice as large, consistent with what I’m saying that

markets were not functioning well in that earlier period whereas they're functioning better now. Of course, I will add that actually the period they study that I have mentioned, March '09 to November '09, includes a part of the period when you might think that markets were not functioning that well, so that even that might be an overestimate.

There's another study, which I won't go into so much detail about, by Kimbrough and Madar from the Markets Group. They estimated an MBS pricing model using pre-2007 data, and they estimated that our current \$1.1 trillion of MBS are depressing MBS yields about 20 basis points. Neither of these studies is perfect, as the authors are quick to admit, and I am not reporting standard errors because I don't think there were standard errors reported in those papers. I'm sure they are huge. It's comforting that they arrive at roughly the same estimate.

These yield increases strike me as modest, but there are significant overestimates of the impact of introducing the word "holdings" into the statement. The estimated increase I am referring to is a measure of the impact of a wholly unexpected announcement that we will sell our entire portfolio of MBS. The sales are not wholly unexpected. It is clear from the New York Fed survey that some market participants do put some probability on this possibility. And I think that the word "holdings" does not serve to indicate that people were increasing the probability of selling all of our portfolio to 1 but rather increasing the probability of some sales above 0. In fact, as I indicated, I would recommend that we use a reverse tapering approach in which we start very gradually over a rather extended period.

So to sum up, using the word "holdings" instead of "purchases" gives us more flexibility to manage excess reserves effectively and to respond to changes in economic conditions. I think the best possible estimates indicate that the impact of such a change in wording is likely to be

small on MBS yields, and so I support alternative B with the word “holdings.” Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Just a general comment, Mr. Chairman, and then a comment on the alternatives. I noted that in your summary you did point out that the dynamics can work in the upside direction as well, and I just want to make a simple comment. I want to be very careful. I do think we need to be appropriately patient but not lulled into inertia in terms of our concerns about the downside. I sense that we are not at risk of doing so, but I do sense that there is some inertia at the table, and it concerns me.

That said, while I can see an argument for alternative C, especially against the extensive disposition given by Narayana on price impact in a more robust market than in a market that was bust when we bought these things, I am in favor of alternative B. I would make some suggested changes. First of all, and following up on both Governor Duke and Bill English’s excellent summary at the beginning, I don’t think in paragraph 1 it is correct to say, well, “bank lending continues to contract.” I think it is better to say “remains tight.” My alternative B says “while bank lending continues to contract.” Don, is that what you have?

MR. KOHN. I didn’t hear what you said.

MR. FISHER. I would suggest instead of “continues to contract” we say “remains tight.” It is not contracting from what I understand, and that was a suggestion made by —

CHAIRMAN BERNANKE. I think it is contracting.

MR. FISHER. Am I reading the wrong copy?

MR. TARULLO. You have the right words, but the wrong data. [Laughter]

MR. FISHER. The recent loan survey indicates to me that it is not necessarily continuing to contract, but it does remain tight. But if I am wrong, I will withdraw the brilliant suggestion I just made.

With regard to energy prices, I agree with President Plosser and the suggestion made by Bill [English] that I do not think it is necessary to have that in there. First of all, they may be temporary, and second, it excludes other prices. I agree with both President Plosser and Narayana on the use of the word “holdings.” I take to the suggestion in paragraph 4 that we consider mentioning that we expect to offer \$25 billion in twenty-eight-day credit at the final auction on March 8.

I want to come back to one point that I’ve raised before. We had some discussion about it last time, and actually in the last meeting President Rosengren made the excellent point that we consider the treatment of the spread on primary credit and the use of word “extended period.” We have since had much more discussion about that. We have agreed or at least some of us suggested yesterday that you might use your testimony on February 10, your subsequent testimony, and our investigation of our own boards to move toward normalizing the primary credit spread. But still, like a broken record, I am uncomfortable with the words “extended period,” and I would like to make a suggestion, which is that we change that sentence after the phrase “stable inflation expectations” to read as follows: “are likely to continue to warrant exceptionally low levels of the federal funds rate.” Period. It may be just editorializing, but as I said in the last meeting, I am a broken record on that subject, and I want to continue my record of being a broken record on that subject. [Laughter] Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. President Fisher, I did not quite understand what you said about the TAF auction. Did you like the language here, or did you want the change that Bill made?

MR. FISHER. I thought Bill's comment was a possible suggestion, that we would say \$25 billion in twenty-eight-day credit on the final auction on March 8. Is that correct, Bill, as one alternative? I would be in favor of that.

CHAIRMAN BERNANKE. Okay. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I favor alternative B. I think, not surprisingly, it meets your criterion of a smooth and predictable move toward normalization here. I think our watchwords at this meeting ought to be “no surprises” unless, given all the other things that are going on—fiscal policy, regulatory, et cetera—there is a really good reason to surprise and unless the current language does not describe what we are planning on doing. Then we need to change it. But I think there ought to be a pretty high hurdle at this point. I am satisfied with the path we're on, and therefore, I would pretty much retain the language—certainly the “extended period” language, especially when we are going to adjust the discount rate spread. I think that, if we changed the “extended period” language and then did that, I don't care how many paragraphs you had in your testimony, [laughter] we would create an expectation that the discount rate was the first step. So I think it is absolutely essential that we retain “extended period” if we are going to change the discount rate. And like some others around the table, I see both output and inflation as likely to remain below our objectives for quite some time, an extended period and then some, perhaps for a number of years.

I think what we have heard at the meeting is that there is more confidence that the economy is growing and that growth could well be at least somewhat above potential. But we

are starting from a very low level of production by almost any measure, and we can adjust the NAIRU a lot and still have a very substantial output gap. We need a lot of growth in order to do that. We are not on an optimal path for monetary policy. I think that adjusting up from what is already a sub-optimal path at this point would be problematic.

I agree with the concern about the movement of inflation expectations. I share that concern. I am hopeful that as headline CPI inflation moves down toward core inflation (I think it will with petroleum prices having dropped); as you, Mr. Chairman, become more explicit in your testimony about our exit strategy; and as we do more testing of tools and people become more confident that we are thinking and working on our exit strategies, it will help on the inflation expectations side. So I very strongly want to retain “extended period” this time.

On the purchases–holdings question, I am strongly in favor of purchases. At some point we might want to move to holdings and hold out the possibility that the amount will decline. I mean we’re talking about redemptions. So at that point, “holdings,” if it is properly explained and foreshadowed by the Chairman, might work. But I think it’s way premature to move at this time. We are still purchasing. The way hasn’t been cleared to change the language. I think changing from purchases to holdings would allow the possibility of sales, and doing it at this point would be disruptive and confusing.

We do need to move back to an all-Treasury portfolio, but I would prefer to do it in a way that didn’t disrupt the economy and impede our ability to hit our objectives—price stability and maximum employment. On “energy prices,” I would delete those words. I think that’s right. On the TAF, I have a slight preference for retaining the current language because it retains a little optionality. We’re winding down a lot of things. A lot is changing in our liquidity facilities. I

prefer to see what happens in March, but I don't feel strongly about that point. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I will make just a few brief comments. I support alternative B with certain changes. One caveat would be this holdings issue. I would support substituting "holdings" for "purchases." I think it is a more accurate description of where we are in the cycle here. We are almost done with our purchases, and to have the statement say that we are continuing to evaluate our purchases makes it sound as though maybe we would extend our purchases further, or something like that, which I don't think reflects the intention of the Committee here. We do intend to end this program, and we do intend to then evaluate our holdings. So I think that that would be a better way to go.

As I have in previous meetings, I support paragraph 2 from alternative C, as President Plosser did, which gives more-direct control over medium-term inflation as a result of what the Committee does as opposed to external factors, and that is why I like that type of statement better.

In the fourth paragraph, on the question of the TAF, I would support including the language "twenty-eight-day credit at the final auction on March 8," and delete the rest of the sentence, because that also seems to reflect the sentiment of the Committee. And that would tie up our liquidity programs all more or less at the same time, which I think is helpful to us. We are saying that financial conditions have improved markedly and therefore we don't need the special programs that we had before, although of course we stand prepared, if turmoil should return, to implement those programs again in the future.

Yesterday's discussion suggested consensus on returning to an all-Treasuries balance sheet at some point. I think there are definitely issues around the table about how fast and when to start on that project. There was a lot of discussion also about asset sales at some point to help with this process, and I garnered a sense from many members—and I think—that redemptions alone are just going to be too slow. It is going to leave too many MBS on our balance sheet for too long a period. So I think we should do more in future statements to reflect the outcome of that discussion, and that is something we should work on at the next meeting and going forward, because that needs to be communicated accurately to financial markets.

I also think there is more state-contingency in our plans around the table than what is perceived in financial markets, and I think we could do more to communicate that as well. I do think that we could achieve something closer to optimum monetary policy by adjusting our balance sheet program in response to economic developments. Some people expressed the concern that we would be adjusting all the time in response to maybe what some would think of as small developments with respect to the economy. But when it's interest rate policy, we make a judgment at every meeting about what direction we want to go. And we do try to give guidance to the markets about our future direction with respect to interest rate policy. I see no reason that we can't do something similar with balance sheet policy. We have a baseline in place. We project out a baseline. We communicate that to markets, but we adjust it going forward, which I think is what actually most people have in mind, except that most people seem to want to have a high bar with respect to any adjustments or any changes.

For you nerds here, I am not quite sure why our optimal balance sheet policy is analogous to an sS-type inventory control policy. I mean, why not adjust small amounts? We do small word changes and so on at each meeting. I don't see why policy couldn't be tweaked, stretched

out, moved up, faster purchases or faster sales, depending on the situation. Sticking to a mechanistic approach to balance sheet adjustment is okay, but I also think that it puts a lot of pressure on the expected date of the return to traditional interest rate targeting, so the main way that we would have impact on policy over the next year or year and a half is that we would start talking about that developments were positive in the intermeeting period and, therefore, probabilistically speaking, we would be moving up the date of the return to traditional interest rate targeting. Or if the data were bad, then, probabilistically speaking, we would be moving back the date of the first move.

I am not quite sure what impact that really has, and I think that it is not that clear a way to run policy during the period over the next eighteen months or so before whenever we do get to the date when we want to raise rates. That, in my view, is not the best way to conduct policy. I don't think it's particularly clear. And I think going the mechanistic route undermines our claim that quantitative easing has been effective. If it has been effective, then it should also be effective as a tool going forward, and it's not clear to me why the Committee wants to forgo the use of that tool in this particular circumstance. Thank you.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. Part of the consensus that I have heard here today is that economic and financial conditions have improved steadily in recent months and that this is obviously due in part to some very stimulative monetary policy. Although the convictions vary around this table, we are all projecting improved economic growth. And, yes, unemployment is too high. Part of that is structural. And if we wait until it is low enough to satisfy everyone, we will delay actions that I think are necessary. In my view, President Bullard, uncertainty is always above average in a bust and always below average in a boom. [Laughter]

That is the problem. So I think we need to think about that, because in this period, uncertainty impedes actions that I think are necessary. We have had language of reassurance regarding low rates for nearly a year, even though circumstances are considerably different than they were a year ago. My point is that we need to turn more deliberately to more-aggressive thinking about our long-run issues.

There are three risks that I am concerned about. The first, and perhaps most important, is a commitment to near-zero rates for an extended period. It lays the new foundations as the economy recovers for future financial imbalances, and I think this is where we are in danger. In my experience, artificially low rates for an extended period invite resource misallocations. No matter the upside data, we will not reverse policy significantly or quickly. It's just our experience. As this occurs, and we use this "extended period" language, we have handcuffed ourselves for any action for at least six to nine months it would seem. Maybe not.

Another risk is that we are seeing and will experience significant borrowing needs of the federal government. This will, as our economy continues to improve, put upward pressure on real rates, and therefore we are in this handcuffed position.

Third, as noted in the Bluebook, the combination of near-zero interest rates with the size of our balance sheet will cause long-term inflation expectations to systematically, over time, become less well anchored, I guess I'll say. Thus, we need to change the forward guidance and cease our commitment to "extended period" language. We should allow ourselves the flexibility to begin to raise rates modestly, not just let liquidity facilities rescind as the economy improves, assuming that it does continue to improve, and, if it doesn't, then we don't move. The Bluebook recognizes part of this in terms of growth protection and the fact that we could have and should have higher rates. And I would point out that an effort to move the fed funds rate to $\frac{1}{2}$ or

1 percent is, if anything, accommodative. It's not tight policy, and we should think about it, because the longer we wait, the more the resource allocation issues come up.

Now, on the market, I certainly realize that changing the word "extended" may rattle the market, perhaps importantly, perhaps temporarily. It depends on how we explain it and how we go forward. But if we are going to remain handcuffed and we are going to remain committed to the markets' expectations that they define, then we are going to have future problems—maybe not next year in this economy but in a future period as we have had in the past. Therefore, I would very much prefer alternative C as we move forward. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I support the language and the policy prescription in alternative B. I also support maintaining the wording "purchases of securities" in paragraph 3, as opposed to "holdings." Governor Kohn made the simple statement, "We are still purchasing," and it seems to me that we change that language when we are no longer purchasing. I will point out that I don't believe the last sentence in that paragraph is a stand-alone sentence; I think it is connected to the previous sentence. It says, "We are slowing the pace of purchases." So I see a consistency between those two. I also think that shifting it would endanger the rate curve accommodation and the stability that supports the recovery. And since the existing word "purchases" seems to be well understood by the market and conforms to my preferred policy path, I prefer leaving it in place. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. First, a word or two about timing. As I said yesterday, I think it would be a mistake to take the centerpoint, the mean of our expected date of tightening, and plan a program around it. I think we need to plan for the possibility of different

dates at which we would want to raise our policy rate, either the IOER rate or the federal funds rate, whatever it is.

As I alluded to yesterday, I think that, if we are honest about it, we will admit that, if we aggregated all our uncertainty about when that most appropriate date would be, there would be a substantial mass this year. Just take for a minute the Greenbook and imagine that it literally comes true this year—now I know Mr. Stockton will tell me that has virtually no chance of happening.

MR. STOCKTON. Probability zero. [Laughter]

MR. LACKER. Probability zero. I was going to say virtually zero, but there is as much mass on either side of that, obviously.

You know, at the fourth quarter this year, job growth would have picked up quite smartly in the second half of the year. It would have been notably more rapid than at the beginning of the previous recovery. Real consumer spending would have been solid, growing around 3 percent at the end of the year. Granted, the level of unemployment would be relatively high then. But by the same token, the current level of real interest rates would be relatively low then as well. If you look at the Bluebook simulations, they seem to imply a substantial probability of raising rates by year-end.

This is the staff's model. The staff, as we learned before, is a little more on the side of a later tightening than the Committee is. If you look at the confidence intervals, they seem to imply a 15 percent chance that we will raise rates by June of this year, and my own personal ocular interpolation indicates about a 30 percent chance, perhaps more, that we will raise rates by the end of the year. This is in the Bluebook.

MR. KOCHERLAKOTA. It must be true then. [Laughter]

MR. LACKER. It must be true then. Probability zero. And obviously markets put an even higher probability on it. So I think we need to make a plan that would accommodate something that has a 30 percent chance of being something we want to do. And that is why, as I said, I favor—and this is a point that President Bullard made—a fairly aggressive approach of reducing reserves this year.

As I said yesterday also, I favor Treasuries-only because of the political entanglement issues but also because it's likely to yield healthier growth to take out the tilt toward housing. Then, if you think about any given path of reserve drain, using term deposit facilities or reverse RPs, as opposed to just asset sales, means continuing with more tilt toward housing than we otherwise would. So for those reasons I am in the Treasury-only camp and the sales-only camp. I agree with President Kocherlakota that the U.S. financial market should be able to absorb substantial sales. In fact, I think they could absorb substantially more than he suggests.

About divisibility, I think you're right, Mr. Chairman, to suggest that we move slowly toward an exit, but there is a certain limit on the divisibility of our actions and statements. A couple of meetings ago we debated two words about our purchase program. We have now advanced to debating one word about our purchase program, but that's the limit. We can't debate less than a word.

MR. PLOSSER. Be careful what you wish for. [Laughter]

MR. LACKER. But there is a tension with Governor Kohn's suggestion that we should aspire to no surprises because you have to look at this a few meetings at a time. I mean, no surprises now sort of builds up pressure for a big surprise, and maybe a lot of little surprises are better than no surprises for a while and a big surprise.

I think we should recognize that, no matter how we decide to play our hand this year, there is a substantial chance of significant moves in financial-asset prices around the times of our announcements or communications, even if those occur via leaking something or other to Larry Meyer, which is not the right way to do this. There is going to be a point at which we are viewed as saying “boo,” and when that happens, there is likely to be a market break. I don’t think that’s avoidable. We can minimize that, and we can try for clarity and try to avoid spurious movements in markets’ views, but I think we are just going to have to see that as something that is going to come with the territory. I don’t think it needs to be something that dissuades us. I don’t think we should be afraid of every possible discontinuity in market prices.

So as we go forward—let me just add one final word. This term “market disruption,” I am just going to repeat, as dispassionately as I can, an observation I made before that the mere observation that prices have changed a lot and quantities have changed a lot, perhaps to zero, has by itself absolutely nothing to say about the advisability of policy intervention or any particular policy consideration. It is something that I know everyone understands around here, but it is worth emphasizing because I don’t want to say that there could be market disruption if we do X. To me, it says very little. I will say as well is that I am quite open to a careful, reasoned account of how regulatory constraints and market imperfections interact to yield some policy implications that aren’t trivial. So this isn’t an ideological point of view. It is just that I would like to see, rather than waving the red flag of the phrase “market disruptions,” some concrete account of what’s going on in the market that makes some policy consideration of the potential for market disruption warranted. And I know the staff is capable of such accounts.

So I favor B. I like “holdings” because it seems like the smallest subdivision of movement of our message. I like the final auction idea. I, too, have a leaning toward alternative

C, paragraph 2, but the phrase “monetary policy adjustments” in there in the current context is perhaps too strong a signal of raising rates imminently. So I would back away from that and accept what is in alternative B, paragraph 2, right now. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I support alternative B, but I would like to mention that, in his commentary, Bill English used the phrase “Committee members might be dissatisfied with the outlook” to say that we might prefer alternative A. I think that almost everybody is dissatisfied with the outlook, and this was voiced by Governor Kohn and President Bullard in commentary about how this obviously isn’t the optimal monetary policy path. But I’ll pause on that and just say that I am not quite sure what optimal is. It’s becoming increasingly apparent to me that we never had a chance to keep the unemployment rate below 10 percent. The options that we considered in March—it would be nice to have a “lessons learned” session at the appropriate time—there wasn’t capacity in the MBS purchases apparently. We are finding that out now, and so I am not quite sure how we would have tried to accomplish a better outcome. But that said, this is what we have.

Today, I think the “extended period” language still seems correct. When I think about this—and I will even say this when people push me—I think it means six months. That is three to four meetings. From the March meeting plus six months takes us to September 2010 at the earliest that there would be a tightening. All else being equal, I just don’t see that. So I am comfortable with “extended period.” The TIPS five-year, five-year-forward uptick is noteworthy, but the fundamentals to me still strongly suggest that inflation is going to be below our own guidelines for the next three years. So, bottom line, I think any tightening prior to September 2010 is unlikely, and it is probably much longer.

Now, I do think that we need to map out our strategy for any reserve draining, the lead times, and that might be helpful for building a consensus, as I was talking about before, but it's not necessary today. On the holdings–purchases language, I have a preference for “purchases,” not to change things too much. I don't think we get that much out of it. And on the TAF issue, it's probably a coin flip. I think the optionality argument wins. I don't think we have anything to prove with pre-commitment today, but it could go either way. Thank you.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I support alternative B. My outlook hasn't changed very much since our last meeting, and the uncertainty around my outlook remains high. So I support keeping policy unchanged at this time. In paragraph 2, I agree that we should eliminate the reference to energy prices. In paragraph 3, I don't think we should change the language from “purchases” to “holdings” until we have completed our purchases. I concur with the staff's assessment that this change in language could lead market participants to anticipate sales even before we are ready to communicate our plans for unwinding our balance sheet. And in paragraph 4, I have a slight preference for leaving the language on TAF as it is currently written. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. Though to much derision, I recall someone in Washington saying that you go to war with the army you've got, not the army you want. Maybe the same is true of statements. [Laughter] So that should maybe govern a bit of our thinking.

After lecturing in a prior round about policy certainty, I think it would be ill-timed for us to drop in ideas on which we may well have begun a rigorous debate but not a debate that we have sufficiently socialized. And that theory of the case I think will underscore some of my

comments. I think the point that Don was making earlier wasn't that we are stuck with policy inertia but that we are stuck with policies that we have been teaching markets about and we should change our statement as facts change and our judgments change, but we shouldn't be perceived to be wandering too far from what they have been led to believe.

On the inflation paragraph, I know people are pretty keen now to drop that first sentence, and I think with understandable reasons. It might not be popular. I would actually tend to broaden it and say, "Some commodity prices have risen in recent months," and then end the paragraph just as we have it. That is, an acknowledgement of facts that I believe have been the case—Nathan can correct me on that—but show that we're not overly troubled by it. It is just along the lines of what we were trying to say on energy prices, but the facts changed on us on recent trading days. So that would be one suggestion, Mr. Chairman.

On the purchases holdings question, I am as uncomfortable with our mortgage-backed securities holdings, purchases, whatever they're called, as anybody in the room. I think the minutes are likely to do a pretty good job of starting to socialize the debate that we had yesterday. I think changing that word at a time like this is likely to be saying both too little and too much, and I would rather it come to the fore through minutes and through discussions that are held more publicly. So I think "purchases," because I think it's factually accurate now, might be relevant, and at our next meeting we can get into whether "holdings" or "portfolio" might better reference what we are intending to do.

With respect to the TAF, I think, again, that facts have continued to evolve in a way that we want, and so I like Bill English's proposed suggestion, "The amounts provided under the TAF are in the process of winding down," and then we go through a recitation of the dates. I think that is accurate, true. I would be fine saying, "And it is over" as a final statement, and that

should be the last auction. I don't think that is so significant, but I would modify it, as Bill did, "It is in the process of winding down," which I think is one notch higher than what we had said in the earlier statement.

On the "extended period" language, sort of using the Rumsfeld reference, I would say changing that now would be nuclear. It would be perceived to be not conventional arms, but a clear signal. I suspect that conventional arms might be more useful, and the conventional arms are through the unwinding of these facilities and through a broader discussion outside the statement about various views on timing that we have. I would be more troubled by "extended period" if markets' expectations of policy looked more like the Japan curve than the curve for the United States, the European Central Bank, and the Bank of England. So I don't think markets have misinterpreted that to be a permanent period at all. I think Charlie's reference to six months seems backed up by Eurodollar futures and other market prices. So I don't think it seems overly constraining, and I would rather work toward that objective than remove those words at present.

One final word, Mr. Chairman, on what has gotten some attention the last two days on the survey question from New York to economists and others about what they think we're going to do. I don't think this is a problem with the authors of the survey, but I think what we really did was to give a bunch of people a take-home test, and it looks as though some of them passed and some of them failed. What we are really interested in is, What do you think we should do? What we are not as interested in, it strikes me, is, Based on the musings you have heard from people around the table, how well did you follow that? [Laughter] So I don't think that the survey should be overly read, and I wouldn't take that to mean that markets would be deeply disturbed if we went with the reverse tapering. I think that survey might be proving a lot of

things, but it is not antithetical to the strategy that we might be converging on slowly after this meeting. Thank you.

CHAIRMAN BERNANKE. Thank you. On the facts, Nathan, the commodity prices, there has been a lot of movement, right? There was a big run-up from October until December. But I think recently a lot of that has been reversed. It's not very clear.

MR. SHEETS. There has been some reversal. Nevertheless, our broad nonfuel commodity-price index is up roughly 15 percent since early October, with most of those gains concentrated in metals and agricultural raw materials. Food has been very bouncy. We have had a huge harvest, and there is a lot of downward pressure on prices there; also, some idiosyncratic stuff with beverage prices. But "some commodity prices" would be consistent with the facts.

CHAIRMAN BERNANKE. Not to push this too far, but those are not value weighted, or those are just sort of equally weighted indexes, right? And energy in particular I think is sort of back where it was in October.

MR. SHEETS. Right. The index that I was making reference to—we take an IMF index, and we reweight it based on U.S. consumption.

CHAIRMAN BERNANKE. All right. Thanks. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I also am in favor of alternative B with the "purchases" rather than the "holdings" language. Once we have completed our purchases, I do think it's going to be important to communicate our intention regarding our holdings, but I think changing the language now would be confusing. And I prefer the final auction alternative in paragraph 4. I think that will make our explanation of changes to primary credit easier to explain. Thank you.

CHAIRMAN BERNANKE. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. As I intimated yesterday, I see our exit strategy as composed of three phases, at least two of which overlap. One is ending the special liquidity programs that we have. Two is preparing, and including good communication of, a strategy for tightening. And the third is the tightening itself. And I do think there's an important distinction between two and three.

I am bemused, I must say, at the certainty of some of the people around the table as to the robustness and pace of a recovery, particularly given a lot of the uncertainties that the Chairman noted in his summation. My view, again, as expressed yesterday, is a concern that a signaling of tightening and a response in markets could unnecessarily choke off what is still an uneven and somewhat fragile recovery. At the same time, my inclination, which has only been strengthened during this FOMC meeting, is that when the time for tightening comes, it is probably going to have to be multi-tool and it may well have to be pretty muscular in order to achieve the efficacy that we are going to be looking for.

The public and markets are looking much more at changes in the language that we have than in how new language might be read on its own in isolation. So that makes me, like a number of others of you, disinclined toward any changes that might appear to be signaling a moving from phase 2 to phase 3. So I guess I'm not looking to indicate that we are gradually moving toward the exit if that means tightening. And it's for that reason that I endorsed Charlie Plosser's idea yesterday of just ending the liquidity programs as quickly as we can. Let's say we have done it, and we have completed that phase.

For all of these reasons, I favor alternative B, both the action and most of the language. I favor inclusion of the language that Bill English suggested on the TAF because I think that it pursues Charlie's goal of wrapping all of this up. But I oppose the substitution of "holdings" for

“purchases,” not because it’s not potentially a useful way to begin changing the language. I think Narayana proposes it with the intention of ongoing neutrality. I don’t think that’s the way it’s going to be read by markets right now. They are just going to invest it with way more significance than most of us at least would intend. And on the inflation language, I defer to you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. I favor alternative B. I think it is very premature to foreshadow tightening. As Governor Kohn noted, growth is projected to be much weaker than what we would actually like, and the unemployment rate is much higher than we would like. Slack is abundant. Core inflation is low. So I think that alternative B still seems very, very right.

In terms of market expectations, I have no problem contradicting market expectations, if that’s appropriate. But in an environment where the economy is evolving close to our expectations, it would be sort of odd for us then to turn around and contradict market expectations. That implies either that we are capricious or that our communications strategy up to now has been very, very poor, putting the markets in the wrong place. I don’t think the markets are in the wrong place, so I’m not really sure why, given that things are evolving very close to what we expect, we would want to contradict those expectations at this time.

In terms of language, I would not insert the word “holdings” for “purchases.” I think it would be confusing at a time that we are still purchasing assets, and it could be taken as signaling that asset sales might be undertaken soon as part of the exit strategy—in other words, first. And I don’t think the Committee has clearly come to a conclusion on that point.

In terms of paragraph 2, I don't feel strongly about it, but I find that "energy prices have risen in recent months" does not really work, for me at least, because (1) I think it overstates the importance of energy prices in shaping our views and (2) energy prices have come back down quite a bit recently. So I think I would probably take that out.

On the TAF, I think we should just say that we don't expect to conduct any further auctions beyond that date because that's what we do expect, and why not just get it out?

CHAIRMAN BERNANKE. All right. President Plosser.

MR. PLOSSER. Yes. I want to ask a question about this "purchases" versus "holdings" issue. I want to ask Brian—we are purchasing, but there are also redemptions going on right now. So can you give me an idea of the magnitude of the redemptions that we are going to be seeing over the next two months or three months?

MR. SACK. They are small. So if you are asking about the net, clearly we are adding on net. Obviously, when we get to the next meeting, it will be a week or two from the end of the purchases. We will be at a point where we have tapered a lot more.

MR. FISHER. Could you speak up a little, please?

MR. SACK. I was just saying that, over this intermeeting period, the purchases are going to outpace the redemptions by far. We have about \$85 billion more of MBS to purchase. The redemptions are—

MR. PLOSSER. \$5 billion? \$15 billion? \$2 billion? What? \$100 billion?

MR. SACK. I'm sorry. I can take a look.

MR. PLOSSER. My point is that our holdings are being affected by both purchases and redemptions. And so getting back to the debate about "holdings" versus "purchases," we are not just purchasing, we are also redeeming.

CHAIRMAN BERNANKE. We were doing that last meeting also. His question is, What are we conveying?

VICE CHAIRMAN DUDLEY. Yes, I think that's the point. I think you are factually correct, but the question is, What impulse do we want to actually send to the market in terms of market expectations relative to what we are actually likely to do?

MR. SACK. So it looks as though we have—I don't have the exact profile over the whole year—maybe about \$10 billion a month coming off and, as I said, \$85 billion of MBS purchases and about \$10 billion more of agency purchases to do over the next two months.

MR. PLOSSER. Thank you.

MR. LACKER. The sentence refers to the next meeting. Are we going to be evaluating purchases or holdings at the next meeting?

CHAIRMAN BERNANKE. May I comment?

MR. LACKER. Yes.

CHAIRMAN BERNANKE. Let me talk about the whole statement, and then I will address your question.

MR. LACKER. Okay. I just added something that I thought was relevant to this.

CHAIRMAN BERNANKE. Okay. Let me just make a few comments. Just on the substance, I think it was pretty striking that in fact there was not a big change in the outlook and not really that big a change in our degree of certainty since our last meeting. We do see a recovery, but it appears likely to be moderate. In any case, it's still somewhat more projection than actuality. I talked about the level of uncertainty. Labor markets are still deteriorating. I think the UI claims are moving in the wrong direction, and I am not quite sure what is happening there. I am not sure it's entirely spurious. On the inflation side, we had a lot of discussion about

the five-year, five-year forward breakeven inflation rates, and I think that is an important thing, but there are technical and other reasons for that. And I think it is striking how much, for example, the dollar has moved in an anti-inflationary direction recently. And my general sense is that I didn't hear from around the table quite as much today as I heard earlier, last fall for example, about chatter, about the Fed's balance sheet, inflation expectations, those sorts of things. So I am not sure which way that's going.

In any case, given that we haven't changed our outlook much, given that uncertainty remains very high, and given that between now and the next meeting we'll have two employment reports and we'll have a lot more information, my preference is to maintain a status quo position in this meeting while continuing on our path toward normalization as best we can.

Let me talk about some of the specifics in the statement, and then I will address President Lacker's question and others. First of all, just on alternative C, paragraph 2, on inflation, given the decline in energy prices in recent weeks, I guess that it does seem a little odd to introduce that sentence in this meeting. I thought I heard a majority in favor of dropping the first sentence and just starting with "with substantial resource slack." I have heard from President Plosser now a couple meetings about C2. There are really two elements to that. One is dropping the resource slack reference. I am not sure that the Committee as a whole is there. I think most of us think there is some effect of resource slack. We have considerable disagreement about how important it is and how to measure it, and so on. The other thing that is in C2 is reference to appropriate monetary policy. We actually had something like that in the first paragraph, which I guess we dropped this time. But I take that point, and I think we should consider possibly including something like that as we go forward.

MR. PLOSSER. May I just make one comment? Previously I actually proposed that we could keep the resource slack sentence and then just add the second sentence of C2 as a way to combine the two.

CHAIRMAN BERNANKE. I think that is a reasonable suggestion, and let's foreshadow that for the next meeting. Perhaps you would remind us about that.

MR. PLOSSER. I'm sure I will. [Laughter]

CHAIRMAN BERNANKE. I think you might. Just one other piece of housekeeping before getting to the tougher questions: On the TAF, I thought I heard a majority, but maybe not, for going to zero after March. Bill, what was the language there that you were suggesting?

MR. ENGLISH. Why don't I just read the sentence? "The Federal Reserve is in the process of winding down its term auction facility. Fifty billion dollars in twenty-eight-day credit will be offered on February 8, and \$25 billion in twenty-eight-day credit will be offered at the final auction on March 8."

CHAIRMAN BERNANKE. Okay. Is that all right with everybody? Are there any who feel strongly that we should not? Okay. So let's make that change.

On the other issues, it's not a question of surprising markets or not surprising markets. It is a question of communicating accurately, and the question is, Do the markets understand what we think we are doing and what we are trying to achieve? So, first of all, with respect to holdings, I think that the use of "holdings" at this meeting might not change much of anything, but I think there is a significant risk that it would signal an imminent sales program, which I didn't hear us agreeing on yesterday. President Kocherlakota, I think we accepted your basic premise that we should do a gradual selling process that would get us down to zero MBS much more quickly than redemptions would do. So it's a question of what's the appropriate timing of

communicating that. We have several ways to communicate that. I can talk about this again in testimony coming up on two occasions.

It is important, I think, for us to see the effects of the end of the MBS purchases at the end of the quarter. You were talking about empirical studies. In a moment, we are going to have a very important empirical study. So I don't disagree with the fact that we should modify this, but I guess I think it's better to do it through other mechanisms and just hold off on this just for another meeting or two. I didn't hear anyone yesterday say that we should be selling immediately. I think there was a view that we should be selling gradually over a period of time but that the beginning of those sales might still be after the tightening process begins, for example. So I think it would be miscommunication at this point to put that in. I think it would give the wrong impression.

Likewise, with the "extended period" language, I understand the concerns that some folks have about that, and I don't always feel entirely comfortable with it myself, to tell you the truth. But there are a couple of aspects about it that I think we should point out. The first is one that the Vice Chairman mentioned, which is that the signal it's sending doesn't seem to be grossly wrong. The markets are expecting us to move in the second half of this year, and I don't think many of us around the table are much more aggressive than that. So it's not precluding us from moving at an appropriate time at this point. The other aspect of this statement that is very important is that it is explicitly conditional. We made a point a couple of meetings ago of putting in this language about subdued inflation trends and contained inflation expectations. Clearly, if those things start moving adversely, that will invalidate the premise of the "extended period" language. And, third, although I know people have talked about six months, the similar language in 2004 was dropped and interest rates were raised only in a couple of meetings I think.

So particularly if the conditions underlying the statement begin to change, I don't think that we are so locked in. I'm happy working toward the elimination of that statement or a modification of that statement. But if we were to do it today, we would be signaling with high likelihood that we would be moving in the next two or three meetings, and I don't think any one of us wants to signal that right now.

So it's not a question of buying flexibility; it is a question of being accurate in what you are telling the market. And right now the market's views seem to me to be more or less appropriately calibrated. President Lacker.

MR. LACKER. Mr. Chairman, there's an interpretation of "extended" as referring to six months. At the next meeting, as someone pointed out, six months out is pretty deep into the end of the year, so we're going to have to remove it. What I'm saying is that we would want to remove it at the time when we don't intend to signal or we don't believe we are going to move in the next two or three meetings.

CHAIRMAN BERNANKE. Well, I'm saying that we could remove it one or two meetings ahead, if conditions warranted, because it is a conditional statement.

MR. LACKER. Okay. But that suggests that those of us who have suggested interpretations that are closer to six months might want to reguide or reeducate markets about it.

CHAIRMAN BERNANKE. I think it would be important to stress in your elucidations that this statement, if you read the sentence, says that economic conditions—and we lay out what those conditions are—are likely to warrant interest rates that are exceptionally low. So I think it is analogous what the Swedes do, which is to forecast their own interest rates.

MR. LACKER. Yes. I am all in favor of our feeling as if we could drop "extended" and move very quickly after that.

CHAIRMAN BERNANKE. In a situation like today, where there has been no palpable change in the outlook, I don't see the case for that. But if there were a significant change in the outlook, I think that we certainly could. I'm also fine with working toward a gradual toning-down of this language, also along the lines that President Hoenig and others have suggested, to "some time," et cetera. But I think we are not there yet. Right now the modal expectation around the table is that we are still some meetings away from it.

MR. LACKER. I agree. I take your line of argument to mean that you would not be receptive to an argument that we shouldn't remove it because we don't intend to move within the next two or three meetings.

CHAIRMAN BERNANKE. That confused me. [Laughter] I'm interested in accurate communication. Right now, the markets have what I think is a fairly reasonable forward curve. If we were to remove this today, the market expectation would be that we would be moving, say, by April, I would guess. And I don't think that is an accurate representation of what the Committee believes at this moment.

MR. LACKER. Okay. I understand that, and I don't want to belabor this—this will be my last shot at it. An argument that we don't want to move within the next six months doesn't mean we shouldn't remove it.

CHAIRMAN BERNANKE. The trouble with removing it, without some basis for it, is that it will miscommunicate our views.

MR. LACKER. I understand.

MR. PLOSSER. One question: What the sentence says is "to warrant exceptionally low levels of the federal funds rate for an extended period." The market seems to interpret that as being that we don't move at all. Yet we could move 50 basis points and still have exceptionally

low interest rates. So in your view, what is the interaction between “extended period” and “exceptionally low”? Should we be interpreting it as no move or that we may be moving up slowly?

CHAIRMAN BERNANKE. Again, the Eurodollar futures curve seems to me to be a fairly reasonable guess of what we might want to do. Now, there have been some—like Larry Meyer, for example—who have suggested that we might want to take a first step up and then plateau at 1 percent or something like that. That’s possible, but that is a pretty subtle alteration. I think we would have to communicate what we were trying to do there in advance pretty clearly.

So, again, I am hopeful that, besides the language, we do have other tools, including the ramping-up of our reserves-draining capacity and those sorts of things. But I just want to assure everybody that we are not locking ourselves into an iron-clad six-month period with this language. In fact, we discussed this at Jackson Hole. Carl Walsh asked us about this, and we said explicitly that we were not playing a Woodford game where we were trying to commit to keeping rates low longer than we otherwise would. That’s not what the intent is. President Kocherlakota.

MR. KOCHERLAKOTA. Yes. Thanks, Mr. Chairman. My concern is that I thought that yesterday we had a very good, very productive discussion, and I agree with you that my sense of the sentiment of the table was that there was some support for a gradual reduction in our balance sheet, faster than would be warranted through redemptions alone. A lot of heterogeneity in views about timing. I remain concerned about the message that’s on the table in some vague sense getting out there. And this term “socializing” that Governor Warsh uses is a great one, and I’m sympathetic to the idea that changing this one word is a rather blunt way to try to accomplish

this. I'm on board with that. What are the other vehicles that we have at our disposal for doing that?

CHAIRMAN BERNANKE. Testimony, speeches, minutes, and ultimately the statement. So I think we can communicate that. Now, I also think, as I said yesterday, that we don't want to say more than we know. In particular, I think we ought to get some staff input. You have suggested a pattern of sales that may or may not be the best one. We want to look at that—it is very important. So we may not want to communicate anything very precise about that yet. But I think it is reasonable for me to begin to introduce the idea that, perhaps not immediately or the near term but at some point, we will want to have a pattern of slow sales in order to normalize our balance sheet. So that would be, I think, the best way to do it.

MR. KOCHERLAKOTA. So let me ask a pointed question. Should the New York Fed website still refer to it as a buy-and-hold program?

CHAIRMAN BERNANKE. What?

MR. KOCHERLAKOTA. The New York Fed website has a bunch of frequently asked questions about the agency MBS program, and one question is, Do we face any risk of loss on this program? And the answer given is, "There is no default risk," which I agree with totally. And there is no capital loss. But we might face interest rate risk, but we don't really face interest rate risk because it's a buy-and-hold program.

CHAIRMAN BERNANKE. Well, to answer that question, we would like to have some staff analysis of what would be a good pattern that would achieve these objectives, and I hope without too much capital risk. President Bullard.

MR. BULLARD. I just have one comment on "holdings" versus "purchases." I agree with you that we want to try to keep a status quo type of statement, and we might be

communicating too much by changing it. But the way it's written it says that we are evaluating purchases, and I don't think we are evaluating purchases anymore. It is not as though we are going to change our purchases or anything. Maybe markets understand that, but it's not really—

CHAIRMAN BERNANKE. I think we need to do something at the next meeting, given that we are at that point. I think we are very close to the end of the actual purchases. But it is still possible that we might want—I think you have spoken in favor of contingent policies—to reevaluate the end of our program.

MR. KOCHERLAKOTA. But I think at the end of March we might be evaluating purchases and we might be evaluating sales of various kinds. “Holdings” might not be the right word. Maybe “portfolio” is a better word. But I think at that point we might want to indicate that more weapons are available.

MR. BULLARD. Actually, at that point, we might want a larger reworking of this portion of the statement that more accurately reflects what—

CHAIRMAN BERNANKE. That sounds reasonable. I am concerned only about accurate communication. I want the public to understand what it is we have actually decided around the table. Any other questions? Matt, do you have notes on the changes that we have made?

MR. LUECKE. Yes. This vote would encompass the directive that shows up on page 8 of the package. It would also encompass alternative B, as shown on page 3 of the package with two changes. The first change would be to eliminate the words in red at the beginning of paragraph 2 and, thus, begin with the words, “with substantial resource slack.” The second change would be to substitute in paragraph 4 the sentence on the TAF with the sentence that was

read by Bill English. And I would note that we would not be including the word “holdings” within brackets in paragraph 3.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes
President Bullard	Yes
Governor Duke	Yes
President Hoenig	No
Governor Kohn	Yes
President Pianalto	Yes
President Rosengren	Yes
Governor Tarullo	Yes
Governor Warsh	Yes

CHAIRMAN BERNANKE. Okay. Thank you very much. A few items. First of all, your projections can be updated if submitted by 5:00 p.m. tomorrow. Second, on redemptions, the Desk needs a bit of guidance. My sense of our meeting yesterday was that we were happy for the Desk to run off all agency-related securities starting immediately but that, for the time being, they would like to roll over Treasuries. Is that acceptable to everybody?

VICE CHAIRMAN DUDLEY. I think there is one question: Roll them into what?

CHAIRMAN BERNANKE. Yes, roll them into what? Into shorter maturities generally. Is that okay?

MR. SACK. We were going to propose for now maintaining the current policy of reinvestment and preparing a full analysis that we could discuss either between the meetings or at the next meeting on whether to redeem or to use a more complicated rollover strategy to shorten the maturity.

MR. DUDLEY. Right now, when they come due, you rebuy the thing that matures. If a ten-year matures, you roll that into a new ten-year.

MR. SACK. If you want a more immediate change, we need to discuss it in more detail.

CHAIRMAN BERNANKE. So what you want to do for right now is roll it over, but let's not wait until the next meeting to get clarity on this.

MR. SACK. Okay. There are repercussions, and I want to make sure that everyone understands them. For example, our securities lending program will be affected.

CHAIRMAN BERNANKE. All right. We will check with everybody by phone.

VICE CHAIRMAN DUDLEY. Yes. There are also some operational issues. How do you roll into bills? There may not be a bill auction on the right day, and so there are some complexities.

MR. SACK. There are only two dates this year when return coupons coincide with no bill issuance.

CHAIRMAN BERNANKE. I think there is a preference around the table to go to shorter maturities for Treasuries, if possible. Let's see. The next meeting is Tuesday, March 16. It is a one-day meeting. We will start at 5:00 in the morning. [Laughter] We may have to start at 8:00 in the morning. Let me just ask everyone, when you plan your remarks for next time, please keep in mind that it is a one-day meeting, and we will have a very tight agenda. President Lacker.

MR. LACKER. Do you intend to have the same three-part structure, or are you going to go back to two-part?

CHAIRMAN BERNANKE. Well, I would think that we would not have an extended staff presentation other than the economic presentation. That would be my assumption.

Anything else? Okay. The meeting is adjourned. The members of the Committee and the staff have been asked to remain. You can stay and have lunch. We will have our discussion of

legislative matters. Other staff members, thank you, and if you would like, there is lunch available in B-4001 for those who would like to take part in that. Thank you.

END OF MEETING