Meeting of the Federal Open Market Committee on
December 15–16, 2009

A joint meeting of the Federal Open Market Committee and Board of Governors of the Federal Reserve System was held in the offices of the Board of Governors in Washington, D.C., on Tuesday, December 15, 2009, at 2:00 p.m., and continued on Wednesday, December 16, 2009, at 9:00 a.m. Those present were the following:

Mr. Bernanke, Chairman
Mr. Dudley, Vice Chairman
Ms. Duke
Mr. Evans
Mr. Kohn
Mr. Lacker
Mr. Lockhart
Mr. Tarullo
Mr. Warsh
Ms. Yellen

Mr. Bullard, Ms. Cumming, Mr. Hoenig, Ms. Pianalto, and Mr. Rosengren, Alternate Members of the Federal Open Market Committee

Messrs. Fisher, Kocherlakota, and Plosser, Presidents of the Federal Reserve Banks of Dallas, Minneapolis, and Philadelphia, respectively

Mr. Madigan, Secretary and Economist
Mr. Luecke, Assistant Secretary
Mr. Skidmore, Assistant Secretary
Ms. Smith, Assistant Secretary
Mr. Alvarez, General Counsel
Mr. Baxter, Deputy General Counsel
Mr. Sheets, Economist

Messrs. Altig, Clouse, Connors, Kamin, Slifman, Tracy, and Wilcox, Associate Economists

Mr. Sack, Manager, System Open Market Account

Ms. Johnson, Secretary of the Board, Office of the Secretary, Board of Governors

Mr. Parkinson, Director, Division of Bank Supervision and Regulation, Board of Governors

Mr. Frierson,[1] Deputy Secretary, Office of the Secretary, Board of Governors

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[1] Attended Tuesday's session only.

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

Mr. English, Deputy Director, Division of Monetary Affairs, Board of Governors

Ms. Robertson, Assistant to the Board, Office of Board Members, Board of Governors

Ms. Edwards, Messrs. Levin[2] and Nelson,[1] Senior Associate Directors, Division of Monetary Affairs, Board of Governors; Messrs. Reifschneider and Wascher, Senior Associate Directors, Division of Research and Statistics, Board of Governors

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

Ms. Zickler, Deputy Associate Director, Division of Research and Statistics, Board of Governors

Mr. Small, Project Manager, Division of Monetary Affairs, Board of Governors

Mr. Bassett, Section Chief, Division of Monetary Affairs, Board of Governors; Mr. Roberts,[2] Section Chief, Division of Research and Statistics, Board of Governors

Ms. Beattie,[3] Assistant to the Secretary, Office of the Secretary, Board of Governors

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

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

Messrs. Fuhrer and Rosenblum, Executive Vice Presidents, Federal Reserve Banks of Boston and Dallas, respectively

Mr. Krane, Ms. Mester, Messrs. Schweitzer and Waller, Senior Vice Presidents, Federal Reserve Banks of Chicago, Philadelphia, Cleveland, and St. Louis, respectively

Mr. Weber, Senior Research Officer, Federal Reserve Bank of Minneapolis

Messrs. Clark, Dotsey,[2] Fernald, Hornstein, Olivei,[2] and Wynne,[2] Vice Presidents, Federal Reserve Banks of Kansas City, Philadelphia, San Francisco, Richmond, Boston, Dallas, respectively

[1] Attended Tuesday's session only.
[2] Attended the portion of the meeting related to inflation dynamics.
[3] Attended Wednesday's session only.

Messrs. Friedman and van der Klaauw,[2] Assistant Vice Presidents, Federal Reserve Bank of New York

Mr. Martinez-Garcia,[2] Research Economist, Federal Reserve Bank of Dallas

[2] Attended the portion of the meeting related to inflation dynamics.

Transcript of the Federal Open Market Committee Meeting on December 15–16, 2009

December 15, 2009—Afternoon Session

CHAIRMAN BERNANKE. Good afternoon, everybody.

PARTICIPANTS. Good afternoon.

CHAIRMAN BERNANKE. We need a motion to close our meeting.

MR. KOHN. So moved.

CHAIRMAN BERNANKE. Thank you. Our meeting today and tomorrow follows the basic sequence we've been having recently, but with an important addition, which is that we have a staff presentation on inflation dynamics. We need about two hours for that presentation, I understand, and we've thought about it and decided to put it at the end of the meeting so we would have plenty of time to complete our policy decision. But I hope that people will pay attention to the time and make sure we have enough time tomorrow to give appropriate attention to the presentation.

In that spirit, why don't we start directly? Mr. Sack.

MR. SACK.[1] Since the last FOMC meeting, financial conditions have generally become more supportive of economic growth. Yields have declined at short- and intermediate-term maturities, and equity prices have posted a solid gain, while the dollar has remained about unchanged on net.

Some of the adjustment in financial markets appears to have been driven by increased confidence among investors that short-term interest rates will remain low. The repetition of the "extended period" language in the November FOMC statement, along with the additional clarity provided by including explicit conditioning factors, seemed to solidify investors' expectations that policy would remain on hold. Subsequent speeches by FOMC members, including comments that U.S. asset prices do not look obviously out of line with fundamentals, were seen as providing further support to that view. In response, the expected path of monetary policy derived from futures quotes shifted down as much as 35 basis points over the intermeeting period, as shown in the upper left panel.

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

The Bluebook noted that these futures rates overstate what investors see as the most likely path for short-term interest rates, because they are influenced by the distribution of risks around that outcome. This point can be made by looking at options prices to derive the perceived probabilities of different outcomes for the short-term interest rate, as shown in the distribution to the right. According to that exercise, the most likely outcome for the three-month LIBOR rate about ten months from now is that it will remain in the 25 to 50 basis point range. However, given the proximity of that outcome to the zero bound, the risk is skewed almost completely in the direction of higher rates, pulling the mean of the distribution well above the mode. As a result, the futures price, which corresponds to the mean, is about 50 basis points above what is seen as the most likely outcome.

With this consideration, there does not appear to be much discrepancy left between market-based measures of policy expectations and survey responses, if the latter captures the modal outcome seen by respondents. Our primary dealer survey indicates that the median respondent expects the first tightening to occur in the fourth quarter of 2010, with a range of views that spanned from the second quarter of 2010 to early 2012.

We also used the survey to query dealers about their interpretation of the "extended period" language used in the FOMC statement. By far, the most common response was that the "extended period" language would be removed three meetings before an actual rate hike. We are happy to use future versions of the survey to quantify any timing of policy tightening that you want—such as "some time," "a while," "before long," or, maybe to accommodate some Committee members, "immediately." [Laughter]

The lower expected path of monetary policy contributed to a decline in shorter-term Treasury yields. This adjustment occurred even though the incoming economic data were generally stronger than anticipated. As shown in the middle left panel, the two-year yield fell about 10 basis points, on net, while the 10-year yield posted a small increase. At one point over the intermeeting period, the 2-year yield had dipped to 65 basis points—essentially equaling the lowest level on record, as shown in the middle right panel—although it has more recently retraced back above 80 basis points. The 10-year yield, at just over 3.5 percent, is also low by historical standards, though it is still well above the levels reached at the end of last year.

Yields remain at these low levels despite the fact that inflation concerns seem to be lingering. Some market participants continue to discuss whether the accommodative monetary policy stance and expansionary fiscal policy will eventually lead to upward inflation pressure. Consistent with those concerns, the 5-year, 5-year forward break-even inflation rate remains near the upper end of the range observed in recent years, as shown in the bottom left panel.

While we recognize that technical factors can affect break-even rates, it seems that perceptions of inflation risk have at least contributed to their recent patterns. Several observations support that view. First, flows into mutual funds that invest in inflation-linked products have increased notably over the course of 2009, indicating elevated demand for inflation protection among retail investors. Second, investors in the swaption market are paying an increasingly large premium for protection against a rise in longer-term interest rates, which could in part reflect concerns about inflation expectations moving higher. However, some of the other patterns associated with inflation jitters, such as rising gold prices and a falling dollar, have reversed course in recent weeks. We will be watching closely to see if that reversal is a temporary head fake or a more persistent shift in trend.

Looking across global sovereign debt markets, we find that another factor that has recently come into play is the perceived risk of default. Given the fiscal challenges facing a wide range of countries, investors have been reevaluating their views on sovereign default risk. One measure of this risk, albeit an imperfect one because of the limited size of the market, is the pricing of CDS on sovereign debt. As shown to the right, there has been considerable upward pressure on the yields of Greek debt as markets have grown concerned about the prospect of default. Similar concerns have been expressed about Spain and Ireland, and the fiscal situations in the U.S. and the U.K. have also been discussed in this context. However, to date there appears to have been little upward pressure on U.S. yields from this factor.

Overall, any upward pressure on Treasury yields arising from investors' concerns about longer-term inflation risks or the fiscal outlook is being dominated by the downward pressure arising from the prospect of low short-term interest rates for an extended period, leaving Treasury yields quite low.

Turning to the next exhibit, better economic news and the prospect of accommodative short-term interest rates contributed to a further advance in the prices of some risky assets. Most notably, broad equity indexes posted another sizable gain since the last FOMC meeting, with the S&P 500 index up more than 5 percent on net.

One of the issues that I have addressed in recent briefings is whether risky asset prices have risen too far. To help make this judgment, we can look to valuation models, such as the Board's measure of the equity premium. This premium, shown to the right, still appears wide by historical standards, suggesting that the run-up in equity prices since earlier this year has not pushed them too high relative to fundamentals. Similarly, an analysis of corporate bond spreads suggests that their risk premiums are also not unusually narrow.

Another approach to address this issue is to look across asset classes in order to see if *all* risky assets are rising, as such a pattern could imply an indiscriminate increase in risk tolerance on the part of investors. Correlations in the movements across various asset classes, reported in the middle left panel, have been unusually high over the past six months, compared with their levels a few years ago, with increasing equity prices strongly associated with rising emerging market equity prices, rising commodity prices, and declining corporate yield spreads. To be sure, this pattern could result from a variety of factors, such as the considerable change in the economic outlook and the easing in financing strains. However, some might take this pattern as indicative of a large shift in risk preferences that, if carried too far, could be associated with speculative excesses.

The current intermeeting period provides some relief from this pattern, though. Even though equity prices charged ahead, they did not pull all risky asset prices with them. Indeed, corporate bond spreads, shown to the right, appear to have leveled out to a considerable degree. Moreover, yield spreads on commercial mortgage-backed securities, the bottom left panel, have widened since the summer, and ABS spreads across most other asset classes have also edged higher recently. Thus, the performance of risky assets has been mixed. In addition, even though the events associated with the debt standstill by Dubai World were not a primary driver of these price movements, they provided a reminder to investors of the need to assess credit risk and differentiate across borrowers.

Banks, in particular, continue to be wary of taking additional credit risk onto their balance sheets. They have continued to tighten the terms on many types of lending, and the volume of bank loans has continued to contract. These patterns contrast sharply with the narrowing of credit spreads in capital markets since earlier this year and the robust issuance of corporate bonds that has taken place in recent months. Bank equity prices, shown in the bottom right panel, were mixed over the intermeeting period. The recent focus of the market has been on the efforts by Bank of America, Citigroup, and Wells Fargo to repay TARP funds, as investors weigh the advantages of escaping TARP against the dilutive effects of the capital increases required to do so.

The next exhibit addresses the Fed’s large-scale asset-purchase programs. The Desk has been tapering its purchases of MBS and agency debt, as shown in the top two panels. But despite the slower pace, our purchases continue to put pressure on these markets. The available supply of MBS in the market has been limited, as seasoned bonds seem to be largely locked up in portfolios and new originations have been relatively light.

Given these market dynamics, our purchases have produced a further richening of MBS and agency debt relative to Treasury securities, as can be seen in the yield spreads shown in the middle panels. Indeed, the concern among market participants that these spreads would widen as the Fed pulled back from its purchase programs has not yet materialized. Market participants continue to raise this concern, however, with many expressing a view that the MBS spread to Treasuries could quickly rise by 25 to 50 basis points from its current level. Accordingly, we will continue to watch for such developments as our purchases decline further.

Of course, winding down our purchases of assets is just one dimension of managing our balance sheet. The evolution of financial market conditions will depend on *all* decisions influencing the size and composition of the balance sheet going forward.

In that regard, the Committee faces a key policy issue, namely, setting the appropriate strategy for either redeeming or reinvesting maturing SOMA holdings. Like asset sales, redemptions of SOMA assets allow policymakers to shrink the balance sheet, simultaneously reducing excess reserves and reversing some of the portfolio-balance effects that resulted from the LSAP programs. This outcome may be seen as desirable, depending on the evolution of economic and financial conditions.

The figure in the bottom left panel shows the profile of remaining maturities for our holdings of Treasury and agency securities as well as the pattern of principal payments that we anticipate on our holdings of MBS. The MBS profile is based on a prepayment model that incorporates a market-based forecast of interest rates, and it should be noted that there is a considerable amount of uncertainty surrounding those estimates. Those MBS payments would come on top of the nearly $50 billion of prepayments that we have already experienced to date, and which we have not reinvested.

The table in the bottom right panel shows the path of the size of the Fed's balance sheet under several possible redemption strategies. The first row assumes full reinvestment of all SOMA securities, which would require the LSAPs to be expanded to replace the MBS prepayments and agency debt maturities already received. This strategy would leave the size of the portfolio steady at $2.2 trillion through 2011. The second row assumes that the Desk redeems all agency securities that mature and all MBS that are prepaid, while following its usual practice of reinvesting Treasury holdings. This strategy allows the balance sheet to shrink gradually, providing about $350 billion of redemptions (relative to the full reinvestment strategy) by the end of 2011. The third row shows the effects of redeeming all SOMA holdings, including Treasury securities. This strategy reduces the balance sheet by over $500 billion by the end of 2011. Of course, other strategies could also be used under which only a portion of the Treasury portfolio would be reinvested.

At this point, the Desk only seeks to verify the Committee's preference to allow MBS and agency debt to run off the balance sheet without replacement. As noted, this is the approach that has been taken to date with the prepayment of MBS, and it is the approach that was taken with the agency debt security that matured on December 10, the first security purchased under the LSAP programs to mature. Going forward, the flow of maturing agency securities and prepaid MBS will become more substantial, adding to the importance of deciding upon the redemption strategy.

Reaching a decision for handling Treasury securities is less pressing, as the Desk has a long-standing practice of routinely reinvesting existing Treasury holdings and can continue to do so for now. However, policymakers may want to revisit the redemption strategy for Treasury securities before long, as it gives them more scope to achieve different balance sheet outcomes.

Your final exhibit covers the behavior of short-term interest rates and discusses the market's views on some of the Fed's exit tools. As shown in the upper left panel, the Fed's balance sheet expanded modestly since the last FOMC meeting, reflecting further increases in our asset holdings accumulated under the LSAP programs. The balance sheet currently stands at $2.2 trillion, with $1.8 trillion of that corresponding to our holdings of Treasury, agency, and mortgage-backed securities.

Partly as a result of the growth of the balance sheet, the amount of excess reserves in the banking system has also increased and currently stands at about $1.1 trillion, as shown to the right. With that large amount of liquidity in the system, the federal funds rate has remained persistently below the interest rate paid on excess reserves, or the IOER rate.

It is useful to look at this relationship between excess reserves and the federal funds rate as a scatter plot, shown in the middle left panel for the period since last December. As can be seen, there has been a downward slope to the relationship, although it is very small in magnitude. When excess reserve balances were around $600 billion, the spread between the federal funds rate and the IOER rate tended to be limited. As reserves have increased towards and now beyond $1 trillion, the spread has grown to a typical level of 10 to 15 basis points. Of course, a key area of uncertainty that policymakers face is the extent to which this relationship will shift as the IOER rate increases.

Given the large amounts of reserves and the behavior of short-term interest rates, market participants are increasingly asking for more information about the FOMC's exit strategy. They are particularly focused on the likelihood, sequencing, and size of various policy actions, such as draining reserves, increasing the IOER rate, and selling assets. We asked a number of questions in our dealer survey to gauge their own views on these issues.

The survey results indicate that about three-quarters of the respondents expected the Fed to use temporary reserve-draining tools, either reverse repos or term deposits, before any increases in the policy rate. The remainder expected reserve draining and policy rate increases to begin at the same time, and no respondents expected the policy rate to be raised before any draining operations took place. Based on the median of all responses, the initial use of reverse repos and term deposits was expected to take place in the third quarter of 2010, while the first policy tightening was expected to take place in the fourth quarter, as noted earlier in the briefing.

Some additional information on the expected path of these tools is presented in the lower left panel. As can be seen, reverse repos and term deposits are both expected to ramp up through the second quarter of 2011 and to edge up further into

2012. By the middle of 2012, the respondents expected about $300 billion of outstanding reverse repurchase agreements and $200 billion of term deposits. About half of the respondents also expected asset sales to be used, bringing the average expected path of sales above zero. However, as can be seen, asset sales were expected to be increased more slowly. Lastly, about half of the respondents also expected SFP balances to be raised from their current level and hence to remove reserves.

Based on the use of all of these tools, respondents on average expected the FOMC to drain several hundred billion dollars of reserves before the first policy tightening, leaving the amount of excess reserves at that time below $1 trillion. However, as shown by the distribution in the bottom right panel, there is a fairly wide range of views on that outcome. Respondents also expected the FOMC to continue draining reserves even after an increase in the policy rate, but their responses suggest that a decent amount of excess reserves would still be left in the system through at least 2012.

Let me close with a brief note about year-end effects, which are not covered in your charts. We continue to monitor year-end pressures and the potential consequences for markets. As I discussed in my last briefing, we are not seeing any upward pressure on unsecured lending across year-end, the traditional year-end effect in markets, presumably as a result of the substantial amount of liquidity in the markets. Instead, year-end pressures seem to be most evident in strong demand for risk-free assets spanning year-end, which has put significant downward pressure on short-term Treasury yields. For example, the implied forward rate from Treasury bills for the week spanning year-end has been consistently negative for several months, and last week's auction of the four-week bills stopped out at a rate of precisely 0. However, the downward pressure on rates does not appear to be intensifying or causing significant market disruption, and thus does not clearly necessitate a policy response.

One development that could alleviate some of the market pressure is issuance of SFP bills ahead of year-end. If the debt ceiling is increased soon by a sizable amount, the Treasury will likely auction SFP bills in the last week of the year. Those auctions would be part of a broader plan to return SFP balances to $200 billion. However, given the politics surrounding the debt limit decision, this outcome is, at best, uncertain at this point. Thank you. That concludes my prepared comments.

CHAIRMAN BERNANKE. Thank you. Brian, you're right that we need to be thinking as a Committee about the sequencing of how we will remove the policy accommodation. My thought on this had been that we needed to wait until we had a somewhat clearer idea of what the timing of the availability of the tools was going to be. I'm asking Brian Sack and Brian

Madigan, whom I have not warned about this question—do you think that January might be a time when we could at least begin a discussion on this at the Committee level? Will we have enough information about our tools?

MR. SACK. Yes, I think we'll have enough information. There will certainly be details about the tools that we're still working out, but I think we'll have some information on their scope. For reverse repos, in particular, we essentially already have the capacity to do the amount of reserve draining that was indicated in the survey. So I wouldn't argue for putting off that more strategic debate in order to hammer out every last detail of the tools. I think it's probably time to move forward with that.

CHAIRMAN BERNANKE. Okay. So no later than January we will put this on the agenda for discussion.

MR. PLOSSER. Mr. Chairman.

CHAIRMAN BERNANKE. Yes.

MR. PLOSSER. I think it is important to do that in January. But I would just like to emphasize that, in the context of that and thinking about sequencing, I think it would also be very helpful to think about what we believe the steady-state policy tools are going to be; that is, how are we going to conduct policy in normal times going forward with interest on reserves? And, I think it is important to have that discussion, but in the context of thinking about how we use the tools, and the way we use these tools, interacts with where we ultimately want to end up in how we conduct policy—whether it is a floor system or a corridor system—and what we think is going to happen to the funds market. I think these things are tied together, and I'd like to see that discussion carried on in tandem if we can.

CHAIRMAN BERNANKE. The point is well taken. I guess I would say that, given all of these important decisions, maybe we should all try to minimize excessive speculation in public about this subject until we as a Committee have come to more clarity on sequencing. But these are issues we need to address very soon. So thank you for that.

On the issue of reinvestment, let me just add this one other option I can think of, which is to reinvest in bills. This gives you maximum flexibility if you want to drain quickly.

Are you looking for some kind of Committee guidance at this point, or are you going to come back to us?

MR. SACK. I would just like to make sure that everyone is on board with running down the agency and MBS holdings, or at least doing that as an interim strategy. In terms of a strategy for the entire portfolio or a strategy to be used beyond the near term, I think that, yes, we should come back and have a full discussion and one that probably to some degree folds in the issue of asset sales, because obviously redemptions accomplish many of the things that asset sales accomplish.

One way to think about the redemption strategy is that it is in some sense a commitment strategy to convince the markets that you are not going to shed your portfolio too quickly. So one question I think we should consider is: If there are other ways to make that commitment, then do asset sales give us more flexibility? Obviously what is somewhat odd about redemptions is the flip side of that, which is that this decision about how quickly to shrink the portfolio is governed by other factors that are uncertain and that could change and so on. So I would like to give it full consideration, along with the discussion of whether there is any strategy through which we could sell assets safely in some regard.

CHAIRMAN BERNANKE. Well, again, use of bills could smooth out the path if you thought the redemptions were too quick, for example.

MR. SACK. Absolutely.

CHAIRMAN BERNANKE. If anyone has concerns about letting things mature as an interim strategy, you should mention that in our discussion.

Before I open the floor for questions for Brian, the Vice Chairman had an introduction he would like to make.

VICE CHAIRMAN DUDLEY. I wanted to introduce Steve Friedman from the Markets Group in New York. Steve runs the forex area. So he's partners in crime with Mr. Sheets on swaps and other things. Welcome, Steve.

CHAIRMAN BERNANKE. Welcome. Okay. Questions or comments for Brian? Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Brian, on panel 29, the orange line for asset sales—that is understood by dealers to be sales and not just the runoff through maturation of these securities?

MR. SACK. That's correct, though I think one shortcoming of the survey as we designed it is that we didn't actually ask about redemptions, so I think we will do that in the future. But this question was phrased to be explicitly about sales. A few dealers volunteered views on redemptions under the category of "other," but I think in the future we'll be more careful about trying to get their views on their expectations about the redemption strategy.

MR. TARULLO. All right. I think you just answered my next question, which is: At this juncture you're not certain as to what the dealer views are on what our redemption default position is?

MR. SACK. I would strongly guess that the consensus expectation is that the agency and MBS will be run off and the Treasuries will be reinvested, but I'll have more confidence in that if we measure it in the next survey.

MR. TARULLO. Thank you.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. Just a question on panel 28. Is the policy rate that they're talking about there the fed funds rate or the interest rate on reserves?

MR. SACK. It's the federal funds rate. I think it's likely that market participants see those two, the federal funds rate target and the IOER rate, moving in tandem. But again, we didn't explicitly get that from the survey—the survey asks about timing of policy tightening in terms of an increase in the federal funds rate target.

MR. ROSENGREN. So no dealer raised the question of whether you would just move the interest rate on reserves but not do anything else, for example?

MR. SACK. They did not. But again, I think we could incorporate that in future surveys. I also think that, if we're very interested in gauging the market's views on all of these issues—obviously there may be a few survey issues to clean up—we also might want to consider doing a broader survey. This is a survey of the 18 primary dealers. It's answered mainly by the economists at those primary dealers. We're not convinced that they have the same views as the traders or as a broader set of financial firms. So if there is a lot of interest in gauging these expectations, I think we could make a more extensive effort for the next meeting.

CHAIRMAN BERNANKE. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I wondered, Brian, if you could talk a little bit about the CMBS market and the TALF, and particularly new CMBS. I guess the issuance has been limited under the TALF. Why is that, and what are the prospects?

MR. SACK. As you know, the November TALF subscription included the first new-issue CMBS deal, the DDR deal. That seemed to have some positive effect on the market, even though we ended up taking only a small amount of risk, I think, on the portfolio—the amount of the loan was only $72 million. The deal was very well received and seemed to initiate some activity in the market. Since then we've seen two other new single-borrower issues come to market.

MR. KOHN. Through TALF?

MR. SACK. No, not through TALF, outside of TALF. And we hear reports of a handful of other issues also being prepared to come to market. Of course, this is still a trickle of issuance compared with where we were several years ago, so I think the market is still extremely impaired, but showing some signs of life.

MR. KOHN. Are there signs that more are going to bring it to TALF?

MR. SACK. I think TALF has been a very important factor in bringing this activity back and will continue to be for as long as it's in place. But, at the same time, I think there has been a surprise at how strong the demand has been for the issues. So maybe that's the most encouraging sign—not only did TALF get a deal done, but it brought some activity back to the market even independent of TALF. We see that as a very positive sign.

MR. NELSON. I'd add just a few things. The two deals that were priced had been in the TALF pipeline, so they were thinking of making them TALF-eligible, and they decided, having observed the reaction to the first deal, it was possible to go ahead without that. The other thing is that half of the loans that were taken out for DDR have actually been repaid already, that is, half of the $72 million. Finally, yesterday was the December CMBS subscription, and there were no new-issue CMBS brought to that subscription.

MR. SACK. Let me add a few more things. We have begun to ask market participants about their expectations for the market, to try to assess how dependent it is on TALF. We've asked a very small set of market participants, so take all of these responses with a grain of salt. The general view was that CMBS spreads would widen once the TALF expired, and, indeed, in secondary market trading we do see some difference between similar deals that are TALF-eligible and not TALF-eligible. So it does appear, based on that evidence, that the TALF is having an effect on keeping spreads narrower than otherwise.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. Thank you. Brian, actually you began to answer my question on the primary dealers. I realize, after listening to and seeing presentations like this, I didn't really know who the survey respondents were. Is it really bank economists? I thought this was more financial market participants. I guess the question is: If it is bank economists, is it really that different from, say, the Blue Chip or NABE or something like that?

MR. SACK. It's very hard to gauge. We know the survey is filled out by a lot of economists, but they sit on trading desks and talk to traders. So it's somewhat mixed, I would say, in terms of what you are actually getting.

MR. EVANS. Do you have any idea if it's consistent from time to time, or do they mix it up?

MR. SACK. My impression is that it's consistent. At the New York Fed, we also interact with a separate group of advisers, who are from the buy side, and we've been experimenting with running a similar survey out to that group where we clearly would be reaching investment managers. As we move into 2010, we hope to bring that product on line as a MarketSOURCE piece for exactly this purpose, that is, to broaden our reach in these surveys. I think the surveys are proving very valuable in being able to address key policy issues, so I think we want to maximize their effectiveness.

CHAIRMAN BERNANKE. Vice Chairman.

VICE CHAIRMAN DUDLEY. As one of those people who used to receive those surveys, I know that they usually go to the economists who sit on the desk. If they're uncertain about how to answer the question, they'll talk to the traders. So I think there's probably a little gap between the economists' views and the traders' views, but generally the traders are consulted.

CHAIRMAN BERNANKE. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. Brian, a couple of questions that are triggered by the slides, but you may want to wait until next month to answer them. Looking at slide 23, if we wanted to shift this maturity schedule, could we trade within the portfolio to adjust the way that maturity schedule looks?

MR. SACK. Yes, you certainly could. Even, say, within a certain asset class, like Treasuries, you have options such as those that came up earlier, like redeeming longer-term securities and reinvesting shorter-term ones, or even reinvesting longer-term ones into shorter-term securities. There are some limits on doing that at auction, but you could always do that in the secondary market as well. The same is true for MBS. There's nothing in theory that prevents us from selling MBS and purchasing Treasuries or trying to reallocate across asset classes. I think there would be obvious challenges to doing any of that in terms of communicating to the markets what you’re doing, and we’d have to be very careful in that communication, but it could be done.

I’ll also say that there’s a lot of concern in the markets about sales of MBS. We’ve bought a lot, and we’ve been the dominant player in the market. The market is concerned about adjusting to our not being there as a steady purchaser, and I think the idea of our being there as a net seller of MBS is a concern to some. So while all of these strategies are possible, I think we’d have to be very careful about what we were trying to achieve and make sure the market understood it.

MR. LOCKHART. A second question, if I may. According to slide 30, if I understand it correctly, a great majority of respondents believe that we would start tightening the fed funds rate target while we have relatively high levels of excess reserves. How are they thinking and how are you thinking about how the fed funds rate market works in the condition of high reserves?

MR. SACK. Again, we didn’t get into that level of detail. I think the presumption would be that they understand that interest on excess reserves is a tool that can raise all short-term interest rates even with a large amount of reserves in the system. In this response, they’re implicitly saying that that mechanism will work, or at least that policymakers think it will work with a relatively high degree of reserves, or at least that policymakers will begin to tighten and see if it works.

MR. LOCKHART. So if we raise the interest rate on excess reserves, the fed funds rate will follow to an extent.

MR. SACK. Right. I think that’s the general perception, although as I noted in the text, there’s a lot of uncertainty. If you look at panel 27, we know that with all of these excess reserves, the funds rate has been soft to the IOER rate. I think a real key policy question is: Is that spread steady? If that spread is steady—10 to 15 basis points—then it seems that policymakers have very effective control of short-term interest rates even with the amount of reserves indicated in the lower right panel. There's just no way to measure empirically whether that spread will be steady because we've only had this period of high reserves when we've been pinned up against the zero bound. So that is, I think, a key policy question.

CHAIRMAN BERNANKE. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. Just a quick question on slide No. 29. What do you guess that slide would have looked like before we began testing reverse repos as an exit strategy?

MR. SACK. I think your question raises a general issue about the fact that we're doing a survey with the firms we have been interacting with the most in terms of setting up the reverse repo program. There was some concern on our end about whether that was biasing the results in this direction. So, I think that argues for the wider survey.

Having said all of that, when we speak to market participants outside of the primary dealers, there's just an incredible amount of focus on reverse repos, and I am not sure why that is, relative to term deposits. So I think, broadly speaking, market participants really do expect reverse repurchase agreements to be a key part of the policy tools. Of course, in this response both reverse repos and term deposits are being used very actively. Reverse repos are a little bit higher, but they're both very active draining tools. It may be that asking the dealers puts a little bit more focus on reverse repos, but I'm not sure. I wouldn't want to say that this probably does not represent the broader review. I think that, if we could make an effort to find that out through a broader set of participants, then I wouldn't be surprised if it comes out similarly.

MR. FISHER. Thank you.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. First, just a follow-up on that last point. I think the dealers are focusing on reverse repos because that's what they hear us talk about most of the time. We haven't talked as much publicly about the term deposits or asset sales. So I think we sort of get back from them what we say at times, and we have to be a little bit careful interpreting that, just as an observation.

On redemptions and so forth, I tend to think we are going to have to shrink our balance sheet, and I think your memo very effectively focuses our thinking about the optimal size of our balance sheet and how we want to think about that. We have walked up to this question over and over again over the last year and a half and really haven't come to grips with what the answer is, but this sort of raises that question foursquare, and I think it's important that we think about that. I think the direction going forward is that the balance sheet is going to get smaller rather than larger, so I'm in favor of letting them all run off. In terms of Treasuries, I do think at some point, as the Chairman's comment suggested, if we get back to a SOMA portfolio that looks more like it used to look, we're going to have to start substituting short-term for long-term. I don't know that we need to do that initially, but certainly that would be a possibility.

Back to the sequencing—again, I think these things interact with one another. We have two other things affecting the overall balance sheet. One is the runoff in the liquidity programs. Another issue, which we haven't returned to, is the SFP. What's going to happen to it? Is it going to come back? How is that going to effect our balance sheet? And how would that interact with all of this? So I think there's a whole complex set of interactions that we need to be thinking about. That's why I commented earlier about the need to discuss our views on how we implement policy going forward, sort of a new steady state. How we get to that steady state is combination of these things. I don't think we can think about them in isolation.

So, if you have got some observations about the SFP, I'd love to hear them, too.

MR. SACK. First, let me respond to your point on communications about reverse repos versus other tools, such as asset sales or the term deposit facility. I think in part that has been a result of the timing. The reverse repo tool for the Treasury and agency collateral, at least, has progressed more quickly, and we wanted to go ahead and test it. So you do have a situation where we've had more communications about that. I think we'll see—and Jim Clouse will talk about this—more communication on the term deposit facility going forward, and so some catch-up in that regard.

On the SFP, I thought the survey results were interesting. Roughly speaking, half of the respondents thought it would just stay at $15 billion, and the other half thought it would be ramped back up to $200 billion. Our thinking was that, with an adequate increase in the debt limit, which as of yesterday we thought we were probably going to get, SFP would run back up to $200 billion over a relatively quick time frame—four to six weeks—and to a point where we had a nice, evenly spaced maturity distribution that would then just roll over and keep that size. More recently, it looks like the debt limit may be raised by a much more limited amount, only enough to provide room for several months, in which case it would be very hard to run up the SFP because it would immediately have to be run back down. But I think that, absent that constraint, our inclination is to have Treasury run the SFP back up, and that obviously would keep it as a policy tool that could be used if needed at some point in the future. There's no reason $200 billion is the right number, but I think that decision would have to be made in conjunction with our assessment of the effectiveness of the other tools in terms of getting reserves out.

MR. PLOSSER. But I think that's why this is important. The SFP got run down on us, which was implicitly an increase in our balance sheet, and in excess reserves that we did not necessarily elect to have happen. The discussion earlier on this was that it was going to come back up again. What I hear is that it may not go back up, which, in my view, would strengthen the case for letting some of these other things mature and run off, as opposed to reinvesting them, because excess reserves are already higher than we thought they would be in the initial go-around of asset purchases.

CHAIRMAN BERNANKE. A lot depends on where you think our policy is working. If it's working on the asset side and the amount of MBS we buy is what really matters, then the amount of excess reserves is just kind of a residual, and it's not doing much independently.

MR. PLOSSER. Fair enough.

CHAIRMAN BERNANKE. But there are a number of different ways to think about it.

President Hoenig.

MR. HOENIG. Thank you. Mr. Chairman, this question is more for you. Your comment at the outset and then President Plosser's reaction to it was describing a discussion that would take place in January. I'm not clear on how you are outlining the policy discussion that might take place in January versus perhaps now, and if you could clarify that for me, that would be helpful.

CHAIRMAN BERNANKE. Sure. I was just responding to the comment myself, but there are two separate questions. One question is how accommodative policy should be, and that has to do with the outlook for the economy and inflation and so on. But there are also what you might call the technical questions, and, in particular, given that we want to unwind accommodation, what would be the appropriate sequencing in terms of the tools that we use. Should we, for example, drain reserves first and then raise the interest rate on reserves? If we drain reserves first, which particular tools should we use and in what combination? President Plosser pointed out that that's also linked to the question of what our official target is. We may simply want to announce that we are raising the interest rate on excess reserves and make no comment whatsoever about the federal funds rate, because the control of the federal funds rate may be loose and may not be that meaningful an interest rate, given the nature of that market now.

So again, I want to separate the question of when and how quickly we should be removing accommodation from a more technical set of questions about whether there is a preferred sequencing or combination that is in some sense independent of the policy decision itself. There may not be. It could be that those two things are so intertwined that we just have to decide on them jointly, but it is certainly worth the discussion.

MR. HOENIG. I agree. I would assume that we could at this meeting hint about our preferences as we look forward to January, because of the very developments that are taking place now in the economy, and not just wait until January for their discussion.

CHAIRMAN BERNANKE. No. I'm sorry. I didn't mean to prohibit discussion, but what I was saying is that, to the extent that there is a technical question, it would be useful to have some staff input and a chance to think about it in advance.

MR. HOENIG. Absolutely. I agree with that. Thank you.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. I'll pass. Honest. [Laughter]

CHAIRMAN BERNANKE. President Pianalto.

MS. PIANALTO. Thank you. I think this follows up on the point about the meeting that we'll have in January to discuss tools and sequencing. Brian, on your chart 27, my staff had conducted a similar analysis. They used the dates from December 2008 through current period and found that there is a closer correlation between the effective fed funds rate and interest on reserves when excess reserves are under $800 billion. It is not as clear on your chart as it was on the chart that my staff prepared. Is this a useful analysis as we start to think about the tools and sequencing? When excess reserves are closer to $800 billion, will the interest on reserves then be a more effective tool?

MR. SACK. That sounds right. I actually took this chart from some work being done by Jamie McAndrews and other staff at the New York Fed. And I know there is similar work going on at the Board and probably a number of other places. That work tried to fit a demand schedule through here, and it's a nonlinear demand schedule. As you suggest, it has more elasticity at lower levels of reserves and then flattens out. That work has a lot of other interesting results, including looking at whether GSE balances have a special effect relative to the overall level of reserves. So I would expect, hopefully, that some of that work will be presented in whatever material is prepared for the next meeting.

CHAIRMAN BERNANKE. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. Brian, what is the Desk's position, if any, on the effect of the term deposit facility and reverse repos on short-term interest rates? Suppose we start running a term deposit facility. What kind of effect do you foresee that having on the level of short-term interest rates? Or is it just going to be totally disconnected, or do you think there is going to be some pass-through or what?

MR. SACK. I think one thing it clearly does is pull reserves out of the market—less reserves available for overnight lending means you'll bring short-term interest rates up. That's exactly what's shown in exhibit 27, that is, the idea that those tools could be used to get to a lower level of reserve balances and bring these other short-term interest rates up closer to and maybe more connected to the IOER rate. I think that's the main effect.

One question we wrestled with, especially with reverses, is whether there's an independent effect, a direct effect, on RP rates. If we drain $300 billion of reserves by dumping a bunch of collateral into the RP market, do we not only get the effect in exhibit 27, but do we also get further upward pressure on the RP rate from that collateral? I think we see that as a possibility—that is, you could actually get some further upward pressure on RP rates relative to overnight rates. I think that would tend to be transitory, but certainly if that collateral were dumped quickly that could happen. But generally speaking, and over longer periods of time, we think the main effect comes via affecting the amount of liquidity available in the overnight lending market, in which case draining enough liquidity tends to pull rates up towards the IOER rate.

MR. KOCHERLAKOTA. So you're not worried about these programs basically being an influence on short-term interest rates beyond the IOER rate. That's what I would be concerned about. You're just saying we are moving the fed funds rate closer to the IOER rate. That's fine with me. I'm more worried that they're going to be a separate influence on short-term interest rates beyond the IOER rate.

MR. SACK. Well, I think at some point, if the size is large enough, then, yes, you could pull short-term interest rates above the IOER rate. I'm making an assumption that the size of these programs will be calibrated to some objective, whether that objective is getting the other rates around the IOER rate or not. So the size will be endogenous to the framework that the FOMC lays out.

MR. KOCHERLAKOTA. Well, the description of the TDF involved an auction, so sometimes it can be hard to know exactly what price you'll get out of that, I would guess.

MR. SACK. That's right. There's going to be analysis and judgment, but, of course, in the old days when we did temporary operations every day, there was always assessment and judgment about how much operations were needed.

CHAIRMAN BERNANKE. We will be hearing about the TDF in just a moment. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Brian, I just wanted to make sure I understand exhibits 19 and 20 and the effects of tapering. We're tapering now, and we've gotten some distance along that path. I guess these charts right below are meant to say that the effects have been minor, or there haven't been any effects, even though people in the market said, "Oh, you're going to back up these rates." Is that a fair assessment?

MR. SACK. Yes, exactly.

MR. BULLARD. Okay. But, nevertheless, they think if we keep going, then you're going to get a big effect at some point in the future?

MR. SACK. That's right.

MR. BULLARD. Okay. So they're sticking to their story. [Laughter]

MR. SACK. They're sticking to their story.

MR. BULLARD. And we're going to watch it, because we're going to be tapering for another 90 days or so.

MR. SACK. That's right. Our purchases have declined, but conditions in the market have been very tight. It's not just that the assets didn't cheapen, but they have actually richened in terms of the spread narrowing further. So we haven't seen any signs of what we and the markets worried about as we backed away from this.

Now, there are a lot of things going on in markets. There's not a lot of supply coming into the market. We are approaching year-end, and so on. So we'll wait and see. But so far, there are no signs that there is any increase in rates from our pulling back.

MR. BULLARD. Okay. So I have just one question on the survey. You say, "selling assets." Well, what do you mean "selling assets?" If you say you're going to dump $1 trillion worth of MBS onto the market, yes, that's going to have a big effect. But if you sell it in some measured way that makes sense, then it seems like these are the right pictures to be thinking about—a first pass at how that would happen.

MR. SACK. Yes. In my view, a big chunk of the question about asset sales is: Can we do them in a way that doesn't cause a sharp backup in rates, whether that's a pre-commitment to a gradual sales pace, or whether it's building in some kind of state responsiveness to interest rates, or whether it's other approaches? The staff is trying to think about these issues—that is, what mechanisms could we use to sell assets safely? It may be that there is no way to do it convincingly, and the only way to shed assets is to do it through redemptions, and that would be fine. But I think we at least want to think through all of the options and assess whether there is some approach where we could basically get the effects—the same kind of gradual winding down in the portfolio you would get under redemptions—but that would give us more flexibility along the way.

MR. BULLARD. Thank you.

CHAIRMAN BERNANKE. Other questions? President Lacker.

MR. LACKER. I changed my mind. [Laughter] The day we announce that we're going to sell assets, there's no doubt that prices are going to change. So I don't think "no price change" should be the standard of safety, right? We want to minimize the volatility of the path that prices take to where they're going after the shift of our policy, represented by the announcement of a path of asset sales. Is that right? I mean, you're using the word "safely." I'm sort of inquiring about your meaning of the word "safely" here.

MR. SACK. Okay. What I meant, but you can correct me, was not producing a large backup in rates. I guess I was working under the assumption that an abrupt and sizable increase in long-term interest rates would be viewed as counterproductive at this point.

MR. LACKER. But is it obvious that any backup in rates on MBS would be counterproductive? There's some threshold we might want to achieve—right?—because the data all suggest that we're pushing them artificially low.

MR. SACK. The data suggest we've pushed them low. We do think the LSAPs have worked, and it is just an optimal policy decision about how quickly you want to unwind any of those effects. We can put this differently: A challenge with asset sales perhaps is that there will be a tendency for the markets to front-load all of the effects. When we did LSAPs, you saw an immediate and sizable market reaction; then a lot of the program was carrying through the commitment to justify that reaction. I think policymakers need to be concerned about those same patterns taking place in reverse. So that's the issue: Is there a way to unwind the portfolio slowly to limit that immediate reaction?

CHAIRMAN BERNANKE. One would think that clarity about what you're going to do—speed or price or whatever—would help.

MR. LACKER. Yes. Absolutely.

CHAIRMAN BERNANKE. President Rosengren.

MR. ROSENGREN. Just to follow up on that point, it seems like you have a huge inventory, and the market doesn't know how you are going to dispose of it. Asking the street about what the interest rate reaction would be—if at every meeting we might potentially dump a whole lot of it, I would want a huge risk premium before I bought that asset. So, as we think about asset sales, and different rules for handling them, it seems that if there's a clear rule, it may have a different effect on the risk premium than the possibility that every six weeks you may or may not have a huge inventory dumped onto the market. We haven't had an experience like this, so I don't know how you can measure it empirically. But to the extent that the dealer community has any feel for this, it may be worth getting some sense about interest rates as well as quantities when you do your survey.

MR. SACK. Okay.

CHAIRMAN BERNANKE. President Plosser.

MR. PLOSSER. One quick question, Mr. Chairman. You may have alluded to this, but are we going to take an action on whether or not we want to do the redemptions?

CHAIRMAN BERNANKE. My understanding was that tentatively, for the moment, we were just going to let things run off. But we were just introducing this as an issue we need to be aware of.

MR. SACK. Correct. I think that strategy is consistent with the current directive, so I don't believe any action is necessary.

CHAIRMAN BERNANKE. Okay. Vice Chairman.

VICE CHAIRMAN DUDLEY. I just want to add that the issue on redemptions, though, is also colored by what you want the portfolio to look like in the longer run. Let's say we start with a portfolio that was bills, notes, and bonds, and was roughly in proportion to the market; but it's not clear that that's necessarily the portfolio that we want in the new world as we transition to a new monetary policy setting. That decision on redemptions is partly about balance sheet size, and it's also partly about where we want to take the portfolio over the medium to longer run.

CHAIRMAN BERNANKE. Great. Okay? If there are no other questions, let me turn to Jim Clouse and Bill Nelson for a brief report on some facilities. Jim.

MR. CLOUSE. Following up on the plans discussed at the last meeting, the Desk carried out a series of small-scale, real-value reverse RP operations over the intermeeting period to identify any operational difficulties in moving cash and collateral between the Federal Reserve, the clearing banks, and the primary dealers. Before conducting the operations, the New York Fed released a statement announcing that a series of such operations would be conducted and emphasizing that they had no implications for the stance of monetary policy. Five such operations have been conducted with both Treasury and agency debt securities serving as collateral. The maturities for these operations ranged from overnight to eight days, including some with overlapping terms. The operations were quite small—the maximum outstanding over the last two weeks was only about $400 million—and, as anticipated, had little or no market impact. All of the operations were conducted, settled, and matured successfully. A few minor technical issues surfaced and are being addressed. In short, the tests confirmed that the System now has the capacity to conduct triparty reverse RP operations effectively with primary dealers using Treasury and agency debt as collateral.

The staff continues to work on extending the reverse RP program to include agency MBS as collateral and to include a broader set of counterparties. Regarding the extension of collateral to include agency MBS, the staff has been working with the two triparty clearing banks and the agency MBS custodian to determine the most efficient, cost-effective means of reversing out agency MBS collateral. Significant complications must be addressed in this effort, but the team expects to reach agreement on an overall approach in the near future and to give the clearing banks the go-ahead to make the necessary system changes within the next month. We expect that those changes will be implemented by the end of the first quarter of next year and that small-scale, real-value test reverse RP operations with agency MBS can begin shortly thereafter.

In terms of expanding the range of counterparties for reverse RP operations beyond the primary dealers, the Desk has identified a set of large cash providers and has begun discussions with some of these firms on a number of operational issues. In addition, the staff is working to develop a set of public criteria that will allow a small number of large firms, perhaps two dozen, to present themselves as potential counterparties. Both of these efforts are proving quite challenging given the wide range of institutions involved. The staff is pursuing this agenda aggressively, but our best guess at this point is that the expansion of the range of counterparties will require several months for completion.

Turning to other work on reserve management tools, the staff has developed a proposal for a term deposit facility, the basic elements of which were summarized in a memo distributed last week. As envisioned in the proposal, term deposits would be a new type of account offered by the Federal Reserve to any institution that is eligible to earn interest on balances at a Reserve Bank. Balances placed in term deposits would not be eligible to satisfy reserve or clearing balance requirements or to cover daylight or overnight overdrafts. As a result, balances placed in term deposits would drain reserves. The proposal suggests that term deposits would be fixed-rate obligations and could have maturities ranging between one and six months with no early withdrawal option. As required by statute, the rate paid on term deposits could not exceed the general level of short-term interest rates. Consistent with the Federal Reserve's general policy of accepting as collateral any sound asset that a bank may hold, the proposal suggests that term deposits could be pledged as collateral to secure borrowing at the discount window or daylight credit.

The staff proposal notes that term deposits could be offered to the public in several ways but focuses largely on the possibility of auctioning term deposits. Auctions of term deposits would employ a single-price format so that all winning bidders receive the highest rate among all winning bids at the auction. Auctions would be conducted at regular intervals, perhaps every two weeks, and the settlement dates and maturities of the deposits could be aligned with the beginning of reserve maintenance periods. The proposal suggests that the Board would select one Reserve Bank to act as the term deposit offering administrator for the System. The offering administrator would be responsible for tasks such as announcing term deposit auctions and posting auction results to a public website.

The staff proposal would seek public comment on three basic questions: the need for limitations on the amount of term deposits that any individual institution may hold or win at auction; the appropriate range of maturities for term deposits; and whether there are any alternative structures for term deposits that should be considered. After review by the Board, the staff proposal would be published in the Federal Register with a 30-day public comment period. Based on the comments received, a final proposal would be published early next year. As noted previously, the automated systems necessary to implement a term deposit program have been developed and tested, but a number of operational steps must be completed before the program can be implemented. The staff will be working aggressively to complete these steps over the next few months. Bill will now continue the staff presentation.

MR. NELSON. Thank you, Jim. I will briefly update the Committee on the modifications to the terms on the Term Auction Facility and primary credit programs that the staff anticipates it will propose over the next several months.

The TAF auction that was conducted yesterday was again substantially undersubscribed. When it settles on Thursday, TAF credit will equal $76 billion, 45 percent lower than at the time of the November FOMC meeting. All currently outstanding TAF loans will come due coincident with the January TAF auction. At that point, only 28-day TAF credit will be provided. Although only $75 billion will be auctioned in January, it seems likely that it will again be undersubscribed because of the steep downward trend in TAF credit and because the year-end will have passed.

In light of the continued improvement in interbank funding markets, as discussed at the November FOMC meeting, the staff expects that it will soon recommend the Board announce a schedule of TAF auction amounts that decline to zero. The staff will propose a specific schedule after observing the results of the January 11 auction. If the auction is again substantially undersubscribed, the staff could propose amounts that decline to zero in just a few months, but evidence of stronger demand could lead us to recommend an auction schedule that declines a bit more slowly, say, to zero by midyear.

Turning to primary credit, primary credit declined 14 percent over the intermeeting period to $19 billion. Of that amount, $14 billion is outstanding to Depfa, and $4 billion to Dexia, which are both branches of European banks.

On November 17, the Board announced that the maximum maturity on primary credit loans would be reduced to 28 days on January 14, a first step in normalizing the terms on primary credit. That change will align the maximum term on primary credit loans with the terms of TAF loans. A next step in normalization could be a 25 basis point increase in the primary credit rate. The discount rate adjustment could be discussed by Board members and Reserve Bank Presidents at the January FOMC meeting, with any increase announced a few days later, presumably accompanied by language that made it clear that the move was not a signal about the outlook for the stance of monetary policy. The staff envisions that Presidents might initiate discussions with their boards of directors about a potential increase a week or so before the January FOMC meeting.

A further step in normalization of primary credit terms could be a reduction in the maximum maturity to overnight, except for the smallest institutions. The Board and Reserve Banks could evaluate early next year the advisability and potential timing of such a move.

> Consideration about further increases in the primary credit–federal funds rate spread could be deferred until perhaps midyear to evaluate such further adjustments in light of accumulated experience with a 50 basis point spread and shorter terms.

That concludes our prepared remarks. We would be happy to answer your questions.

CHAIRMAN BERNANKE. Are there questions for Jim or Bill? President Lacker.

MR. LACKER. Yes. Could you elaborate on what discussions with our directors you envision in January?

MR. NELSON. Discussions about the increase in the discount rate.

CHAIRMAN BERNANKE. We'll need a recommendation.

MR. LACKER. I see.

CHAIRMAN BERNANKE. It's been a while.

MR. MADIGAN. But our view is that this is obviously a sensitive topic, so it might be better to hold off on that for several weeks.

MR. HOENIG. Rather than in this meeting?

MR. MADIGAN. Right. No, I'm sorry, I'm talking about discussions with the boards of directors.

MR. HOENIG. With the boards of directors—I understand.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I have a question on the term deposit facility. One of the provisions is "no early withdrawal," but another provision is "you can be pledged as collateral at the window." Those seem to be in conflict.

MR. CLOUSE. Both of them would give some potential for accessing liquidity. I personally wouldn't characterize it as being in conflict. It was a fine judgment on whether we should allow these to be pledged as collateral at the discount window, but the Federal Reserve has a long-standing policy of taking basically any asset that a bank can hold as collateral. As long as the pricing for the primary credit program is correct, as was pointed out at the last meeting, actually, there wouldn't be strong incentives for an institution to pledge collateral at the primary credit facility in order to invest it in a term deposit. We would ensure that that sort of arbitrage was ruled out. And, of course, there's lots of stigma around borrowing at the discount window, too, so the option value of that is probably not that high.

I view it, anyway, as sort of a technical thing. Banks already have over $1 trillion worth of collateral pledged at the discount window. They could do anything they need to at the primary credit window with any other form of collateral. So there's nothing really special about the term deposit facility allowing them to pledge those particular deposits as collateral. It's just to be consistent with our existing policy.

MR. BULLARD. Well, you might turn that around and say, "Then, why have a 'no early withdrawal' provision?"

MR. CLOUSE. Well, an early withdrawal option is, first of all, tremendously complicated to develop in the automated system. The automated system has been developed, and, to put in that feature, would really greatly complicate things. In addition, you have to worry a lot about where you set the penalty to guard against very frequent usage of that option. So if you wanted to provide some capability for these institutions to access liquidity, it just seemed a lot more natural to keep access to liquidity in a facility where we understand exactly how things work. And, as you know, we don't anticipate, especially as we move to normalize the program, that institutions will be regularly using the primary credit facility. But I would say, too, that it will be interesting to review comments on this from the public

MR. BULLARD. Is this the comment period for the Committee?

CHAIRMAN BERNANKE. Go ahead. We don't have this unstructured period, so consider this to be your time to comment.

MR. BULLARD. Okay. One of the aspects of the TDF is, "well, now we're going to drain reserves." How meaningful is it to say that I've got an overnight deposit at the central bank versus I've got a 30-day deposit at the central bank, one of which I'm going to count as reserves and in the monetary base, and the other of which I'm not going to count in that? It seems to me the macroeconomic difference is very slight.

CHAIRMAN BERNANKE. Well, you can't lend the 30-day money in the overnight federal funds market.

MR. BULLARD. There's a question about how liquid it really is, but it seems that it's very substitutable. I can wait 30 days and take it out.

MR. LACKER. Mr. Chairman?

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Is it useful to consider alongside that question, President Bullard, the question of how a term deposit compares in liquidity with an equal term Treasury holding, which is equally collateralizable, and, thus, equally liquid, but we consider a nonmonetary asset?

MR. MADIGAN. Indeed, the TDFs would be less liquid, because they can't be sold.

MR. LACKER. Right. They're nontransferable. There you go. It's even less liquid than T-bills.

MR. BULLARD. There's variable liquidity among various assets, and you should have metrics about the degree of liquidity, and then get your measure of how much liquidity is out there, instead of arbitrarily saying certain assets are liquid and others are not.

CHAIRMAN BERNANKE. For the reasons that you just described, I think it will be helpful in managing overnight interest rates. Of course, there's always the question about the linkages between that and broad financial conditions, but our typical target is the overnight rate.

MR. BULLARD. Do we expect the interest rates in this facility to be anything other than the expected interest rate on reserves over the six months? Plus a term premium.

MR. CLOUSE. The staff proposal envisions largely an auction facility to offer these deposits, and you might expect, then, that the auction rate would stop out somewhat below a comparable term money market instrument, for example, maybe a little bit below LIBOR, reflecting the fact that we're a risk-free counterparty rather than a risky counterparty.

CHAIRMAN BERNANKE. Other questions? President Rosengren.

MR. ROSENGREN. Just a question on the primary credit rate. We all have directors meetings at different times. So if it's purely a technical adjustment, it might be better to have a day that we all called our boards of directors at the same time. I'm just a little worried that somebody might have a directors meeting in the first week of January, and though I know this is supposed to stay confidential, it might start leaking out. So it just strikes me that it would be better if we could just say on a certain day you will call your board and everybody talks about it as being a technical adjustment, if that's truly what we think it is.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Yes, I was just going to suggest that. I think the record is that rate change requests from Reserve Banks have not leaked—I don't know of any example of rate requests that have leaked. I do think a little more formal coordination might be useful, in that, going into our January meetings, we'd know that we're getting the wink that the Board is likely to approve this technical adjustment.

CHAIRMAN BERNANKE. We'll coordinate. And we don't need recommendations from all the Banks, of course, but just one. We understand the need to coordinate this in a way that is not going to create problems. Thank you. President Pianalto.

MS. PIANALTO. It might also be a good time to remind directors. There was one occasion when it was leaked, and it was a federal crime. So it might be an appropriate time to remind directors, as we do all the time, that any discussion of the discount rate is confidential, and if there is a leak, it's a federal offense.

CHAIRMAN BERNANKE. Well put. President Plosser.

MR. PLOSSER. I'd like to follow up a little bit on the TDF, because I'm still uncomfortable with the potential for arbitrage between it and primary credit. Jim, do you envision that the TAF will shut down before TDF becomes active?

MR. CLOUSE. That seems likely, given the market's expectations.

MR. PLOSSER. Otherwise, I can imagine a bank lending to us at one rate and getting the TAF credit at 25 basis points, which is borrowing backed by posting TDF collateral. It looks as if you're going to cap the auction rate at the primary credit rate.

MR. CLOUSE. Well, we'd want to be sure that it couldn't go higher than the primary credit rate, for sure.

MR. PLOSSER. Because otherwise you are inviting them to game the system. But if the term premium is not high enough, then that sort of enters into what maturities you're going to offer, whether the term premium for six months or a year would be so large that you couldn't cap the TDF rate at the primary credit rate—that is, the spread wasn't big enough. So I'm just really puzzled about how all of this is going to sort itself out, and whether or not this is really going to be effective at draining any reserves at all.

CHAIRMAN BERNANKE. There's always some primary credit rate spread that's big enough that you can slip anything you want to underneath it.

MR. PLOSSER. Right. But that spread will partly depend on what the range of maturities are that we offer at the TDF. The longer the maturity, presumably the higher the premium, and whether we've got the spread high enough to cover that would be something that we would have to sort of work on, I would think, in order to make it work.

Will that end up raising interest rates? President Kocherlakota was talking about this. Do these tools affect interest rates in some sense? Is this just a backhanded way of raising rates, which we might as well raise anyway? I'm still a little uncomfortable with how this is actually going to work and whether it's going to do what we think it's going to do.

CHAIRMAN BERNANKE. This is great monetary economics. [Laughter] You can have such a great graduate class.

MR. PLOSSER. Yes, right. If I live that long. [Laughter]

CHAIRMAN BERNANKE. Other questions? President Kocherlakota.

MR. KOCHERLAKOTA. Yes. I'm going to follow up on some of the things President Plosser was saying. What we could do is raise the interest rate on excess reserves; we could offer this term deposit, which strikes me as like offering a certificate of deposit, a CD, to a bank, and they can lock in their funds—that's offering a high interest rate on a particular kind of illiquid asset; or we could sell off MBS, but we're worried about raising the rates there. So I guess we're going to defer all of this until January, and we'll sort it all out at that point. But there is this question about which interest rate we're going to be manipulating at a given point in time. I'm not seeing clearly why this is the right interest rate to manipulate as opposed to the

IOER rate or just selling agency MBS. That's the part I'm not following. But, again, maybe this will be cleared up in January.

CHAIRMAN BERNANKE. I don't want to interject, but I think there are two ways to look at it. One is just to say the IOER rate, which is an overnight rate, is the basic tool, and we just have all of these fine-tuning instruments to make sure we don't have too much slippage between the market rate—the federal funds rate—and the IOER rate. That's one approach, and I think that's the simplest approach. The other way, though, is to say, well, we really have tools that can affect things at different parts of the term structure or different types of instruments, and we can play with that if we want. That gets more complicated and it makes policymaking more complicated. So I don't know how far we want to go in that direction, but I think there are at least two ways to look at that.

MR. KOCHERLAKOTA. Just to follow up—if I'm a bank, why would I put my reserves into this account unless it paid a higher interest rate than the IOER rate? Because it's less liquid.

CHAIRMAN BERNANKE. It will.

MR. KOCHERLAKOTA. Okay. So, at least as far as I can see, it's not just fine-tuning that gap between the fed funds rate and the IOER rate. It's actually playing with the various aspects of the term structure in some fashion. And maybe that's the right way for us to proceed.

CHAIRMAN BERNANKE. Market operations are swaps of assets for assets. We're swapping reserves for deposits. President Evans.

MR. EVANS. Something about President Plosser's question made me think about stigma. Jim, you mentioned this, too. If you were a bank, and you had these term deposits, and then something happened and you went to the window—which is just a normal type of thing—

would you be worried? In the old days, if we were worried about arbitrage, then the supervisor would make a phone call. It seems that we would have to be very clear in mentioning that it would still be okay to access the window under the right conditions, and that you wouldn't get a call from the supervisor. Or, if they're worried about that, then they might just not bid on the term deposits, and it doesn't amount to anything. It might be a little tricky.

CHAIRMAN BERNANKE. Yes. We left that old regime, of course, when we moved the discount rate above the funds rate.

MR. EVANS. Right. That's why it's okay. Of course, they still don't borrow. At some point, Jim mentioned that stigma is our friend—I wrote that down—or at least that it could help us with something. But we think that stigma will make this arbitrage go away. It's just something to think about.

CHAIRMAN BERNANKE. Any other questions? [No response.] I could press on just a bit more. Our friend Dave Stockton is a victim of H1N1 flu virus. David Wilcox has stepped into the breach, so let me turn it over to David.

> MR. WILCOX. Thank you, Mr. Chairman. I will be delivering remarks this morning that were, for the most part, prepared by Dave Stockton, who can't be with us today, as the Chairman mentioned, because of illness. I should note that such circumstances may have little historical precedent. My colleagues and I have now completed an exhaustive search of the National Archives, checking all the critical original source material, and found no instance in which Robin had to clean up Gotham City on his own because Batman was indisposed; and no mention of Tonto ever having to face mortal peril by himself because the Lone Ranger was back at the ranch recuperating from the latest flu pandemic. My colleagues in Public Affairs often emphasize the importance of expectations management, so in that spirit, I have set myself the bar of hoping that today's proceedings go better than when Captain Edward Smith asked First Officer Murdoch to take a turn at the helm of the Titanic [Laughter.] Now turning to Dave's remarks—I am speaking in Dave's voice:
>
> I'd like to do three things this afternoon. First, we have received an unusually large slug of data since the close of the Greenbook, so I will provide a brief update on the near-term forecast. Second, I'd like to summarize our take on where we are in the

recovery process at present. And finally, I will point out what we see as the major sources of uncertainty surrounding the economic outlook.

Since we published the forecast last Wednesday, we have received readings on retail sales, merchandise trade, inventories, consumer sentiment, industrial production, and producer prices. The retail sales data for November were right in line with our projection. As you know, we had been rather skeptical earlier in the fall when the consumer spending data began to show improvement. We thought declining employment, weak incomes, sour sentiment, and still tight financial conditions should be exerting greater restraint on spending than implied by the incoming data. However, some of that tension was reduced by the sizable upward revisions that the BEA made to its estimates of labor income in the second and third quarters. Those revisions suggest that the recovery in consumer spending is on a firmer footing. Last Friday's reading on consumer sentiment from the Reuters/Michigan survey showed a further modest improvement that also is consistent with the pickup in spending that we have witnessed of late. All told, we now estimate that real PCE increased at an annual rate of about 2½ percent in the second half, no different from our forecast of last Wednesday, but about ½ percentage point faster than our October forecast.

We also received data on retail inventories late last week. Retail inventories outside the motor vehicle sector ran off at a slower pace in October than we had expected, adding a couple of tenths to our forecast of growth in real GDP in the current quarter. And the somewhat stronger-than-expected figures for exports in October reported in last week's release on merchandise trade also added a couple of tenths to current quarter growth. Nathan will have a bit more to say about that in a few moments. Taken together, the inventory and trade data would lead us to revise up estimated growth in real GDP in the current quarter to an annual rate of about 4¼ percent.

Earlier today, we published our first estimate of industrial production in November. Total IP increased an estimated 0.8 percent last month, while manufacturing output rose 1.1 percent. We pride ourselves on cultivating a high degree of collegiality in the Division of Research and Statistics, so it comes as no surprise to find out that we had built a pretty good forecast of these results into last week's Greenbook [laughter]. All told, and notwithstanding the downbeat tone to the December Empire State Manufacturing Survey that was released this morning, the industrial sector remains on track for a second consecutive quarter of 6+ percent rate of growth, thus beginning the process of digging out from some very steep earlier declines.

This brings me to the second issue that I wanted to touch on this afternoon, which is, given all that we have seen in the past six weeks, where do we think we are in the cyclical process? These could well prove to be famous last words, but I believe that the accumulating evidence supports the view that a moderate recovery is under way and, indeed, that the recovery is gaining greater traction. Not only have we seen an acceleration in aggregate output, but the composition of that acceleration seems favorable for activity going forward. Importantly, domestic final sales are firming. The key elements of that firming include a recovery in housing, the aforementioned turnaround in consumer spending, and a stabilization in spending on capital goods. Moreover, exports are getting a boost from the improvement in global activity. And with the overall prospects for sales looking brighter, businesses appear to be lifting production further in order to slow the runoff of inventories.

Finally, we are now seeing more encouraging—albeit still tentative—signs that the deterioration in the labor market is abating. Declines in private payrolls averaged 90,000 per month over the past three months. That compares with job losses that were averaging about 700,000 per month earlier this year and were still running at about 425,000 per month at midyear. Other indicators that labor market conditions are beginning to turn include an upswing in temporary help employment in recent months and a jump in the workweek in November. And since the November survey week, initial claims for unemployment insurance have continued to drift down.

While the probability that we have entered a self-sustaining recovery appears to have increased appreciably, considerable risks continue to attend our forecast. One risk that has been highlighted by the recent data is that of a sharper acceleration of activity, driven in part by a more rapid attempt by businesses to halt a further runoff of inventories and perhaps even add to stocks. The book value inventory data that we have for October show a small accumulation of stocks in the manufacturing and trade sectors after a long period of huge liquidations, and a sharp rebound in activity caused by a swing in the inventory cycle has been a feature of some previous, more V-shaped recoveries. In our forecast, we have assumed that the positive figure for October overstates the underlying upswing, and we have penciled in further moderate declines in inventories for the remainder of the quarter. We have done so because we just haven't seen or heard much that would indicate that a substantially greater snapback in inventory investment is providing a major lift to production. The national and regional purchasing managers' reports point to ongoing increases in factory output, but moderate ones—not a sudden or sharp pop in activity. And my reading is that the reports given in the Beige Book do not seem consistent with an inventory-led surge of major proportions in production.

But if we are misreading the situation and the liquidation of inventories is coming to an end more abruptly than we are projecting, then the growth of real GDP could easily outstrip our 4¼ percent estimate in the current quarter, and if past patterns were to prevail, we could see several quarters of outsized increases in real GDP. In the first instance, a faster turnaround in inventory investment would pull forward some of the growth that we have projected to be stretched out over the next couple of years. But greater near-term strength could beget stronger household and business confidence and spending, as well as a faster relaxation of the terms on which credit is being offered to households and nonfinancial businesses, all of which could amplify the effects on the growth of real GDP, the path of resource utilization, and price inflation. We will be monitoring these cyclical forces carefully in the period immediately ahead.

Despite the generally more favorable tenor of the incoming data of late, there remain considerable downside risks to the Greenbook projection as well. One prominent risk is that final sales peter out next year rather than accelerating further as we are forecasting. After declining at an annual rate of about 2 percent in the first half, final sales appear to be increasing at about a 2 percent pace in the second half, and we are projecting a 3 percent advance in 2010. Much of next year's acceleration occurs in spending for durable goods, especially business investment. In our view, improving cash flows, an ample stock of liquid assets, increasing confidence in the durability of the recovery, the release of some pent-up demand, and a further easing of financial strains should provide noticeable impetus to investment spending. But it is possible that we are too optimistic in our expectation of further easing of financial conditions, including the terms of lending from the banking sector, or we could be attributing too much staying power to the stimulus being provided by fiscal policy.

A second risk relates to the labor market. As I noted earlier, we have been encouraged by the recent data. But it is important to note that, to date, the smaller employment declines have principally been driven by a reduction in layoffs. As yet, we have seen few signs of a widespread pickup in hiring in readings from the JOLTS data, the NFIB survey of small businesses, or measures of help-wanted or job availability. We expect to see increasing signs of hiring in the months ahead as businesses grow more confident of the recovery. But anecdotal reports suggest that businesses remain very cautious. If that caution persists longer than we expect, hiring could remain weak and slack in labor markets could fail to recede to the extent we are projecting.

We made only very minor adjustments to our inflation projection this round. The incoming data on overall PCE prices were a bit above our projection. But the surprises were almost completely the result of a somewhat faster pass through of crude oil and natural gas prices to the retail level and higher than expected nonmarket prices, which we think have little signal content for underlying inflation. As a consequence, although we have revised up the projected increase in total PCE prices in the current quarter by ¾ percentage point to 2¾ percent, we have revised down the projected increase in the first quarter by nearly the same amount to about 1 percent. The increase in energy prices that was reported in this morning's PPI release surprised us to the upside, but in the past, producer prices for energy have been a pretty noisy indicator of developments at the retail level, so we are withholding judgment pending tomorrow's CPI release. Unlike PPI energy prices, the PPI for medical care does feed directly into the PCE price index, and these prices were a little *lower* than we had expected, shaving perhaps a tenth or two off our projection for core PCE inflation in the fourth quarter.

Looking beyond the near term, we revised up our forecast for core PCE prices by a tenth in both 2010 and 2011 to reflect somewhat higher projected import prices and a slightly smaller margin of slack. Reflecting these revisions as well as some change in the profile of energy prices, we lowered projected overall PCE inflation by a tenth in 2010 to 1.3 percent and raised the projection by two tenths in 2011 to 1.2 percent. Nathan will continue our presentation.

MR. SHEETS. The foreign economic recovery has continued to broaden and deepen. We now judge that real GDP abroad expanded at a 4¼ percent rate in the third quarter. The emerging market economies (EMEs) continued to lead the rebound, with growth strengthening in the third quarter to a 9 percent pace. Notably, the Mexican economy bounced back vigorously, as it shook off the restraining effects of the H1N1 virus and as automotive production there resumed. Third-quarter growth in emerging Asia stepped down from the 15 percent surge in the previous quarter but remained near 10 percent, as activity in the region continued to benefit from policy stimulus and the rebound in global trade. In the advanced foreign economies, real GDP growth turned slightly positive on average in the third quarter, after five consecutive quarters of contraction. But the bad news is that final domestic demand remained quite sluggish in many of these economies, including the euro area, the United Kingdom, and Japan.

Fourth quarter data suggest that growth in the EMEs is moderating to a more sustainable 5 percent pace, which we believe is likely to continue through the forecast period. We note that the vigor of the recovery in emerging Asia has kicked off rebounds in asset prices in the region and led to concerns that bubbles may be forming. While the city-states of Hong Kong and Singapore have seen marked increases in real estate prices, property prices in other Asian economies are flat or up only moderately, and forward-looking price–earnings ratios for equities are within historical ranges. Of course, we will continue to monitor this issue closely going forward.

For the advanced economies, we forecast that growth will strengthen from just under 1 percent in the third quarter to over 3 percent by 2011. We expect that private spending in these economies will eventually pick up, boosted by normalizing financial and credit conditions, improving economic sentiment, and the ongoing recovery in the United States. The possibility that private spending in the advanced economies might rebound more slowly than we now envision is an important downside risk to our outlook, both for these economies and for export-dependent emerging markets.

This month marks the 20th anniversary of the peak of the Japanese equity bubble, and policymakers there continue to struggle to find a formula that will allow the economy to shake off its sustained malaise. Japan was hit hard by the collapse in global trade during the crisis, but the country is now recording a strong rebound in its exports to emerging Asia, and its banks did not have the same exposure to toxic financial assets that has plagued many other advanced-economy banking systems. Nevertheless, the prospects for Japanese recovery remain quite uncertain. After an encouraging second quarter rebound, Japanese GDP growth slowed to a meager

1¼ percent pace in the third quarter. Private demand continues to be soft, held back by weaknesses in labor and housing markets. The recent strengthening of the yen is another source of restraint, and headline consumer price deflation intensified to a record 2½ percent in October.

Apart from our concerns about the apparent intensification of Japanese deflation, we expect that foreign inflation will remain well behaved through the forecast period, averaging around 2 percent per year. This projection is shaped by ongoing evidence that inflation expectations abroad are generally well anchored and by our view that economic slack will remain sizable in many countries, even at the end of the forecast period. In addition, in line with quotes from futures markets, our forecast calls for commodity prices to be relatively well contained going forward. Since your last meeting, the spot price of WTI [West Texas Intermediate] oil has fallen $10 per barrel, to about $70. A portion of this decrease was unique to WTI, but last week the prices of other grades of oil posted notable declines as well.

We continue to watch for signs as to when the foreign authorities will withdraw policy stimulus. On the fiscal front, new governments in Germany and Japan announced measures that should give some small additional support to their recoveries and that signal a continuing commitment to stimulative policies. However, the potential constraints on fiscal policy were underscored by the credit rating agencies' recent moves to downgrade Greek sovereign debt and to place Spain and Portugal on negative watch, in response to concerns about the sustainability of their respective fiscal positions. S&P [Standard & Poor's] yesterday joined Fitch in downgrading Mexico's credit rating to BBB, citing the country's diminishing oil production, failure to expand its narrow non-oil tax base, and diminished prospects for fiscal reforms during the second half of President Calderón's term.

As for monetary policy, the Bank of England increased its asset-purchase facility by £25 billion, and the Bank of Japan introduced a three-month lending facility. Although the European Central Bank announced plans to begin winding up its exceptional liquidity support facilities, markets seem to have pushed back a bit the expected start of monetary policy tightening by the ECB and other major central banks. Our forecast calls for the Bank of Canada to begin tightening policy in the second half of next year and for the ECB and BOE to follow suit in early 2011. We anticipate that the BOJ will keep its policy rate at 10 basis points through the end of the forecast period.

The foreign exchange value of the dollar fell through the month of November but has since rebounded vigorously on stronger-than-expected U.S. data. On net, the dollar is little changed since the last FOMC meeting. The dollar's moves against the yen were particularly marked, as it traded briefly in late November as low as 85 against the yen, prompting market chatter that the Japanese authorities would intervene to forestall further appreciation of their currency. The dollar subsequently rallied, closing above 89 against the yen, down less than 2 percent over the intermeeting period. The dollar also declined against the Korean won and the

Mexican peso, but moved up against the euro, the Swiss franc, and the Brazilian *real*. Relative to its peak in early March this year, the nominal broad dollar index is down 12 percent, but it still remains roughly 7 percent above its 2008 trough. Our forecast maintains the working assumption that the real broad dollar index will depreciate at roughly a 2 percent pace on average over the next two years.

Last week, after the Greenbook went to bed, we received the October trade data. Exports showed greater-than-expected strength; the gains were broad-based, but particularly large for capital and consumer goods. In response, we have marked up our projection for fourth quarter export growth by nearly 4 percentage points to a robust 16 percent clip. Imports also surprised on the upside, albeit to a lesser extent. The upshot is that net exports are likely to add ¼ percentage point more to GDP growth in the fourth quarter than we anticipated in the Greenbook, bringing their contribution to ½ percentage point.

Going forward, export growth should proceed at about a 9 percent pace through the next two years, stimulated by declines in the dollar and the ongoing rebound in foreign activity. Import growth is likely to be a bit slower, in the ballpark of 7½ percent, supported by the U.S. recovery but restrained by headwinds from the dollar. Because imports grow from a higher base, however, the contribution of net exports to U.S. GDP growth is expected to be roughly neutral over the forecast period. Thank you. That concludes our prepared remarks. We're happy to take your questions.

CHAIRMAN BERNANKE. Thanks. Are there questions for our colleagues? [No response.] Seeing no questions—

MR. PLOSSER. It's hard to know how to take that restrained enthusiasm in this report.

CHAIRMAN BERNANKE. Coffee awaits. [Laughter] One small item: We need to approve the domestic operations.

MR. KOHN. So moved.

MR. WARSH. Second.

CHAIRMAN BERNANKE. Without objection. All right. Why don't we take a coffee break and come back in about 20 minutes? Thank you.

[Coffee break]

CHAIRMAN BERNANKE. Okay. Why don't we recommence and begin our go-round? President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. We have had some heartening news since the last meeting. In particular, the employment report was stronger than most analysts expected, with the economy losing only 11,000 jobs. However, it is obvious, but still important, to emphasize that this is still moving in the wrong direction. As the recovery progresses, a good employment report will be one that adds jobs substantially faster than growth in the labor force, so we can make significant progress in reducing the unemployment rate and reattaining full employment.

The Greenbook has the unemployment rate at 9.6 percent at the end of 2010, with an assumption of no change in the federal funds rate. Unfortunately, my own forecast is quite similar. Initial claims for unemployment insurance remain quite elevated. We need to see a significant reduction in job loss and a marked increase in hiring if we are going to achieve net increases in employment that significantly exceed growth in the labor force. Other labor market trends highlight why the progress is likely to be slow in bringing the unemployment rate down. First, the fraction of employed persons working part-time for economic reasons is nearly at an all-time high for the series. Second, the workweek of production and non-supervisory workers remains low relative to non-recessionary periods. With many workers on a reduced workweek, or involuntarily on part-time work, many businesses will defer hiring new employees until their existing workforce is more fully utilized. Thus, even if GDP growth exceeds potential, as I expect it will over the coming quarters, this will likely reduce the unemployment rate only gradually.

Headwinds from the banking sector are also likely to continue to blow strongly. The percent of bank assets in institutions with low supervisory ratings continues to grow, and bank failures are artificially being held down by resource constraints at the FDIC. Given the volume of problem loans and problem banks, it is probably time to have a Resolution Trust Corporation to deal with failed bank assets. Recovery in commercial real estate will be delayed if the public and private sectors hold large inventories of problem commercial real estate loans in the hope that losses will be avoided through forbearance.

On the inflation front, there is little evidence of inflationary pressures. A variety of models used by the Boston Fed expect continued disinflation. For models that depend on resource slack, the very high unemployment rate relative to any reasonable estimate of full employment suggests further disinflation. However, recognizing the difficulties in measuring unemployment and output gaps, we have also examined models that emphasize the role of real marginal cost. Here, too, one would expect significant disinflation, because real unit labor costs have been falling dramatically and are currently at a postwar low. With double-digit unemployment, I don’t expect a quick reversal in real unit labor costs. Furthermore, our model suggests that, even in the presence of extremely well-anchored inflation expectations, the downward pull from resource underutilization may well outweigh the stabilizing effect of anchored expectations.

Thus, while the high-frequency data have clearly improved from earlier this year, they have not changed enough to significantly alter the outlook of an economy with very weak labor markets and a significant risk of further disinflation. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. The Eighth District business conditions are showing modest improvement, according to many business contacts. However, business leaders remain very cautious about the outlook for the economy. This is affecting business behavior with respect to capital expenditure plans for 2010, and it is also having a big effect on hiring plans. The cautious mood is typically attributed to three factors. One is weak demand for final products, although that aspect is improving modestly. The second is uncertainty over the scope and nature of national policy changes, as often cited by business contacts. One contact said in a meeting, "Tell me what the rules are; tell me what the tax rates are—I will proceed with business planning then and only then." The third factor is a residual pessimism concerning the direction of the economy over the next two years, worries that the economy simply will not recover as it has in the past—the idea is that something fundamental has changed in the economy and may not be in the process of repair.

Energy firms in the Eighth District report weak conditions in the U.S. Low energy usage and high levels of inventory accumulation are leading to continued cuts in hours in employment in that sector. In Asia, in contrast, the energy sector is very robust as we heard earlier in our report on the international conditions.

Large transportation firms in the District report increasing volumes for the first time in a long time, as well as increasing revenues. These firms have been surprised on the upside regarding Christmas activity. They've had to scramble to meet transportation demands, especially from Asia, in recent weeks.

Banking conditions are generally weak in the Eighth District, as I'm sure they are across the country. Commercial real estate remains a huge concern. Bankers generally felt that the FDIC does not have the resources or a plan to close banks as rapidly as necessary in the current environment. Many contacts are worried, in addition, about a looming crisis in state-level financing. I have heard earfuls about that problem.

On the national outlook, it looks as if we remain on track for a strengthening economy in 2010. I was encouraged by the strength of the November employment report. Despite the drop in jobs, it was much less than expected. I think it's reasonable to expect positive payrolls in the first months of 2010. Positive GDP growth in the third quarter, and apparently now in the fourth quarter, suggests the recession has ended in terms of rule-of-thumb metrics. But I want to remind the Committee, because employment is only now turning the corner, the actual recession end date may be closer to the end of 2009, as opposed to mid-2009. This issue has an arbitrary flavor to it, but it does affect popular perceptions of the state of the economy, as well as both consumer and business expectations.

Financial market stress continues to abate. It's important to remember that some stress does remain. If we were comparing January 2007, a pre-crisis date, to today, without the intervening period, we would be amazed at how much financial market stress was out there. We would be saying that financial market stress is well above normal compared to that benchmark. It's only because that stress was so high last fall that it seems relatively less painful today. Still, I'm encouraged by the improvements that we've seen, and I expect further improvement in the first half of 2010 in financial markets.

I think an important question for the Committee, and for the outlook, is: Could financial market turmoil somehow reemerge? We've seen a little bit of trepidation in the intermeeting period with events in the Middle East. I think it could reemerge, although the levels of government guarantees worldwide that were implemented during 2008 and 2009 suggest that markets are unlikely to panic as they did in 2008. But I don't think that risk is completely down to zero.

On the inflation side, I think inflation risks remain confined to the medium-term, anywhere from two to five years from now. Actions we take today and through 2010 will shape those risks. I would stress again that current policy is completely unprecedented in the postwar

U.S. period. Uncertainty is high, both around this table and in financial markets, on what the effects of our policies will be. Econometric analysis using data from the last 25 years is unlikely to provide a completely reliable guide to possible outcomes in this situation.

On balance sheet issues, as I have said before, I still prefer that the Committee take a more active stance on managing the balance sheet going forward. I thought the memo from the Desk and Brian Sack's discussion today on runoff issues for the balance sheet made it clear that there is nothing optimal about pursuing any of the passive strategies. These are just possible strategies that we could pursue, but an optimal strategy would somehow talk about how we were going to react to the incoming information on the economy during the period of zero interest rates, which, according to the Greenbook, will still be most of—or all of—the next two years.

The idea of taking a completely passive approach to balance sheet issues is very much counter to all that we have learned about optimal monetary policy over the last 25 years. The asset-purchase program, at least according to the analysis by staff, is thought to have an important real effect on the economy. So my question is: Why ignore these effects when developing plans to get the balance sheet back to normal size over some time horizon? If the economy performs better than expected, we may want to normalize the balance sheet sooner than 2016, or later, as would happen under a passive policy. If the economy performs worse than expected—suppose we are back in recession next fall—it seems clear that we would want to expand purchases further.

And let me reiterate the amount of uncertainty that is inherent in any forecast. If you just look at the staff estimates of uncertainty, for instance, 6 percent real GDP growth in 2011 is actually within the Greenbook's 70 percent confidence interval. So that's one possible outcome, and it is not an outlandish outcome. When you get nine months, a year, 18 months down the line, the economy may look very different from what it looks like today. And we have to have policies in place to be ready for those types of possible outcomes.

Announcing the end of the asset-purchase program in the first quarter of 2010 is not as transparent as I would like, because it suggests that we would not take further actions, when in fact we would in certain states of the world, as long as interest rates remain near zero. So it would also be helpful to be able to make smaller adjustments meeting by meeting as information arrives on the state of the economy, as we would with our interest rate instrument.

Finally, if we can, we would like to move the unsavory assets that have caused us some trouble off the balance sheet faster than current projections envision, but in a way that would still support recovery. We could do that in one of two ways. We could replace them with Treasuries, which was discussed a little bit earlier, or we could just sell them outright, as appropriate, but in a way that would not upset financial markets and cause a backup in rates. Thank you.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Economic activity in the Third District has remained slow, but there has been some improvement in a number of sectors, including manufacturing, retail sales, and residential real estate. The outlook by our firms continues to be for low levels of activity, but most of our contacts say they believe that conditions have bottomed out and will improve, but they remain very cautious about the future.

Let me start with some very good news, which seems appropriate in this holiday season. Our manufacturing survey's general activity index in November rose for the fourth consecutive month, up to 16.7 from 11.5 in October. Our December survey, which will be released, and, therefore, is embargoed until Thursday at 10:00 a.m., also shows an increase, up to 20.4. Another positive note was delivered on the employment index of our survey, which moved from negative territory, where it had been for many, many, many, many, many months, into positive territory for the first time, at 6.3. Both of those numbers seem consistent with a steady improvement in the general activity index, and the growth and positive number for employment were particularly encouraging.

Retail sales in the District improved slightly in November for most of our stores and most lines of merchandise, including autos, which had dropped off at the end of the "cash-for-clunkers" program. The retailers we spoke to are cautious about holiday sales. They are keeping inventories leaner and moving to lower-quality items and, therefore, lower-priced merchandise, which is going to make it a bit more difficult, I think, to interpret the retail sales numbers going forward.

Employment in the three states continues to decline, but the rate of decline has slowed considerably, consistent with that in the nation. We don't have the November employment numbers yet, but, so far, for the last 12 months, the pace of job losses in each of our states has been less than that in the nation. And the tri-state unemployment rate is only 9.2 percent in October, a full percentage point below the national rate. We'll see—can I use word gap?— if this gap is maintained when the November numbers come out next Friday.

The commercial real estate market remains weak—no surprise there. Our contacts expect construction and leasing to remain at low levels well into next year. This matters for many banks in our District, because they have exposure to, and are responding to, and not lending to, developers. Indeed, bank lending continues to contract across all categories—consumers, businesses, and real estate. Bankers report that the declines, though, reflect both supply and demand factors. They have tightened credit standards, although most seem to suggest that they are not *continuing* to tighten credit standards; that is, the bankers we spoke to seem to be comfortable where they are for now. Lending is down, but it seems to be as much a lack of demand as a lack of credit supply, especially to businesses. Most banks reported continuing deterioration in credit quality across all loan categories, but some said the rise in delinquencies and defaults appeared to be slowing. I would note that in the NFIB survey that came out about a week ago, small businesses ranked the lack of demand for their goods as a much bigger problem than the lack of credit. As demand rises more generally in the economy, the credit quality of these firms is likely to improve, and they will increase demand for loans, and lending will be forthcoming as their credit quality improves. That will be a natural part of the cyclical response of a recovering economy.

At the national level, my reading of the data is that the improvement in economic and financial market conditions appears to be gaining momentum, and the likelihood that recovery will be sustainable has increased. Indeed, I think conditions in financial markets have improved more quickly than many of us had predicted. We've been lucky that some of the downside risks we saw a year ago—including the possibility of steeper-than-expected house price declines, and no improvement in equity prices—didn't happen, while some of the upside risks, including faster-than-expected growth abroad and a more rapid decline in the dollar, did, in fact, occur. So sometimes we have to take the good news when it comes, and it may be smarter to be lucky than it's lucky to be smart sometimes.

Employment, retail sales, housing, and manufacturing activity continue to improve. The November employment report was quite encouraging in this regard and doesn't appear to have been driven by seasonals or even one particular sector. The pace of job losses has slowed pretty significantly over the past few months, and initial claims for unemployment insurance, including both the state and federal programs, have moved down. Households seem to have made significant progress in getting their balance sheets more in order, and consumer spending has picked up more than expected. Caution, low sentiment, in addition to tight credit, may be holding back some of the spending, but that could easily change if improvements in labor markets continue. In the Greenbook, consumption is forecast to grow less than real income, but given the low level of consumption, this would actually seem to be an upside risk in the forecast.

Private sector forecasters have been revising up their forecasts based on recent data. I think it would be prudent for us to recognize that the recovery may be more robust than we had been expecting and that the equilibrium real rates of interest may rise faster than anticipated. If so, we will need to be ready to begin reducing the degree of monetary policy accommodation sooner than later, which means we may want to begin signaling this in our statement. As real rates rise, the opportunity cost of banks holding on to vast excess reserves may lead to a rapid increase in the money multiplier and a conversion of excess reserves into loans or borrowed money. This may happen very quickly and require a rapid response on our part, and we should anticipate this with the language in our statements, so that we don't get caught off guard. Thus, I see a greater upside risk in the medium term—the two- to five-year term—to inflation than the Greenbook does. Inflation expectations for now remain stable. I'm encouraged by that. But, again, oil and commodity prices have begun to rise again. Who knows their effect on expectations going forward? We must be cautious in our interpretation of those events. Similarly, the fall in the dollar, while positive for growth, may be signaling increased inflation expectations. All this reinforces my view that we are likely going to have to begin withdrawing some of this extraordinary monetary policy accommodation that we have put into place sooner than anticipated in the Greenbook baseline forecast.

And we will need to begin communicating this possibility to the public. Otherwise, we may find ourselves behind the curve and unable to raise rates in as timely a fashion as we may desire, because our language will have constrained us. As growth rates rise, we are going to have to allow interest rates to increase and not take those increases as signals of market dysfunction that need policy intervention. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. The sentiment of directors and contacts in the Sixth District supports a modest recovery scenario. In the most recent cycle of board meetings, surveys, and calls, I heard views that suggest an improving but still quite fragile economic reality. We collected a number of comments that represent “color,” and not much that raised doubts about the modestly better conditions. We heard reports of better retail spending for appliances and building materials. This was confirmed by last Friday’s retail sales estimate. Retail sales improvement, however, seems to be tied to deep price discounts, and we heard retailers are not building inventories in anticipation of a sustained spending pickup. We heard that retailers are prepared to lose sales for lack of in-store inventory.

We also heard reports that temporary hiring has increased, and that, too, was reflected in the most recent employment report for November. Temp agencies told us that they are seeing growth in higher-level administrative jobs. Anecdotal feedback also supported the story that President Bullard pointed out—that policy uncertainty about health care, taxes, regulation, and cap and trade is feeding a very cautious approach to business investment and hiring.

The Atlanta Bank’s economic growth and recovery forecast continues to foresee a path to the downside of the Greenbook outlook, particularly in 2011 and 2012. Notwithstanding some better-than-expected incoming data, I am holding to the view that there are formidable and very likely persistent suppressing factors that will inhibit a buildup of growth momentum. Our greatest concerns are centered on business investment and the impact of commercial real estate value contraction on bank credit to smaller businesses, which ultimately affects job growth.

We looked more deeply at the inventory and the commercial real estate-related concerns during the intermeeting period and did not find reason to adjust our forecast assumptions. We found that, while inventories are lean in a few retail categories, significant excess inventory remains in many manufacturing categories. We also found that there is a strong coincidence of banks with commercial real estate exposure in excess of three times capital and small business loan share. An implication of the Atlanta Bank's outlook is very slow progress on unemployment and underemployment.

As regards price stability, I remain of the view that upside inflation risk is not much of a concern for the near and medium term. I find it hard to pinpoint a source of broad inflationary pressure and see some indications of disinflation. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Thank you, Mr. Chairman. As pointed out by First Officer Murdoch and his shipmate, Nathan Sheets, [laughter] we have seen some rather startling economic data recently—a less negative unemployment report, just to take President Rosengren's interpretation, and some indications of improved consumer dynamics and a much improved international economic growth scene. Financial markets, I think, are robust. Key spreads have continued to narrow. We've had some major announcements regarding TARP repayments and some significant nonfinancial transactions involving firms mainly in my District, for example, Buffett's acquisition of Burlington Northern and Exxon's deal with TXO announced yesterday. These developments are encouraging. They indicate to me the recovery is under way.

But I'm still in a "trust but verify" mode, mainly based on the anecdotal evidence that I'm picking up, which is mixed, from my contacts. I'm beginning to detect a faint demand-pull heartbeat among bulk shippers—air freight operators like UPS and Federal Express and the rails. Long-distance telephone usage is up slightly year over year. That's always an interesting sign, in this case driven by call center activity. And yet the retailers report sequential slippage month over month and year over year for December thus far, with Wal-Mart and Penney's especially concerned about the bottom three income quartiles for Christmas and for the first half of the year.

Pricing power, as I think Dennis just referred to, eludes producers in most sectors. Retailers who look back at their Black Friday activity and activity since then report ultra-price-sensitive consumption, although I would note that the two large express shippers have announced increases in prices coming on January 4. The announced number is 4 percent—if you look at the way that's practiced, it will probably be a net rate of 2 percent. And there are reports that Wal-Mart and other large merchants are using a little bit of pricing power in order to protect their margins.

One worrisome development that I have heard about is in retail supply. Chinese suppliers to retailers are attempting to renegotiate the price concessions for soft goods for 2010. Most of the merchants report that they have rebuffed them, but they do not believe they can continue to hold off doing so into the second half of 2010 and 2011, as Chinese manufacturers' margins are being squeezed by increasing labor costs, raw material costs, and inflation. And the expectations are for a reversal in sign from a minus 3 to 4 percent for soft goods to plus 3 to 5 percent as we proceed through the second half of 2010, assuming that consumption holds up.

On the balance sheet front, I could detect no change in this go-round with my interlocutors. The capital markets are pretty much wide open to the big boys who are still hoarding cash. Most, with the exception of energy companies, such as Exxon, which are focused on longer-term natural gas—a play that they consider defensive—are sitting on large cash reserves. Few are expecting to expand their cap-ex domestically until both the political and economic skies are clear.

As to the small guys, they continue to complain about the paucity of bank credit. As to budgeting head count and other operating overhead for 2010, the new ubiquitous buzzwords are "ZOG" and "NOG." The bias is towards ZOG, which is zero overhead growth, or NOG, which is negative overhead growth. This will not likely change until they see the whites of the eyes of top-line growth in their revenues. It remains elusive. Those who do see it are pursuing what is known in the parlance of consulting as the HOG approach, which is budgeting their overhead to half the overhead growth they would otherwise commit to, because of gnawing uncertainty and a newfound ability to drive higher productivity. That's the big business crowd.

The little guys, the small businesses, remain in a very defensive crouch. Small businesses' inventory investment plans are at historically low levels. Their capital spending is on hold. Actual outlays and planned outlays are at record low levels. More small firms, according to what I can glean, still plan on reducing employment than plan on adding to their payrolls. And as you have pointed out, Mr. Chairman, this is vexing, because we all know that, during recoveries, small firms typically account for a large share of employment gains. We've done some research on this at the Dallas Fed. In each of the 1983-1984, 1993, and 2003 expansions, the vast majority of employment gains were generated by firms with fewer than 500 employees. What we don't know is the degree to which cap-ex expansion of the larger firms drives that growth in employment in smaller firms. For example, El Paso Natural Gas has just announced financing for a pipeline. It will add 5,000 employees to its own payroll, but in building that pipeline, of course, you feed into the small businesses that provide the supplies to those employees and the construction of that pipeline. To the extent that smaller firms are more reliant on bank finance, it's obvious that their recuperative powers are being affected by tight bank credit.

As to the larger firms that have come to access financial markets rather readily and are less constrained by bank financing, they still appear, according to my interlocutors, reluctant to expand overhead and especially agnostic as to the need yet to expand domestic payrolls.

I will just add to what several presidents have already mentioned by using a specific reference. A CEO just came back from touring the world. This is a company that supplies ten million small businesses with a vital component on the IT side, and his response after the trip was, "Every country I went to—India, China, The Czech Republic, Brazil, Vietnam—said, 'What can we do for you? How can we help you? We'll give you low taxes. We'll give you a building. We'll give you land.' I come back here and it's, 'You can't do this, you can't do that, you can't do this, you can't do that.'" That attitude, Mr. Chairman, is definitely having a depressive effect. It has nothing to do with monetary policy, but it is holding back the desire to expand payroll and cap-ex and adding to the ZOG and to the NOG.

As to the price pressure front, headline CPI rates have been increasing steadily these past few months. The 12-month headline rate will soon turn positive, maybe with tomorrow's report. The Empire State data released today or yesterday indicate some building price pressure on what comes in the door, despite the weakness that was in that report. Both core CPI and core PCE posted annualized one-month rates above 2 percent in October, and the 12-month rates have ticked up to a little over 1.7 percent. The direction of change from negative to positive might ordinarily ruffle a hawk's feathers, but for now I remain unalarmed. In part this is because of what accounts for the increase: excise taxes on tobacco sales and a number of small items that are a bit obscure to me, other than the prices of new motor vehicles, such as the price index for consumption expenditures for nonprofit institutions, and two other dodgy financial service components, the price index for financial services provided by pension funds and the price index for financial service charges, fees, and commissions. More encouraging to me is the fact that both the median CPI and the trimmed mean PCE show continued deceleration. The fraction of components in the PCE registering price declines remains elevated and sustained. According to our calculation, over the past 12 months the fraction of falling price components has averaged 40 percent compared with an average 32 percent from 1994 to September of 2008.

Having said all of that, my outlook for economic growth has not changed. I am not as pessimistic as the New York Fed appears to report—a number, by the way, which I note is strikingly close to what Goldman Sachs is forecasting. [Laughter] Nor is it as robust and optimistic as what the Board staff is projecting. And given all that I'm seeing now, I stick to my previous forecast. I'm somewhere in between the two, and having said that, I don't think it is too early to begin to think of how we will deleverage our balance sheet and pull back the monetary accommodation we have provided. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you.

VICE CHAIRMAN DUDLEY. Can I make an interjection?

CHAIRMAN BERNANKE. I don't blame you.

VICE CHAIRMAN DUDLEY. Two things. One, Mr. Hatzius, who is the chief U.S. economist at Goldman Sachs right now, did win the Blue Chip Forecasting award for accuracy this year. [Laughter].

MR. FISHER. That's ex post, past tense.

VICE CHAIRMAN DUDLEY. And, two, I think I contributed something to his training. [Laughter]. So it's not surprising that our views are not that far apart.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I am not sure I have ever seen President Dudley blush. [Laughter] Our information about the Fifth District economy has been somewhat mixed lately. Surveys indicate the service sector is looking up. The nonretail revenue index has moved back toward positive territory—it's not there yet—having been quite weak for several months. The retail revenue index has edged into positive territory for the first time since the second quarter of 2007. Readings for employment in these two service sectors and expected demand six months ahead have also strengthened noticeably. The manufacturing index has backed off its recent highs, however, and is hovering around the break-even mark. Anecdotal comments suggest demand has stabilized in many firms after having recovered in the middle of the year, and exports are widely cited as a bright spot in the District. Our survey measures of price trends remain stable at a low level.

Nationally, at the last meeting I think most of us were expecting national data to show a moderately paced recovery. The intermeeting data have generally been consistent with that or in some cases a bit better than expected, as many have remarked. Payroll employment losses have slowed substantially, and, as is typical in recoveries, there were strong upward revisions for prior months. Initial jobless claims have fallen more than 20 percent in the last six months, and the improvement in aggregate hours worked after so many months of stagnation was particularly useful. This stabilization in the labor market bolsters the outlook for consumer spending, I think. Revisions that have added 1¼ percentage points to the level of personal income cumulatively also bode well for consumption, and these developments make the recent growth in retail sales look more sustainable. The recent firming in net exports and residential investment are also supporting domestic production. The strong ISM manufacturing readings for production and new orders are consistent with recovery in the manufacturing sector. Because the Fifth District manufacturing survey led the ISM on the way up, however, it led the much smaller Empire State survey and Philadelphia surveys as well; its recent decline might be a reason for caution about the robustness of manufacturing at the national level. Commercial construction is obviously a drag on economic growth, but those figures have not come in noticeably worse than expected, because expectations were so low to begin with. So overall, I'm expecting moderate growth to continue along the lines of what's in the Greenbook, but without as much disinflation.

Having said that, I find it hard to get a bead on just how this recovery is going to shape up over the next year or so. I sense a degree of caution among businesses attributable to concerns about the shifting regulatory environment and potential health care and climate change legislation. Some of my colleagues around the table have remarked on that. In addition, uncertainty about the future path of federal deficits, I think, looms over the outlook as well. So economic growth might not accelerate much from here.

In financial markets, rates on an array of short-term instruments have fallen since the September meeting—T-bills, commercial paper, and short-term euro-dollar deposits, for example. Meanwhile reserve balances have risen by more than $200 billion over the same period. This looks a lot like the quantitative easing we were expecting, and it may be partly responsible for the decline in other medium-term rates as well. It's not obvious that further easing was really needed over this time frame, as the outlook has generally been improving. The magnitude of the effect seems to have been relatively small, however, and inflation expectations seem to have remained stable.

The case for expecting further disinflation continues to weaken, in my view. The Greenbook's forecast for 2010 core PCE inflation was marked up yet again this time and has doubled since March. The 2009 core forecast has been revised up since then as well, as core inflation has failed to fall as expected. It looks to me as if the stabilizing effect of inflation expectations has dominated any depressing effect coming from gaps between output and statistical trends in output, but I'm sure we will discuss this at greater length in our special topic tomorrow. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Once again, my outlook and business reports have not changed very much over the intermeeting period. Most of my contacts currently are seeing continued modest improvement in their businesses, but firms continue to be nervous about prospects for the first half of 2010, and they're not making major new commitments right now. That said, some are in the process of making marginal adjustments. The temp firms said that they have now had three months of decent gains in orders, mostly for low-wage, light-industrial workers. Typically this is the first segment of their business to come back after a recession, and there were scattered reports from other contacts about some modest rehiring, though it is too early to see how meaningful these might be. Largely, it is the biggest cutters of employment that are rehiring right now. On balance, most reports indicate that businesses have largely completed the employment and capacity reductions associated with right-sizing their operations for what they expect, and when signals point more clearly to a sustainable upturn in the economy, they appear ready to make more definite commitments to ramp up production. By the way, no one raised the specter of uncertainty over government legislation currently being contemplated, but if I asked them later, and I did sometimes, they said yes, but it was not the first thing on their minds.

Financial conditions seem to have eased further in a number of markets. Risk aversion continues to decline, and there are increasing reports of previously sidelined capital moving in the markets in search of higher returns. Not surprisingly, the chorus of concerns regarding frothiness in financial exuberance seems to be growing, and I think you heard about this in Berlin, according to news reports, Mr. Chairman. Although these warnings seem premature, a couple of them were interesting. For example, my private equity director has noted several times that at least a few recent deals have included some of the troublesome features that we saw during the last boom: interest rate toggles, light covenant provisions, and funding for dividend recaps. In exuberant times, these lax provisions came bundled together. In recent deals only single provisions have been included. Still, he says he didn't expect to see any of these so soon. In banking, however, there has been no change in the ongoing complaints and debates. Small businesses say credit is overly tight, while bankers worry about creditworthiness, managerial ability, and examiners' reactions to new lending.

This divergence between conditions in capital markets and bank credit serves as a reminder that monetary policy is a blunt tool. Monetary accommodation will flow to where it can obtain the best return, and it is difficult to predict when it will reach particular sectors. Currently the liquidity is going to capital markets, and while it is helping banks shore up their balance sheets, it is not clearly finding its way into new bank lending.

Turning to the outlook, business and household caution and restrictive bank credit will continue to be headwinds, but I expect these to abate more as we move through next year. Overall, my forecast for real economic activity is about unchanged from last round, and we are looking for GDP growth rates over the next year and a half similar to those in the Greenbook. With regard to prices, resource slack remains large, and inflation trends are still well below my guideline of 2 percent. At the same time, inflation expectations have remained within their recent ranges. So my forecast for inflation is about the same as last round, with core PCE inflation flattened down a bit in 2010 to 2011 but then moving up to about 1¾ percent in 2012. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. Since the last meeting I've made relatively minor changes to my forecast for economic growth, unemployment, and inflation. I expect the economy to grow only modestly over the next couple of years, with unemployment remaining inordinately high and inflation running below my preferred rate for a very long time. Though I'm not satisfied with this outlook, my concerns about the downside risks going forward have continued to diminish since we met in November. A wide range of indicators shows improvement: interest rates have come down and equity prices have risen; consumer spending has picked up; home sales have risen smartly; and the global recovery has gained traction.

The positive signs we have seen are welcome, as economic activity has fallen so far below where it ought to be. There is, of course, some range of opinion on the extent of slack in the economy. Some of my directors characterize it as very large. Others insist it is so massive that we will end up with a lost generation of people whose skills and labor market attachment atrophy from disuse. In this context, the November employment report was clearly good news, and it now seems quite likely that employment growth will soon head into positive territory. The workweek and temporary employment, both harbingers of future job creation, have risen, although as David noted, the JOLTS data suggest that hiring rates remain at an exceptionally low level.

It is sobering to realize, however, that we need an extended string of strong employment reports for unemployment to fall in line with the Greenbook projection. In the Greenbook, nonfarm payroll gains average about 260,000 jobs per month over 2010 and 2011, and this is still enough only to lower the unemployment rate to a still elevated 8¼ percent by the end of 2011. As if the attainment of such gains weren't enough of a challenge, we might need even larger job creation to bring the unemployment rate down under a reasonable alternative to the Greenbook's assumption about labor force participation. The participation rate has fallen about a percentage point since the recession began, and the Greenbook assumes that participation will fall a bit more. Historically, however, participation has been strongly cyclical, and if over the next year the participation rate were to rebound by even half a percentage point, then we would need another 1.2 million jobs, 100,000 more per month, just to achieve the same slow decline in the unemployment rate.

Last week I showed a forecast much like the Greenbook's to my directors. Frankly, they were incredulous. Every single one of them thought we were overly optimistic about employment. My contacts are more likely to be considering continued layoffs rather than any substantial hiring. Indeed, one of them said, "It's become fashionable not to be hiring." Businesses think that for the foreseeable future they can continue to meet sales demands with productivity improvements. For the foreseeable future, their planning horizon appears very short. They remain shell-shocked and traumatized from recent events. A couple of them emphasize that they're making plans based on what they see over the next three to six months, since they have little confidence looking beyond that horizon. So, even though my contacts consistently see signs that demand is starting to recover, uncertainty remains high. They remain focused on ensuring their survival and are hesitant to hire or invest beyond replacing essential equipment.

For smaller businesses especially, financing conditions also remain an impediment to expansion. Credit is available, but nonprice terms, including collateral requirements, are viewed as onerous and unattractive. This is yet another reflection of the pervasive fear that businesses feel about making commitments that could come back to haunt them. Moreover, even with the thawing we have seen in credit markets, events during the crisis have made firms keenly aware that they can't rely on financial market functioning. So at least some of my contacts plan to keep more cash on their balance sheet permanently rather than deploying it.

Of course, there are limits to the efficiency improvements that have boosted the aggregate productivity figures so spectacularly, limits to how much firms can expand production without adding employees or capital. So when businesses become more confident about the future, they will eventually begin hiring in earnest and ramp up capital expenditures. The question is how long it will be before this important element of confidence returns to our economy.

The high degree of slack in labor markets is also making it harder to achieve what I view as a desirable inflation rate of 2 percent for core PCE prices. We'll talk much more about inflation dynamics later in this meeting, but one theme of the papers prepared for that discussion is how slack pushes down marginal cost, and we've certainly seen that in the data. According to the employment cost index, compensation gains this year have been anemic, running 2 percentage points or so below their pre-recession rates, and the strength in productivity has caused unit labor costs to fall markedly over the past year. These disinflationary forces working through slack are at least partially offset by inflation expectations. According to most available measures, inflationary expectations are reasonably stable at present.

My staff regularly estimates a model that allows them to decompose the break-even inflation rate from TIPS into inflation expectations and an inflation risk premium. Their model-implied expectations for inflation have fluctuated in a relatively narrow range during the last six months, although they are down noticeably at all horizons since the beginning of 2009. Inflation risk premiums, in contrast, have risen since the beginning of the year and are now in the somewhat elevated range. These estimates are consistent with the anecdotes we hear concerning the unusually large dispersion of opinion about the longer-term inflation outlook.

All told, I agree with the Greenbook that the most likely outcome for prices is some further disinflation. If this forecast proves accurate, I would expect uncertainty about the inflation outlook to decline and the inflation risk premium to recede. The bottom line is that we are faced with a situation in which inflation is undesirably low, and, even with large monthly employment gains, the level of resource slack will remain high for an extended period. In my forecast, the zero bound and the limits on unconventional policy constrain us from pursuing a more desirable and more expansionary policy for some time to come.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. Given the structural challenges that our economy is experiencing and has ahead of it, I’m relatively optimistic about the economy. Rather than discussing the national picture, because our District mirrors some of the national events, I’ll focus on some of that information.

First of all, we're experiencing some improvement in our manufacturing sector. It's small but systematic, and we get fairly good reports back on our surveys. Our retail sales reports are up across the District. This holiday season has been better than most people expected. We are seeing some slowing down in job losses, as others have reported, certainly, across the region. And even in our housing sector we are seeing modest improvements there as well. Our ag sector is actually improving very nicely, with improvements in the international sales area, with goods sales to China, for example, and so our ag sector is really quite good right now across the region. Even technology seems positive. As one of our contacts described it, compared with the tech bubble bust, this has been a very mild event for them, so they're much more optimistic as they go forward and think that they will have further strengthening moving from here.

It's interesting in talking with some of these individuals—it's like listening to the FOMC. They're optimistic, they're doing pretty well, but they're not quite sure, so they're holding back, waiting for more certainty before they invest. And they have a good pocket of money to invest once they gain that confidence to "pull the trigger," if you will. That was striking in a number of conversations I had with some of the tech people and some of the others who were thinking about investing going forward. I think that's worth noting.

As others have said, commercial real estate is really quite difficult for banks that are caught up in the commercial real estate cycle. But, for our region, I think it's also important to make some distinctions. In the urban areas, where some banks have plunged into commercial real estate, they're in deep trouble, and they're not going to be able to make loans. They're just hanging on. But there's another group of banks that did not plunge as deeply, and it's a fair percentage of our banks. They have kind of the same issue that I talked about earlier—they have the money, but they want to be very careful, they don't want to get caught up in any false recovery, and so they are being very thoughtful before they extend it. Even though they have funds, their standards are fairly tight, and they're also claiming they're not seeing the demand from the small business, so they have both sides going. But as the economy improves, I think a good number of them will be in a position to lend, even though there will continue to be a drag from the commercial real estate side.

So overall I think we are on the right track. Things are improving in our region, and I think I see that in the models on the national economy. I have no major disagreements with the Greenbook, as we think about things going forward.

I do want to note and make a comment on the issue that Jim Bullard mentioned. I think that the approach of not reinvesting proceeds in the maturing MBS is a very good approach. And I would tell you that, the way I look at it, even if you were to do that, in 2016 you'd still have half your portfolio left. But it's like phase 1 of this extraction process. We talked earlier about raising the spread, letting these roll off, and then, depending on how the economy recovers, we might be more actively engaged in managing that portfolio down, if we're permitted to do so, by circumstances, and we should be considering that. Part of that, hopefully, will be discussed tomorrow, and certainly a big part of that will be discussed in January. And I look forward to both of those conversations. Thank you.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. I am pleased to see the signs of improvement in the economic data we received during the intermeeting period, especially in the November employment report. Nonetheless, I see the economy in 2010 as having little momentum and as challenged by a lack of business confidence. My business contacts report that sales are up from earlier this year, but they don't see the momentum that is needed for a sustained recovery. Several of my contacts noted that recent growth is unlikely to be sustained, because it was driven by one-time gains. For example, business has been picking up in several manufacturing industries, because they are replacing inventories at the wholesale level. They indicated that wholesalers had not been restocking earlier in the year. Inventory restocking is obviously welcomed, but if it is without a sustained improvement in final demand, it implies only a temporary strengthening in economic activity.

My business contacts also expressed a general lack of confidence in the outlook. They view the current environment as so alien that most of them were uncomfortable providing an outlook for 2010. They tell me that their conventional methods for assessing their own business prospects are irrelevant in this environment. On top of the uncertainties about the economic outlook, as others have noted, proposals for health care reform, financial reform, and the new environmental regulations, have the potential to affect business conditions significantly in the near future.

I am concerned that this lack of confidence in the economy's prospects for even the next few quarters is going to be a significant barrier to a more robust recovery. Businesses continue to stress cash preservation and cost containment as their top priorities. They report little incentive or motivation to invest in capital projects. To quote one CEO, "We're not going to invest or prepare for growth without orders in hand." This issue of confidence was also raised in a recent discussion at our joint board of directors meeting, among the businesspeople and the bankers, on credit availability and bank lending standards.

For large firms, which have access to the public debt markets, credit is now available on more attractive terms than earlier this year. But, as others have commented, smaller firms, which rely primarily on banks, are complaining about the availability of credit. Bankers expressed a lack of confidence in the values of their borrowers' collateral as one of the main reasons that they have had to raise their lending standards.

Many of the businesspeople criticized the higher pricing and tighter terms for lending as being based on unreasonable assessments of their businesses. So they are losing confidence in banks as a reliable source for funds in the face of elevated terms and additional covenants. These reports suggest that credit availability continues to be an impediment to growth, particularly if we are counting on small businesses to contribute to economic growth.

My business contacts did have some good news, and that is that more firms are expecting to return to profitability. With this improvement, several businesses reported that they would at least partially restore hours, wages, and benefits that had been cut when the outlook was more dire. These actions should aid GDP growth, even if they have little effect on the unemployment rate for a while. More broadly, the speed and scale of the cutbacks many businesses implemented earlier this year give firms substantial room to expand activities before they would have to hire any new employees.

Weighing all of these reports and the recent data, I made only minor changes to my outlook. I continue to see weaker GDP growth in the current quarter and for 2010 than the Greenbook projection. I expect the unemployment rate to remain roughly unchanged in December, with only modest improvements through all of next year. My projection for core PCE inflation remains low throughout 2010 before it gradually converges towards 2 percent beginning in 2011. My inflation outlook is based on the significant amount of excess capacity that we currently have and inflation expectations that remain close to 2 percent from one to ten years out, according to my staff's model for inflation expectations.

I continue to see the risks as balanced around my outlook for economic growth and inflation. The potential for the recent momentum in labor markets to continue is roughly offset by the potential for further restraints on credit availability. For inflation, uncertainty remains elevated on either side of my projection. This uncertainty is linked closely to whether or not inflation expectations remain anchored. Overall, the economy is certainly in better shape than earlier this year, but it is still not clear to me that the economy has truly turned the corner. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. In the Ninth District, real economic activity has begun to recover, but slowly. The basic sense among our directors and our Small Business Council is that the deterioration in conditions has ended. Figures confirm this sense. Regional unemployment has stabilized, although at elevated levels. However, our directors also expressed some skepticism about the degree to which this turnaround can be sustained without ongoing government interventions, such as the first-time homebuyer credit. Our Small Business Council expressed strong concerns about policy uncertainty related to taxes, health care, and cap and trade.

Nationally, the revised estimate of third quarter GDP growth was 2.8 percent. This increase is better than the preceding four quarters of negative growth. Nonetheless, output is well below its trend level if we assume that that trend grows at 3 percent per year, beginning in the fourth quarter of 2007. The Greenbook predicts that GDP will rise by over 4 percent per year over the next two years. Based on our Minneapolis model’s forecast, I believe that this prediction is somewhat optimistic. But even if the Greenbook were right, GDP will be well below this 3 percent trend line through the end of 2011.

In terms of labor market conditions, the November employment report was heartening. National unemployment has started to decline, and employment seemed to stabilize in November. However, unemployment remains extremely high by historical standards, and I agree with the Greenbook that it will remain elevated through 2011. The employment-to-population ratio remains at a 25-year low.

The inflation front is more promising. Inflation remains low. Inflationary expectations, as measured by Blue Chip forecasts or TIPS spreads, also remain low. My own expectations are similar. Nonetheless, I am concerned about a tail risk of a low-probability but high-inflation outcome. The size of the government debt held in the private sector has increased by more than 30 percent in the past two years. This rise in the debt can only be funded by future tax increases, spending cuts, or higher inflation. Any uncertainty about the Congress's will to exercise the required fiscal restraint translates directly into uncertainty about current or future inflation.

There is also good news in financial markets. Thanks in large part to interventions by the Fed, key liquidity measures like TED spreads have returned to normal. Indeed, the option-adjusted spread between agency MBS and Treasuries has fallen to near historical lows. This improvement in financial markets has significant consequences for policy. Liquidity disruptions last fall served to segment financial markets in unprecedented ways. In that environment, the LSAP played a valuable role by lowering risk premiums in the agency debt and MBS markets. However, the return to normalcy in spreads across financial markets indicates the degree of market segmentation is, at a minimum, greatly reduced. Without such segmentation, the impact of reducing our holdings of agency MBS or Treasury debt on their yields is likely to be muted. I would, at a minimum, be supportive of not reinvesting the proceeds from the LSAP either from the agency securities or from the Treasury debt.

Overall, the real side of the economy is recovering somewhat. However, detrended GDP is well below historical norms, and unemployment is well above the historical norms. And this characterization seems likely to continue well into 2011. Inflation is under control and is expected to remain so, although the size of the government debt represents a possible large risk. Financial markets continue to improve and are much stronger than a year ago. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. The economic outlook has clearly improved since the previous meeting, and we all seem to agree on that. On the real activity side, here's what strikes me as most meaningful: First is a more solid foundation for consumer spending, as David Wilcox pointed out—a higher underlying compensation trend, as well as slower job losses and rising hours worked last month. Second is consumer spending gains—core retail sales in November were quite solid, for example, and real consumer spending looks likely to grow at a moderate rate this quarter. Third, as Nathan pointed out, is trade improvement fueled by export growth, not just export growth on its own, but also supported by pretty strong economic expansion outside the U.S. And, fourth is something that hasn't been mentioned yet—it looks as if some of the TARP monies are going to be used to fund a modest jobs program, so the trajectory of fiscal stimulus may not be as steeply downward as we go through 2010 as we anticipated earlier.

But I don't want to put too much weight on any of this. First, I think much of this improvement was anticipated. I think it's more that we're moving along the path that we expected, rather than we are moving to a distinctly better path. Second, there are significant constraints in terms of credit availability, and I don't see any sign that those have changed very much since the last meeting. Third, we still have a tremendous amount of political uncertainty about health care reform, financial reform, and tax policy. In talking to our directors, they make it very clear that this is a factor influencing their hiring behavior. Although job losses have slowed, this seems to be almost exclusively due to much slower layoffs than due to a pickup in hiring.

So for the New York Fed, Richard, the bottom line is more confidence about the sustainability of the recovery, but still an expectation that the economy will slow a bit from the current pace in 2010. That said, I think the risks to our forecast are shifting towards the upside from the downside.

We should also recognize that we face a very disappointing path for unemployment going forward. So even if the economy is on a somewhat stronger growth path, that would be very welcome right now, and I would argue we should not offset that with changes in our policy.

On the inflation side, I think the outlook has not changed much. We have TIPS five-year, five-year forward inflation measures—it may in fact be slightly higher than that, but it's hard to know because the inflation risk premiums are hard to extract. And some other indicators certainly show less anxiety about the inflation outlook. For example, the fears about commodity prices and the dollar seem to have calmed down quite a bit since the last meeting. Interestingly, the mid-month University of Michigan reading had an almost bizarre drop in the median one-year and five-year inflation forecast—maybe it was just a fluke, but it was interesting nevertheless.

Given the large amount of federal borrowing and the imminent wind-up of our large-scale asset-purchase program, I am, frankly, quite surprised that long-term rates have not climbed more sharply. And I take that as another sign that investors are either not that worried about the long-term fiscal outlook or particularly worried about the risk of higher inflation. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. We have had several encouraging signs about the strength and sustainability of the recovery, not enough to warrant a major change in the outlook, but we're moving in the right direction. My list is the same as the list that everyone else has read out. So, very briefly, private demand has been stronger, especially in consumption, supported by more income growth. Business spending on capital equipment does seem to be moving a little higher. Growth is beginning to feed through to reduced job loss and higher hours, and financial conditions are improving in markets, with declines in bond rates, increases in stock prices, and securities markets are open to substantial capital-raising, albeit at still somewhat elevated risk premiums. Foreign growth is a bit stronger on balance, so the pickup is global, it's not idiosyncratic to the U.S., and it should support export growth.

I think there are a couple of possible reasons for a slightly stronger outlook. Some of it is pent-up demand perhaps. The level of spending on consumer durables and capital equipment has been below replacement levels, although, in my view, the stock of consumer durables and capital was probably above long-term sustainable levels coming into the recession, reflecting an unsustainable level of consumption and investment; but wear and technological improvements are making updating and replacement more attractive for households and businesses.

With the return of risk appetite in financial markets, financial constraints may be a little less binding than we expected, at least for those with access to securities markets where low policy interest rates are feeding through the cost of capital. And markets are opening up to more securitization in selected segments, partly through the influence of TALF.

Capital reflows to emerging markets, along with expansionary fiscal policies abroad, are lifting asset prices and supporting income growth, especially in emerging Asia. Still, in my view, incoming information has also tended to confirm the existence of several constraints on spending that are likely to keep the improvement in the economy gradual and the decline in the unemployment rate quite slow.

The contribution of the rebound in housing will be much more limited than usual in a recovery, and the information we've gotten since the last meeting confirmed that starts and permits for single-family homes over recent months have been quite flat, and for multifamilies they've dropped quite substantially. Prices of homes have moved down again, at least by one measure, and oncoming foreclosures are likely to limit any gains in prices. And the vacancy rate is still quite high, indicating that there are plenty of existing homes available to meet demand and constrain new building.

As many have remarked, bank credit remains quite tight, and growth in the money supply has been modest. To date, there's little evidence that the huge quantity of reserves is materially affecting the supply of money and bank credit. Spreads on business loans from banks widened further over the past three months. Small businesses perceive credit availability to be quite limited. Credit card rates have risen substantially; that's partly in anticipation of regulatory pricing constraints, but it does raise the cost of capital of households and small businesses. And bank loans have continued to drop very, very rapidly.

Many foreign economies may be constrained in the degree to which they will support faster global growth. Japan seems to be fighting against a strengthening deflationary trend amid enough concerns about the economic outlook there to foster additional stimulus from both the fiscal and monetary authorities. I thought the staff forecast for Japan was on the optimistic side.

The euro area is threatened by sovereign debt crises across its southern tier and in Ireland, which at a minimum will necessitate a severe tightening of fiscal policies in many countries. And it's not clear how long emerging Asia can carry the world economy without exacerbating imbalances and worries about excessive credit creation and asset bubbles.

To be sure, the repeated modest upside surprises to activity over the summer and fall do suggest some upside risk to the forecast. It could be that confidence is gradually rebuilding, and there's a positive interaction with the financial markets that could gather steam. But there are downside risks as well. We are removing a substantial number of governmental props to the financial markets and the economy over the next several quarters. The mortgage market is a particular concern as we stop our MBS purchases. The U.S. Treasury will be constrained in its backstop of the GSEs after year-end, and there will be no clarity on the ultimate fate of these agencies for some time, probably a year or more. And some areas of securitization appear to be less ready to stand on their own than others, suggesting that some borrowers will face higher costs as TALF is terminated. Additionally, the substantial support that fiscal policy has provided to spending will be winding down in the second half of next year, and questions about fiscal sustainability will constrain any new stimulus now or if the economy falters.

In an environment of high unemployment and excess capital capacity, I expect intense competition among workers and businesses to keep costs low and the underlying trend of inflation stable at a low rate, that is, a rate below my objective and/or perhaps even trending lower. And I think the data on price movements that we have gotten over the intermeeting period broadly support this outlook. Energy prices have lifted headline inflation in recent months, but oil prices have fallen considerably in recent weeks. Import prices have also added some to inflation, but the most recent stabilization of the dollar should limit the extent of those effects. Core CPI increases have been relatively flat at a fairly low 1¾ percent on balance over the past six months. Core PCE has picked up a bit, but that reflects nonmarket prices. Market-based core PCE has continued to go lower to around 1¼ percent. The trend in unit labor costs remains downward, reflecting both strong productivity increases and damped compensation. And there are some hints in the survey data that long-term inflation expectations may be moving down a little, although it's too early to make anything of those surveys, and the market-based measures of long-term expectations remain at the top of recent ranges. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. Let me spend most of my time on financial markets, with just a few words on the real economy, which I think are consistent with many of yours. At the last couple of FOMC meetings I, like several of you, argued that the next few quarters were going to be considerably stronger than the next few years. I think we finally have some data that bear that out. First, the remarkable melting up in credit and financial markets, which we have all been noting for quite some time, seems to be doing remarkable things to help get this economy going over the near term. Second, is the jobs front, which President Yellen and many of you talked about. I think the job creation story is both a function of near-term prospects and medium-term prospects, and if medium-term prospects are as uncertain as many of us have described, then we should not be so surprised that the job engine is—"effectively dead" perhaps overstates—effectively impaired for some time.

While it's difficult not to see some good news in the most recent labor market prints and unemployment prints, let me try. Firings have certainly leveled out, but I do think what's happening on the small business stuff is more than just politicians approaching even-numbered years—it does appear to be much more substantial than that. And the probability, as President Yellen said, that workers who lose jobs will spend more time out of work and the harm that could be doing to a generation of underemployed workers early in their careers strikes me as something that could well be structural and a cause for real concern.

I remain concerned about other possible outcomes to the real economy in late 2010 and beyond. While the productivity surge has been more impressive than I thought it would be, it's hard to know how much of these improvements are cyclical and how much of them are structural and enduring. Historically, early-stage spurts in productivity have been followed by rising unemployment, but maybe this time it's different. Maybe, amid the range of uncertainties, employment and even hours worked may be slower to rebound, which could extend the period of strong productivity gains and productivity-driven growth without doing much to make us feel much better about the labor market situation.

On the financial market side, let me make reference to three themes. At the last FOMC meeting, I think, we discussed the fact that the financial markets seem to be nearing an important inflection point with some real possible impacts on the broad economy. So key theme number one: Is Dubai really about Dubai, and Greece really about Greece? I think there are dozens of Dubais out there, that is, entities with the implicit support of their sovereigns, and I think the relevant question is: Are the expected consolidated debt-to-GDP ratios consistent or inconsistent with current funding costs? Markets for now seem to be largely comfortable with sovereign credits generally and with sovereign support of off-balance-sheet liabilities. Think of Abu Dhabi and Dubai, think of the EU and Greece, and there are very few spillovers across markets. CDS for some of the sovereigns, as Brian mentioned at the outset, seem to be moving a bit, but I think we should be extremely worried about some nonlinear moves. So I am skeptical that the current comfort in financial markets will hold. Bond market prices globally may be masking disturbing trends, and, while the official statistics on government debt-to-GDP ratios and associated measures of liabilities are growing, if we added these implicit liabilities, the numbers really could be quite staggering.

Think about the U.S. circumstance. If we added the liabilities of Fannie and Freddie to the debt-to-GDP ratio here, our sovereign debt-to-GDP would double overnight. Then if you go out into the medium term, the numbers become even more alarming. I don't mean to take us back to the early days of the panic, but what if markets come to think of these off-balance-sheet liabilities as the SIVs off-balance-sheet entities, but this time of the official sector? The average terms of many sovereigns' funding, including our Treasury, have shortened throughout much of 2009, and the problems of maturity mismatch are not unique to the private sector or unique to the U.S. government. So I wonder whether governments are properly gauging their true medium-term costs of funding; and if complacency is, in fact, finding its way into financial markets, we cannot discount the prospect of some of these nonlinear outcomes in the financial markets, which would certainly do great harm to the economy.

Key theme number two, old money chasing old products. So what's that reference? It looks to me as though what we are seeing in asset allocation is fund flows coming out of the money market and money market mutual funds and other assets that are yielding close to nothing, investors that are tired of earning zero as they see markets melting up around them, and they are investing that in assets. But most of these assets are not new assets. There's not a tremendous supply of new issuance coming to market—frankly, there's less new supply than I would have thought. Brian talked about the new supply of mortgage-backed securities being relatively scant. I think that is true across a range of markets. In some ways, we are seeing older vintages of assets getting bid up. If I compare the refrains from the recent boom in asset prices with current conditions, we can all remember a couple of years ago folks showing up and saying, “I have got $3,000 to pay for my mortgage payment this month. How much house can I get?” The 2009–2010 version of that is an investor showing up and saying, “I need LIBOR plus 400. What am I buying today?” So I would prefer, in general, to be seeing new money evaluating new products rather than old money chasing old products, but I think that’s a sense of where we are.

But all my themes aren’t negative. So let me leave with a final positive theme in financial markets. As Brian said at the outset, we have seen a couple of differing moves both in the foreign exchange value of the dollar and in commodity prices. We saw this one-way bet on dollar and commodity prices, a weaker dollar, higher gold, higher metals, for much of the intermeeting period, but it has reversed over the course of the last ten days or so. I happen to think that reversal is healthy. I happen to think that a two-way market across these key asset classes is probably a good thing. A stronger dollar, commodities a bit weaker in the last ten days, and reaction to recent stronger data in the U.S. on payrolls and consumer spending, and more worries about European prospects tell me these markets are acting a little bit more as we had long thought they would. They seem somewhat healthier in responding to relative growth rates and expectations of relative rate differentials, with the U.S., frankly, standing up relatively favorably against the U.K. and the European Union. Before the last 10 days, many of these commodities were near multidecade highs. Risks of one-way bets and even bubble conditions in certain assets, as a result, may be mitigated if what we’re seeing is something more than a head fake. I think those trends on the dollar and commodities are important to watch. I think they likely offer an important view on what happens to inflation expectations going forward. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. In general, the bankers are looking for some sign of the top in their credit deterioration, and, with the exception of CRE, everybody seems to feel like it is just around the corner, that they are very close, but nobody can support it yet with any real evidence. They expect that the nonperformers will peak in 2010 and charge-offs will peak in late 2010 or early 2011.

Every banker I spoke with—probably because they were just coming out of or still wrestling with their 2010 profit planning—was focused on the need to find loans in order to generate income. They said that the loans that they're currently booking are of high quality. Pricing actually has gone from being great to being simply good. There's widespread use of interest rate floors, and they're beginning to see some competition both in rates and in terms. Most are reluctant to add any mortgage-backed securities to their investment portfolios because they're afraid of what happens when we stop buying or when we sell. And a number of them are actually harvesting gains in their existing portfolio, because those gains are a significant part of their capital and they need to lock them up. Transaction volume is shifting heavily from credit cards to debit cards, and total transaction volume is up, while the average ticket is down, indicating that consumers are spending from money that they have rather than money that they're borrowing.

On the regulatory front, a number of them reported examiners not willing to follow the new CRE guidance. The reports to me were all about FDIC and OCC examiners, and they're singularly unwilling to use any appeals process or ombudsman to talk about this with those regulators. None of them mentioned Federal Reserve examiners, and we could assume from that that there were no Federal Reserve examiners who were unwilling to follow the guidance, but I think it would probably be better if we were vigilant with our own troops as well. On the new overdraft rules, I talked to one bank that has estimated a 15 to 20 percent hit to earnings per share and has calculated that in the past the cost of providing checking accounts has been increasingly covered by overdraft fees, which led to a proliferation of free checking. In order to reverse this to accommodate the new overdraft rules, the breakeven for checking accounts is likely to be somewhere around $10 per month per account.

I've been struck by the sharp decline in cost and the increase in availability of credit in the debt markets while the opposite seems to be happening in credit provided through banks. So I took a look at loan volumes and found a very different story for the large versus the small banks. The larger banks typically have mortgage, credit card, large business, middle-market lending. The top 25 banks have 70 percent of the C&I loans, 73 percent of the mortgages, and 80 percent of the card debt. They have made extensive use of Fed facilities, Federal Home Loan Bank, and FDIC guaranteed debt, and they're much further along in emerging from the financial crisis. They do have access to capital markets and have repaid or are planning to repay their TARP.

In contrast, the problems for small banks started later and are still building. They have big construction and CRE portfolios. In fact, 60 percent of the total CRE loans outstanding are in the smaller banks. They have 30 percent of the C&I loans, although those loans are predominantly to small businesses. They fund through deposits, Federal Home Loan Banks, CDARS, and brokered deposits. They have limited access to capital, and many of those who did not get TARP, either because they were not allowed to or because they elected not to, now wish they had it as they work through this CRE cycle and are finding problems.

Given the sharp reduction in bank lending, I took a look at loan balances in the third quarter of 2009 compared with year-end 2007. While banks of all sizes have reduced loans, the big reduction has been in the top 20 banks that are just below the top five. For the top five, loans are down just under 2 percent. For the next 20, loans are down more than 10 percent, and for all others, loans are down about 2½ percent. So there's a real concentration in those 20. Inside of commercial real estate, the construction land development, where the portfolios have been hit the hardest, are down 25 percent in banks below the top five, while loans on existing nonresidential real estate are actually up across the board.

Finally, I decided to focus on the two politically hot categories, mortgage modifications and small business. To size the mortgage modification problem, 5.7 million mortgages are now 60 days past due with 2.3 million in the process of foreclosure, roughly equivalent to a year's sales of existing homes. I talked to one large lender servicer who was able to give me some breakdown in the HAMP. He said 20 percent are not owner-occupied, 20 percent have less than 31 percent DTI, and 20 percent don't qualify for other reasons; 10 percent are underemployed or unemployed. Of the remaining 30 percent, half don't accept the offer. Banks were encouraged to get the numbers up by putting people in trial modifications and then gathering the documentation during the trial period. Of those who have made their payments, one-third have submitted all of their documents, one-third have presented partial documents, and one-third have submitted no documents.

The banks are still modifying many loans outside of HAMP, but the loans previously modified are re-defaulting, and rising unemployment is working against them. The clock is still ticking. Banks are now formalizing and streamlining short-sale processes and investing in staffing systems and training, but we're still likely to see three to four million foreclosures.

However, they will be spaced out over two to three years due to all of the foreclosure prevention efforts, the timing of re-defaults, judicial foreclosure processes, and staffing issues.

On the new loan front, Fannie Mae has now raised cutoff FICO scores for even 80 percent mortgages, which would potentially affect as many as 30 million borrowers. The FHA is studying both FICO and downpayment requirements. So even in the government-supported space, term tightening continues.

Turning to small business lending, in the NFIB survey, 15 percent said credit was more difficult to obtain, which compares with a 12 percent level in 1990. But only 5 percent ranked credit as their most important problem—it is well behind weak sales at 33 percent, taxes at 20 percent, government regulations and red tape at 13 percent, and even the cost and availability of insurance at 8 percent.

Our data on small businesses was last done in 2003, but at that point we estimated that only 1 percent of small business borrowing comes from the SBA. With the SBA, the expanded loan guarantee program is now out of money. Changes were made to increase the guarantee to 90 percent with a maximum loan size of 1½ percent and allow refinancing of existing credit. There is a House bill that would extend the program and increase loan sizes. As you might expect, commercial banks are the primary providers of credit, supplying two-thirds of the total credit, but, of that, approximately 40 percent are borrowed under a commercial mortgage. The smaller banks usually underwrite them individually, but they take some form of collateral, preferably real estate, to compensate for less reliable financial statements, the mixing of personal and business assets, and low capitalization. So I would estimate that at least half of the commercial real estate and more than 90 percent of the C&I loans in the smaller banks are small business loans. Larger banks are underwriting centrally using credit-scoring models and moving to limit local overrides. They're reporting losses similar to unsecured consumer credit, and the larger credit card issuers have now designed business card products to work like a traditional line of credit, but they're concerned about the prospect of business lines coming under the same restrictions as consumer credit.

We hear so much about businesses failing due to lack of credit. I tried to find data on the rate of business failure. One bank had researched its own experience and found, to its surprise, that the rate of business failure was not substantially different from earlier cycles. They have hypothesized that low rates have allowed businesses to hang on longer. So the small business job formation problem appears likely to be a new business formation, with new businesses usually funded with personal borrowing and funds from family and friends rather than bank credit. Given widespread balance sheet impairment, I suspect new business formation to be quite low. While SBA programs might help on the margin, I concluded that the best assistance for small businesses comes from low interest rates, enforcement of CRE guidelines, and improving consumer wealth. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. Let me first say I know how pleased everyone must be that we are getting through the go-round this afternoon so that we will have plenty of time tomorrow for our special, though regrettably untelevised, version of "Who Wants to Be an Inflation Fighter." [Laughter] I have read the transcript.

Developments since our previous meeting have obviously been positive, on balance, though not uniformly so. The late-year improvement probably reduces somewhat further the likelihood of what I have previously characterized as a relapse scenario. But even if this modest trend continues through December, I don't think a stronger than expected fourth quarter fundamentally changes the outlook for 2010. In this regard, there remains the important question whether or, more precisely, how much self-sustaining demand will fill in behind the withdrawal of stimulus over the course of next year. For the reasons many of us have rehearsed at previous meetings, and that some of you have repeated this afternoon, the answer to this question is quite uncertain.

One area that unfortunately looks all too certain is unemployment. Even the most optimistic of private forecasters believe that unemployment will remain at very elevated levels throughout next year. Quite apart from the social and longer-term economic damage that may be effected by prolonged high unemployment, my intuition continues to be that a level of 9 or 10 percent places a significant limit on the growth of personal consumption expenditures unless one expects that compensation levels will themselves rise steadily.

Obviously then the contribution of wealth effects would be important for a sustained acceleration in consumption, as, in fact, we see reflected in the forecasts of those who do anticipate stronger PCE growth. Here again, though, there is considerable uncertainty. Indeed, I have noted that even those who sit together on the more optimistic end of the spectrum of forecasts for 2010 disagree on whether housing or equities will be the key driver of rising wealth.

As to housing, at least, while I can tell the story of reduced inventories, lower prices, and less new home construction moving residential real estate eventually in a positive direction, I can equally conceive of such factors as more foreclosures associated with unemployment and a possible jump in mortgage rates associated with the end of our MBS purchases leading to stagnant or even slightly declining home prices.

To be fair, I should also note that some on the more pessimistic end of the 2010 spectrum have been a bit undone by the revisions to 2009 data that revealed a higher saving rate than had previously been assumed, thereby undermining the argument that saving will inevitably jump a good deal next year with consequent negative effects on PCE.

But this example makes my point as readily as the cloudiness around the more upbeat commentaries. We are still learning exactly how the different characteristics of a deep, financially induced recession might confound expectations developed through experience with each of the recessions in the last 60 years, whether mild, moderate, or severe. We will not have the luxury of waiting to see all these differences unfold as we make our policy decisions. We will necessarily be navigating in somewhat uncharted waters, but to this point, I believe we have yet to see a credibly strong current flowing by us.

My basic outlook is thus essentially unchanged from November, despite the noteworthy developments since that time. Near-term prospects remain moderately positive, with the important *major* qualification of employment. As to the second half of 2010 and beyond, a forecast of incrementally to moderately above trend growth remains the best bet, but I continue to see significant, though reduced, downside risks and growing, though still modest, upside risks as well. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. I know you're all expecting a crisp, linear summary of the go-round, but I see that it's past 5:30 [laughter], so why don't we adjourn for a reception and dinner, and we'll see you the first thing in the morning at 9:00 a.m.? Thank you.

[Meeting recessed]

December 16, 2009—Morning Session

Meeting attendees greeted Chairman Bernanke with a standing ovation when he entered the meeting room in recognition of his being named Time Magazine's Person of the Year 2009.

CHAIRMAN BERNANKE. The power of the media. [Laughter] Thank you very much.

MR. WARSH. A little extra pressure for your pithy summary of yesterday's discussion. [Laughter]

CHAIRMAN BERNANKE. We want to start today with Bill Wascher, who will give us some updates on data.

MR. WASCHER.[2] Thank you, Mr. Chairman. We received two data releases this morning—housing starts and the CPI—and you should have in front of you a three-page handout that summarizes the data. The first page summarizes the housing starts data, and you can see from the top line that total starts moved up to an annual rate of 574,000 units in November, with increases in starts of both single-family and multifamily units. The jump in multifamily starts, which is about halfway down the table, basically reverses a sharp dip in October, and that was in line with our expectations. While single-family starts also increased, that increase was smaller than we were expecting. Permits, which are a better underlying measure of starts, increased more than starts in November. But the combination of the permits and starts figures in November was weaker than we were expecting, and it suggests to us that our near-term forecast for single-family starts is probably too optimistic. While I would still think that a gradual improvement in new home sales will lead to a more noticeable pickup in the pace of starts next year, these data suggest that the upturn is lagging a little bit more than we were projecting. The implications of these data for GDP are mainly for the first quarter, given the lag between starts and construction; these data, and our reaction to them, would probably take off a tenth or two of a percentage point from our forecast for GDP growth in the first quarter.

The next page summarizes the data for the CPI. The total CPI rose 0.4 percent in November, which is what we were expecting for the headline number. However, energy prices rose a larger-than-expected 4.1 percent last month, while core prices were about unchanged in November; to two decimal places, they rose three basis points. We had been expecting an increase in the core index of about 0.1 percent. The softness was concentrated in prices of services, especially in rents. In contrast, core goods prices rose 0.2 of a percent in November, with noticeable increases in tobacco prices and in motor vehicle prices.

It looks as if yesterday's PPI release and today's CPI release, taken together, will imply a lower estimate of core PCE inflation in both the fourth quarter and the first quarter than we had

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

in the Greenbook. In particular, it looks as if we'll be down from 1.6 percent in the fourth quarter in the Greenbook to 1.2 percent for core PCE price inflation, and in the first quarter down from 1.3 percent to 1.1 percent. For the total PCE price index, we would revise our estimate for the fourth quarter from 2.8 percent to 2.6 percent; for the first quarter, because of the higher energy prices, we would still be at 1.1 percent. Thank you.

CHAIRMAN BERNANKE. Thank you. Any questions for Bill? [No response.] Okay. I did have overnight to put together my pithy summary, so let me just try to summarize what I thought was a good discussion yesterday.

Economic indicators since the last meeting were generally a bit more positive than expected. Participants cited the November labor report, retail sales, trade data, housing, and financial developments as positive. Global economic growth is picking up, more so in emerging markets than in advanced economies, some of which remain weak. However, although downside risks to growth may be a bit smaller, most participants were not ready to revise their expectations substantially for 2010 from previous projections of moderate growth and continued high unemployment. Anecdotes repeatedly cited uncertainties on the part of business leaders about both near-term and medium-term prospects, reflecting questions about the economy itself and a range of government policies, including fiscal, climate, regulatory, and others. These uncertainties, which are shared by the meeting participants, seem likely to retard new investment and hiring for some time. Participants also debated whether private final demand will be sustained as government supports are withdrawn. Housing provides an example. Although there have been some significant improvements, these may not continue next year as the Fed stops buying MBS, the GSEs reduce their portfolios and tighten terms, the first-time homebuyer tax credit ends, and slow progress in mortgage modification fails to prevent another wave of foreclosures and distressed sales. On the inflation front, price changes seem reasonably well controlled, with some expecting further moderation, especially in core inflation, but others citing possible medium-term risks.

Looking at a bit more detail, recent data on consumer spending were encouraging, as noted. Income and saving this year were stronger than initially estimated. Household wealth is increasing, and sentiment has recently improved some. Evidence on Christmas buying is mixed. Consumers appear to be aggressive in limiting ticket sizes and pursuing discounts. Households were likely encouraged by somewhat better news about the labor market, but high unemployment seems likely to cap growth in consumer confidence and spending.

In the labor market, elements of good news besides reduced job loss included increased hours, reduced unemployment claims, and more temporary hires. However, although job losses have moderated, firms remain quite reluctant to hire, and conditions overall remain very weak. Extended high unemployment, which seems likely if growth is not much above trend, could leave lasting scars on the labor force.

As also noted, CEOs remain cautious. Large firms have good access to credit, but are holding lots of cash rather than hiring and investing. Smaller bank-dependent firms find credit much more difficult to obtain, although there was some difference of view as to whether these constraints would prevent small firms from expanding when demand picks up. Productivity gains have been significant, as firms have cut costs or looked to meet demand without adding workers. Certain segments are performing better, including some manufacturing businesses, high tech, and agriculture, and shippers have seen an uptick in their business.

Financial markets continue to improve, although the risk of relapse cannot be ignored. Some markets, such as securitization markets, are still not functioning well. Generally, asset values do not seem out of line with fundamentals, although as investors have become less cautious they may have also become less discriminating. Market sentiment has been strong enough to overcome setbacks, like the Dubai episode, but this episode may be indicative of the vulnerability of sovereign credits. Banks are raising capital and in some cases paying back the TARP. Bank credit, however, continues to contract, reflecting lack of demand, weak borrower quality, the risky macro environment, and bank concerns about their own capital positions. Some banks complain about overzealous examiners. Banks are looking for credit losses to top out in 2010, except in commercial real estate. Large and small banks have different portfolio mixes, with small banks particularly vulnerable to the worsening CRE problem, and many are still likely to fail. Small banks are also more likely to be lenders to small businesses.

Inflation seems reasonably controlled. Core inflation seems to be moderating, though the underlying trend is not entirely clear, not only because of some energy pass-through but also some special factors, including an increase in the prices of nonmarket components. The median CPI and trimmed mean PCE inflation are flat to down. Anecdotes suggest that firms have limited ability to raise prices in most cases. Compensation figures were revised up, but wage growth in general still appears quite moderate, and unit labor costs are further reduced by strong productivity; that is, in terms of the models, marginal costs do not seem to be rising quickly. Inflation expectations are broadly stable, though inflation risk premiums increase the difficulty of extracting these expectations from TIPS. As has been the case, views around the table differed on the size of the output gap and its relevance to inflation determination. Energy price increases and declines in the dollar have recently reversed.

Medium-term risks, other than the Fed’s balance sheet, include the U.S. fiscal situation and import costs. We discussed the structure of the Fed’s policy regime, including exit-sequencing and the development and communication of a policy rule. That’s my overview of what I heard. Obviously, there's diversity among the group. Are there any comments or questions? [No response.]

As always, it's very difficult to add intelligent new and insightful ideas after all of you have already spoken, but let me just say a couple things. First, like everybody else, I was heartened by the intermeeting data, and I think I may have taken just a bit more signal than some of you from it. In particular, even though the overall economic growth in the second half was not much changed by the revised data, the contour was changed. The third quarter was weaker, the fourth quarter looks to be relatively strong, perhaps 4 percent or more, and so there is a sense of somewhat more momentum going into 2010.

At the same time, we saw developments, particularly in the consumer sector, which are a bit encouraging towards the view that, as inventory adjustments follow through and as other temporary factors weaken, final demand will be able to pick up and continue the moderate recovery that we anticipate in 2010. So, like most of you, I haven't significantly revised my modal forecast, but I do have somewhat more confidence that the momentum will be sustained into Looking specifically at the consumer, a number of things were encouraging. I think the simple fact that there was more demand for housing and autos is actually encouraging, not just in terms of total spending dollars but also because the willingness of consumers to commit to longer-term durable goods is in itself an indication of greater confidence in their own income and the future of the economy. And, more generally, we did see improved attitudes as measured, for example, with the Michigan survey. Although—let's be careful—they're still very low in historical terms, and though the current conditions index improved considerably, the expected conditions measure didn't do very much. So we are seeing some improvement there, but, again, we should be cautious.

On consumer fundamentals, we have seen the upgrade of income, which, as some have noted, helps explain how you can consume more and save more at the same time—[laughter]—which has been happening. And there are some positive developments, for example, in energy prices, which will help real income; in inflation expectations, which help expected real income; and in wealth. On the latter, as we saw in the flow of funds data, about a third of the losses have been reversed so far, so there is some continued improvement on that front. That's all positive, and it gives us more sense that the consumer will not fade as the handoff happens.

On the labor market, I think we can find a few positive elements. We've noted a number of things from the labor market report. I think, more generally, there are some indications that the recovery will not be as "jobless" as it was in the last two recessions, given the depth of the decline; therefore, there's likely to be a tendency for jobs to come back, given that the productivity gains we've seen are not sustainable and that there's going to have to be some mean reversion. So, if you put together moderate growth, likely weaker productivity gains, some strength in a few individual industries—manufacturing and others—the presumption is that we will see some job creation and some positive payroll numbers pretty soon.

That being said, I think I would come back to the theme I echoed in a couple of speeches over the intermeeting period. I still see the labor market and the credit market and the interaction between them as being major risks and drags on the expansion. In the labor market, I think it's really important for us to keep in mind what a deep hole we're currently in. To give two numbers that you don't always cite, the employment-to-population ratio has fallen from a peak of 62.7 percent to 58.5 in the most recent month—a very substantial decline in the number of people working. The aggregate weekly hours of production workers has fallen more than 8 percent from the peak. Compare that with a decline of less than 6 percent in the 1981-1982 recession—there has been an enormous decline in labor input. And, as a number of people noted, starting with President Rosengren, that decline in labor input is not simply bodies; it is on other dimensions as well—hours per week, overtime, and so on. And as was also noted, as labor input increases, it will happen across a variety of margins and not just on the unemployed. In fact, given the duration of unemployment and the number of people who will be losing skills and labor force attachment, there may be some preference, as firms go out and look for workers, to expand on the intensive margin rather than on hiring people who will not be as attractive from the employer's perspective. Just to give you a sense, simple arithmetic says that an increase of 20 minutes in the average workweek is equivalent to one and a half million jobs in terms of labor input. So there is a very substantial substitutability across those dimensions.

The second area that I talked about in my remarks over the intermeeting period, of course, is credit. It was noted around the table by a number of people that credit availability for large firms, including large banks, appears to be quite good, surprisingly good to some extent, whereas, for small businesses that are bank-dependent, obviously conditions are much more difficult. There was an interesting discussion around the table about how significant the constraints on small business credit will be. A number of people noted that the NFIB surveys put small business views about tight credit as being only fourth or fifth on the list of concerns. But, remember, we are now in a period where, in some sense, the binding constraint is demand. The question is: What will happen when there is scope for expansion, and will firms be able to get the credit they need to expand? I think it is instructive to recall the post-1990–1991 recession period, the period of the famous financial headwinds, when banking conditions were much less severe than now. Credit extension was much better; NFIB indicators and the terms of credit from the survey of senior loan officers—all of those things were less severe than they are today in the economy. So my best guess is that we will see some concerns about credit as the expansion begins, and that will be a reason for more moderate economic growth.

Contributing to that is that the situation is not like the post-1990–1991 period, where the problems fairly quickly resolved themselves over the subsequent couple of years. We're continuing to look, as a number of people have noted, at still rising NPL rates, commercial real estate credit, and other issues that will put stress on the banking sector. And, notably, Governor Duke made some very interesting points about the differences in product mixes between large and small banks. In particular, small banks are both more vulnerable to the CRE problem and are a bigger source of credit for small businesses and local economies.

Again, to summarize the two parts of my remarks there, the first was that I thought that the intermeeting data were encouraging, in the sense that the moderate growth scenario looks more plausible and the risks to it seem less. But I don't see a great deal at this point to suggest that economic growth will be much greater than the moderate pace scenario. Going back to the jobless recovery theme, I think it is striking that the staff is projecting 200,000 to 300,000 jobs a month starting in the second quarter, with even more in 2011, and even so unemployment rates remain at 9.6 percent at the end of next year, for example. So given those two things, given the depth of the hole we're in, we're going to need a lot of jobs to get back to more normal conditions.

I think inflation conditions are fairly stable, though obviously not entirely satisfactory in all dimensions. Over the intermeeting period, we did see oil prices down about $10, although distant futures prices did not change much, so that doesn't really change the trajectory very much. I was actually kind of encouraged to see the way the dollar has changed its behavior. We've had this funny pattern where, whenever there's a good day in the stock market, the dollar drops because of this safe-haven effect. Since the November employment report, we've gotten a more normal positive correlation—good news about the U.S. economy is good news for the dollar. I think that's encouraging, because it means that economic growth will not translate immediately into those kinds of import inflation pressures. People discussed the difficulties of interpreting the TIPS spreads. My overall sense is that there's not a major shift in the inflation expectations of the financial markets. Likewise, the surveys of forecasters and households are also fairly benign. So all of those things, I think, are moderately encouraging.

That being said, I do feel we are, in some sense, walking on eggshells, because there are so many delicate issues of confidence in financial institutions, in our fiscal position, in the Fed's policies and exit strategy, that there just seems to be a greater and pervasive sense of instability and risk, given what we have been through in the last couple of years. But, again, I think overall the intermeeting period was good, and although we're still a long way from where we want to be, we're moving at least at some speed in the right direction.

So let me stop there. Are there further questions or comments about the economy? [No response.] In my summary, I took note of our interest in discussing in January the elements of our policy framework—how we would think about exit and how we would think about communication and perhaps policy rules as well. So we'll be in touch with you about some of those issues. If there are no further comments, I'll turn to Brian to start the second round.

> MR. MADIGAN.[3] Thanks, Mr. Chairman. I will be referring to the package labeled "Material for Briefing on Monetary Policy Alternatives." This package includes the draft policy statements for alternatives A, B, and C as they appeared in the Bluebook.
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> Your policy decision today takes place against a backdrop of a gradual but fairly steady improvement in financial conditions and in the economic outlook. As David noted yesterday, the staff's forecast for economic growth in the fourth quarter has been revised up noticeably. And the staff sees the rate of expansion picking up steam

[3] Materials used by Mr. Madigan are appended to this transcript (appendix 3).

over the next couple of years, reaching 4½ percent in 2011. Moreover, as noted yesterday, some of you see the downside risks to the forecast as continuing to ebb, extending a trend evident in your most recent quarterly forecasts. Nonetheless, resource slack seems likely to remain substantial for some time. In the Greenbook forecast, that slack, together with stable inflation expectations, pushes inflation down to about 1 percent by the end of the forecast period.

With output seen as tracking well below its potential over the next few years and inflation projected to be edging further below the level that policymakers prefer over the intermediate term, the Committee might be dissatisfied with the outlook and believe that it could improve economic outcomes by providing additional policy stimulus. The Committee might also see additional stimulus as warranted in order to guard against the lingering risk that spending, output, and employment could fall well short of the baseline outlook—for example, because financial market conditions could relapse as a range of government support programs are withdrawn over the next few months. Under alternative A, page 2 of the package, the Committee would provide additional stimulus by boosting its purchases of agency mortgage-backed securities from the currently planned amount of $1.25 trillion to $1.5 trillion. In order to accomplish the increase in purchases without putting undue strain on the MBS market, the Committee would extend the time frame for these transactions through the end of the second quarter. Planned purchases of agency debt securities would stay at $175 billion. The Committee would also leave its target range for the federal funds rate unchanged at 0 to ¼ percent. But it would alter its forward guidance slightly to indicate that it anticipated that economic conditions would warrant *this* exceptionally low range for the federal funds rate—that is, 0 to ¼ percent—for an extended period of time, thus underscoring the “low for long” message. Market participants appear to see little likelihood of an increase in asset purchases, and thus 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 ahead by a tenth or two of a percentage point relative to the rate that would otherwise prevail.

If the Committee instead believes that, in current circumstances, additional monetary policy stimulus would not be helpful on balance, it might prefer to adopt the policy actions and language of alternative B, page 3. For example, even though the outlook for real activity and employment may be unsatisfactory, policymakers might also believe they cannot take for granted that inflation expectations are tightly moored and worry that expanding asset purchases further could push inflation expectations upward. Also, despite significant strides in developing reserve management tools, the Committee still might be unsure about their likely effectiveness. If so, the Committee might think that the risks entailed in a further increase of asset purchases and the associated expansion of the balance sheet and reserves could outweigh the potential benefits.

Under alternative B, the Committee would leave unchanged at this meeting the amounts and timing of its large-scale asset purchases as well as its target range for the federal funds rate. The first paragraph of the announcement would set the stage for this decision by again noting that economic activity is picking up and by adding that the deterioration in labor markets is abating. In view of the continued advance in equity prices over the intermeeting period and further declines in various private borrowing rates, the paragraph would note that financial markets have become more supportive of economic growth. The inflation paragraph would continue to mention that the Committee expects that inflation will remain subdued for some time. And the third paragraph would again indicate that the Committee continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for an extended period.

The most significant change relative to the November statement would be the inclusion of the last paragraph. In September and November, your statements noted that "the Federal Reserve will continue to employ a wide range of tools to promote economic recovery and price stability." That followed your indications, expressed since last December, that the Federal Reserve would be using "all available tools." With the LSAPs scheduled to wind down over the next few months, usage of many of the liquidity facilities dwindling or already at zero, and authorizations for many of the facilities currently extending only through February 1 and apparently likely to expire at that time, the Committee will soon need to make some adjustment to the "wide range" sentence. Under alternative B, that sentence would be dropped today, and the Committee and the Board would indicate their anticipation that most of the Federal Reserve's liquidity facilities will expire on February 1. This statement would reference the June announcement that indicated that "should the recent improvements in market conditions continue, the Board and the FOMC currently anticipate that a number of these facilities may not need to be extended beyond February 1." The paragraph would indicate specifically that the AMLF, the CPFF, the PDCF, and the TSLF were likely to be closed on February 1. It would also note that the Federal Reserve would be working with its foreign central bank counterparties to wind down the temporary liquidity swap arrangements by February 1. It would further indicate that the Federal Reserve expected to scale back amounts provided under the TAF, and it would indicate that the anticipated expiration dates for the TALF remain unchanged. Importantly, the final sentence would note that the Federal Reserve is prepared to modify these plans if necessary to support financial stability and economic growth.

Market participants generally appear to expect that today's statement will encompass relatively few changes from November's, more or less along the lines of the first three paragraphs of this alternative. The inclusion of the fourth paragraph would probably come as a modest surprise, and, if anything, it might suggest a slightly greater inclination to initiate policy firming than market participants expect. However, given that most market participants appear to expect the facilities to close on February 1, given the retention of the key "extended period" language, and given the maintenance of the existing LSAP amounts, it seems unlikely that the fourth paragraph would cause the statement to prompt any significant market reaction on net.

Another option, perhaps, would be to separate the fourth paragraph from the Committee's monetary policy statement and publish it on a standalone basis sometime in the next few days. Indeed, over the past two years, the Federal Reserve has generally issued announcements related to liquidity facilities separately from FOMC statements. However, that practice was driven importantly by the timing of decisions on liquidity facilities, which did not necessarily align with FOMC meetings. It was also driven by the need to coordinate statements with foreign central banks, which generally made it impossible to release these announcements along with the FOMC's policy statement. In the current situation, we understand that foreign central banks do not feel the need to coordinate with a statement referencing the likely termination of the swap lines on February 1, so there would seem to be little need for delay on that score. Perhaps also arguing for inclusion in today's statement is the point that, if the paragraph were to be released separately sometime in the next few days, the announcement today would still need to be modified somehow to foreshadow that possibility and so not blindside market participants. That modification obviously would be noticed and suggest that something was afoot.

The Committee could also couple this paragraph with alternative C, page 4. Under this alternative, the Committee would begin to reduce the degree of monetary policy stimulus at this meeting. The Committee might be motivated to take this action now if it did not anticipate that economic slack would be providing much restraint on inflation and was concerned that a large amount of stimulus is in train and risks eventually driving inflation upward, perhaps in part because of an effect on inflation expectations of the very large and growing Federal Reserve balance sheet. In providing the background for this action, the first paragraph of the statement for alternative C would generally be similar to that for alternative B, but it would not cite the list of factors restraining household spending or the continued cutback in business fixed investment. The second paragraph would note the Committee's expectation that inflation will remain at levels consistent with price stability, but it would base that expectation primarily on appropriate monetary policy adjustments rather than the substantial resource slack that is cited as an important factor under alternative B. The Committee would retain for now its target range of 0 to ¼ percent for the federal funds rate, but it would indicate an expectation that economic conditions are likely to warrant "low levels," rather than "exceptionally low levels," of the federal funds rate for some time, rather than for an extended period. Moreover, in view of continued improvements in financial markets and the economic outlook, the Committee would indicate that it decided to cap its purchases of agency mortgage-backed securities at $1.1 trillion and its purchases of agency debt at $160 billion.

Of course, market participants do not appear to anticipate a statement along the lines of alternative C. Even without the final paragraph, the adjustment of the forward guidance and the reduction in asset purchases would come as a considerable surprise to market participants and would suggest that the Committee was preparing

> to begin to firm its policy stance relatively soon. As Brian Sack noted yesterday, a Desk survey indicated that most primary dealers believe that the Committee will remove the "extended period" reference at least three meetings before commencing tightening. So quite possibly market participants might see a shift to an expectation that rates would remain low only "for some time" as suggesting that the Committee might begin to raise its target for the funds rate in the spring, say, at the March meeting. Interest rates would likely jump markedly in response to this information, prompting an increase in the foreign exchange value of the dollar and a drop in equity prices. The inclusion of the fourth paragraph on closing the facilities would amplify the message that the Federal Reserve was now moving quickly toward a significant tightening of policy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Are there questions for Brian? [No response.] Okay. If there are no questions, let's begin our go-round with President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I favor alternative B, but I would like to emphasize something that I've said in the past. I continue to see a persuasive case for further policy easing. We are far below maximum sustainable employment, inflation is undesirably low, and almost any version of the Taylor Rule, as well as the Bluebook's optimal policy simulation, recommends a negative setting for the federal funds rate at the present time. We need to remind ourselves of this fact to counteract the very natural instinct to tighten policy as the economy recovers. It's true that, if we had been free to lower the federal funds rate into negative territory, it would probably be appropriate to start tightening in the not-too-distant future. But we were constrained on the way down by the zero bound, and, in the face of that bound, systematic policy calls for us to hold the federal funds rate near zero for a long time to come.

Alternative B includes a paragraph addressing our special liquidity facilities. I do not consider the proposed language very controversial, with one exception. I'm concerned about phasing out TALF support for newly issued CMBS. I think it's too soon to announce the termination of that support. Outside of CRE lending, financial conditions have improved considerably, and it's appropriate to allow the other facilities to expire as scheduled. The reaction should be minimal because few observers expect them to continue.

In contrast, our decisions relating to the LSAP programs are important from a policy perspective. The question of whether or not to reinvest SOMA holdings as they mature is an aspect of a broader policy decision concerning these programs. I do see some advantage to allowing our agency-related holdings to run off. This is a mechanistic strategy, but it creates a self-liquidating feature for our MBS portfolio—an exit strategy that shrinks our holdings over time in a manner that will be predictable to markets, minimizing the possibility of abrupt movements in yields that could result from further discretionary asset purchases or sales and ongoing market speculation about our plans.

I'm encouraged by the staff assessment that allowing our MBS holdings to run off is likely to raise mortgage rates by only a few basis points. If so, I think the benefits of increased predictability and a well-defined exit strategy will likely outweigh the small, albeit undesirable, contractionary effects of permitting our MBS holdings to contract before we would ideally withdraw stimulus. My bigger concern is that we just don't know what will happen to MBS spreads and mortgage rates as we wind down our purchases over the next several months. Many market participants expect rates to spike up considerably. And if that happens when the economy is still very weak, and the housing markets remain fragile, I think we may need to resume purchases.

I agree with President Bullard that it's important to preserve the flexibility to tailor LSAP purchases and sales to emerging economic and financial conditions. The final line in paragraph 3 states that our purchases are conditional on evolving conditions, and I consider that line to be more than mere boilerplate. We will need to take that proviso seriously during the next few meetings as we gain a better idea of how winding down our programs is affecting spreads and yields. In the meantime, it's worth strategizing about whether there is any way for us to gear the pace of purchases or sales to evolving conditions without targeting a specific mortgage rate and without creating undue uncertainty and excess volatility in the markets.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chairman. I, too, support alternative B. The Greenbook assumes no change in interest rates through 2010. That is consistent with my own view of appropriate monetary policy and is consistent with communicating that we expect to maintain very low rates for an extended period of time. If outcomes are similar to the Greenbook forecast, removing the "extended period" language is a topic best left for the second half of 2010. Removal of that language is likely to set off a significant change in market interest rates. It will not be appropriate until private sector growth is on a sustainable path and labor markets have improved significantly.

In terms of exit strategy, selling a portion of our holdings of mortgage-backed securities should not be done in 2010 if the economy unfolds as envisioned in the Greenbook forecast. Uncertainty about the amount and speed of sales of our very large holdings of mortgage-backed securities would almost surely drive up the risk premium required by private purchasers of mortgage-backed securities. Conversations with a variety of market participants in Boston indicate that such sales are not anticipated and would be viewed as a signal that we wanted mortgage rates much higher, with the potential to dramatically slow a housing sector just beginning to recover.

Should the economy unfold as in the Greenbook forecast, with only gradual improvement in unemployment and the inflation rate well below 2 percent, I do not believe that we will need to raise rates either through increasing the interest rate on reserves or removing reserves from the system until at least the end of next year. The risks to real side recovery remain significant, and the costs of the downside risks outweigh the costs associated with any upside risks.

I'd like to follow up on the discussion yesterday on the primary credit rate. If we were to keep the "extended period" language and raise the primary credit rate in January, it may send a confusing signal to the market. While we would likely want to raise the primary credit rate as we implement the term deposit facility, I would prefer to raise the primary credit rate closer to the time we are implementing the facility and possibly in conjunction with removing the extended period language, which I would hope would not be at the January meeting.

I also concur with President Yellen's comment on the TALF. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. Given the increasing signs that the economy is gaining momentum, I think it's important for this Committee to consider language that begins to prepare the market for the possibility that we will need to begin reducing the degree of policy accommodation and our interventions in private markets sooner rather than later. The time to change policy is not now, but I do believe the time is getting closer. I think the language in alternative C does a better job of this than the language in B, with the change in the forward guidance regarding the path of the funds rate substituting "some time" for "an extended period of time." I also note that paragraph 3 in alternative C begins with the phrase "at this meeting." I wasn't quite sure about the intent of that, but my interpretation is—and I have some sympathy with the view—that this language does emphasize that things may change at some future meeting, and it sort of keeps our options open that changes can come to pass.

My own view is that, as economic growth picks up and becomes more sustainable, real interest rates will rise. Appetite for risk will increase, and that will lead to a rise in the opportunity cost of the vast amount of excess reserves that sits in the system. The money multiplier will go up, and those excess reserves will flow rapidly out into the economy, as the opportunity cost gets higher and higher for banks to hold onto them. The combination of more sustained growth and a flow of excess reserves into the economy would mean that if we want to retain control over those excess reserves, we will have to raise the policy rate. So as real growth picks up and becomes more sustainable, our policy rates should rise with that. Put another way, we may lose control of all those excess reserves.

As I've discussed at earlier meetings, I favor the inflation paragraph in alternative C primarily because it emphasizes the dependence of inflation on the stability of longer-term expectations and on policy adjustments that we will take to keep inflation levels consistent with price stability, both on the positive and negative side of our target. I like conveying this idea that it is monetary policy actions rather than structural features of the economy that influence inflation over the longer term. Moreover, I think that the language of paragraph 2 in alternative C will help stabilize and anchor expectations, as it more strongly signals our commitment to maintain price stability. I think this can only help us in a period when the dispersion in inflation forecasts has widened and uncertainty has increased. As I said at our last meeting, the dispersion of the forecasts for long-term inflation, both in our SPF survey and our Livingston survey, has widened noticeably, and this should concern us.

I favor including the last paragraph of alternative B, which is repeated in alternative C, regarding the expiration of some of our facilities on February 1 for three reasons. First, and most importantly, I believe it is the right policy. The improvement of financial conditions over the past year has been swifter than some of us might have expected, and financial conditions appear to be returning to normalcy. I see no compelling reason at this point to keep the facilities open beyond February. Second, the market expects that these facilities are going to be wound down early next year, so I don't think the paragraph would cause much of a market reaction, and it should help reduce uncertainty around that expectation. Third, it's becoming progressively harder to justify the existence of some of these liquidity programs as financial market conditions improve. I assume that the Governors are going to have to take a decision soon about whether exigent and unusual circumstances continue to exist to justify the programs. In my view, it's becoming harder and harder to do that. My only comment is that it's not clear why we shouldn't further reduce the size of TAF auctions at this point. They're still significantly undersubscribed, and we haven't been able to increase the rate. There will likely be interactions with the term deposit facility, as we mentioned yesterday. I suggest we reduce these auctions again to see if we can't get supply more in line with demand.

As to our discussion yesterday about increasing the penalty rate, the discount rate, I'll repeat my plea on this. I'm sympathetic with President Rosengren and repeat my plea that we not treat our exit tools in isolation. We need to treat them collectively and have a discussion in January about how all the pieces of our exit tools fit together, with an eye toward what form of monetary policy framework we'll want to use after this exit strategy is over. That is, we need to know not only where we're going, but also how all of these different tools fit together to get us there, because there are a lot of interactions. It's difficult to determine the appropriate exit strategy and optimal size of our balance sheet without knowing which alternative monetary policy implementation framework we're headed towards and what our policy rate strategies will be. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Mr. Chairman. In our November statement, we committed to maintaining a target range of zero to 25 basis points for the fed funds rate as long as the economy continued to exhibit low rates of resource utilization, subdued inflation trends, and stable inflation expectations. I believe that those conditions are still in place, and so I am happy to maintain the fed funds rate in that target range.

Also, for the reasons ably described by President Plosser, I support committing ourselves to plans for ending the liquidity facilities as is done in both alternatives B and C. I do not see the utility of our buying the extra $150 billion of agency MBS and $15 billion of agency debt in alternative B, but I am willing to support the thrust of the alternative, because our language in the November statement about the LSAP signaled a strong commitment to those extra asset purchases.

With that said, I am concerned that alternative B is so silent about our plans for the balance sheet beyond March. I would recommend changing the last sentence of alternative B to read, "The Committee will continue to evaluate the size and composition of its holdings of securities in light of the evolving economic outlook and conditions in financial markets," so that's basically changing from "purchases" to "holdings." This change would communicate to the public that we may choose to reduce the balance sheet by failing to reinvest or by selling assets. My own view is that we should begin such a reduction in the second quarter of 2010, at least by failing to reinvest and, more desirably, through additional sales.

Why do I favor reducing the balance sheet? Well, first, the benefits of our interventions in these markets have fallen greatly. I am convinced from evidence offered by the New York Fed that the LSAP had big benefits in late 2008 and early 2009, but during that period financial markets were functioning poorly. Risk premia in particular markets became largely disconnected from one another. But as pages 12 and 13 of the Bluebook emphasize, these conditions have greatly ameliorated, and investors can more readily substitute across various financial assets. In these circumstances, reducing our positions will have a muted effect on yields. The benefits, therefore, of our big balance sheet have been greatly reduced, and our big balance sheet is not without cost. It confronts us with the low probability possibility of high inflation. Banks have $1 trillion of excess reserves. These reserves represent an inflation risk generated from potential changes in household expectations.

The logic here is simple. If households believe that the price level is about to rise, they will demand more liquid deposits in order to make their transactions. One of the five memos for the inflation dynamics session we're going to get is by Simon Potter and other coauthors, and it indicates how increases in government debt can lead to exactly those kinds of changes in household beliefs. Given those changes, banks can readily accommodate the extra demand for deposits because they're holding so many excess reserves. The extra deposits in the hands of households become extra money chasing the same amount of goods, which has the possibility of generating inflation. In this way excess reserves are a vehicle for households' expectations about inflation to become reality.

One way this chain of events could take place is for banks to make additional loans. However, their doing so would mean that they would be significantly changing the risk composition of their portfolios. My own belief is that deposit creation would be fueled instead by households and firms selling banks relatively illiquid but relatively riskless securities like corporate bonds, municipal bonds, and Treasuries. Households and firms now own about $4 trillion in such securities, which is enough to expand demand deposits by 600 percent. This expansion, obviously an extreme case, would put enormous pressure on the price level. I'd be the first to say that this inflationary chain is only a possibility, and I agree with market assessments that it currently has a low probability of occurring. But one lesson I have taken away from the past five years is that our conduct of policy should take account of exactly these kinds of low-probability adverse tail events.

The staff is currently exploring the use of reverse repos and term deposits. These facilities have potentially useful ways to accommodate transient reductions of excess reserves. In contrast, asset sales are a more effective commitment to a permanent reduction in our balance sheet. This difference means that, at a minimum, asset sales are a useful complement to term deposits or reverse repos. As I say, I would like to see shrinkage in our balance sheet beginning in the second quarter of 2010, but now I think it's worthwhile for us to start to foreshadow that possibility by changing the language of alternative B as I have recommended to refer to holdings of securities as opposed to simply talking about purchases. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Fisher.

MR. FISHER. Well, Mr. Chairman, on page 156 of the 177 pages of the last transcript, I said, "My one suggestion, which I don't think will carry the table, is that we change the term 'extended period' to 'for some time.'" Mr. Chairman, my one suggestion, which I don't think will carry the table, is that if we do change the term "extended period," we change it to "for some time." I'm going to be a broken record on that, but I know it will not carry the table.

Here's the point. I'm against expanding the balance sheet. I take the comments just made by my predecessor commentator quite seriously. But I do believe that the language in alternative B is acceptable even without changing "for an extended period."

I would note President Rosengren's excellent point that we consider the treatment of the spread on primary credit and its juxtaposition against the "extended period" language. I actually was caught quite flat-footed by that discussion yesterday—unprepared for it. I'd like some time to think about commenting on it. I'd like to see where it is sequenced into our exit strategy. I understand the theoretical desire to re-widen that spread. I do worry about the signal it's going to send, by the way, to small and community bankers. I don't quite understand the full composition of who accesses primary credit, and I could see some interpreting it as: "You're still biased towards the big guys who are more active in the fed funds market and penalizing smaller borrowers who may want to access the primary credit window." So I'd like more time, and I'm a little bit concerned that we're rushing that discussion, particularly in the context of these broader things we have been talking about. So I would ask very much that we not rush this into the first week of January.

To sum up: against expansion of the balance sheet, remain concerned about the phrase "extended period," because I think we've boxed ourselves in there—we didn't get much for it, but it's there.

The third paragraph is very good. We did what we said we were going to do when it was necessary to do it, and we're done. We aim to complete these liquidity facilities and, indeed, we signaled that we're on that road for asset purchases unless, as President Yellen points out, it becomes necessary, which I think we cover in the very last sentence, to modify our plans in order to preserve financial stability and economic growth.

I have one other editorial suggestion in the first paragraph whether we use alternative B or C. We talk about the housing sector. We talk about household spending. We talk about business still cutting back on fixed investment. And yet, in your excellent summary of what we said, we have one point that is not included in there, which is the reluctance of businesses to expand overhead, including payrolls. My editorial suggestion would be at the end of the sentence that begins with “businesses are still cutting back on fixed investment, though at a slower pace; they continue to make progress in bringing inventory stocks into better alignment with sales, but remain reluctant to expand overhead, including payrolls.” I would insert that in either B or C. It is nowhere else referenced in this statement, and I think it’s a very important point.

CHAIRMAN BERNANKE. Say it again, please.

MR. FISHER. Yes, sir. With the sentence that reads, “Businesses are still cutting back on fixed investment, though at a slower pace; they continue to make progress in bringing inventory stocks into better alignment with sales.” I would add, “but remain reluctant to expand overhead, including payrolls.” This is what we heard at the table. You summarized it eloquently. It is not in the statement, and I think it should be. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. “Remain reluctant to expand overhead, including payrolls.”

MR. FISHER. “But remain reluctant to expand overhead,” comma, “including payrolls.”

CHAIRMAN BERNANKE. Okay. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I support alternative B. On the first two paragraphs, I thought they nicely captured the slightly better outlook that we heard around the table, but without changing the fundamental contours of the expansion that most of us expect. So I thought they were in pretty good shape. On President Fisher’s suggestion, I think I would amend your suggestion in the following way. I think this would be okay—it would be interesting to hear what other people think. “Businesses are still cutting back on fixed investment, though at a slower pace, and they remain reluctant to add to payrolls." I think this reference to overhead is a little confusing.

MR. FISHER. Well, payrolls are a big part of overhead. So that would be—but I think we need to include that point.

MR. KOHN. Then "they continue to make progress." I think we did hear that around the table, and it's not inconsistent with the notion that the deterioration of labor market is abating. So I think that would be all right.

On the third paragraph, I agree with an awful lot of what President Yellen said. I think we're still in an unsatisfactory place, with the outlook for income, employment, and inflation still suboptimal for the next several years, even with a negative real federal funds rate in place. If we had a positive nominal federal funds rate, I'd probably be arguing for some easing, but we don't. I think there's uncertainty about the benefits of adding to our longer-term purchases and some costs to that as well, so I'm not prepared to argue for that. So I'm fine with leaving that as we have it. But I do think it's important, as President Kocherlakota said, that we're looking at low rates of resource utilization for some time, subdued inflation trends—we just had some confirmation of that this morning—and stable inflation expectations. So I feel very strongly that we need to retain the "extended period" language.

With every improvement in the economy and with the passage of time, we get closer to the eventual time when we'll have to tighten policy, but I think that's still some time away. I worry that the natural real rate could be very low for some time. The story we're telling is one in which we have these headwinds, as you've been saying, Mr. Chairman, in bank credit, and as they go away, things kind of snap back and the policy rate can be normalized by historic standards under those circumstances.

My concern is that we came into this episode with not a very high real interest rate, which seemed consistent with the economy producing at right around full employment and not much inflation pressure outside the commodity and petroleum sector. We have to replace a bunch of consumption. So presumably consumption as a proportion of GDP is going to be lower going forward, financial services as a proportion of GDP are going to be lower going forward, and residential construction as a proportion of GDP is going to be lower going forward. This is a much more balanced economy. But we need to crowd in investment and net exports to replace all that, especially because I don't think any of us want to crowd in government to replace all of that on a permanent basis. That's not a sustainable situation. So I think the issue of when to begin normalization of the real federal funds rate and what that's going to look like is one in which I see a potential for a lot of softness for a long time to come. And I think it's too early, President Kocherlakota, to change the purchases to holdings. Let's consider that as part of the late January meeting when we discuss the exit strategy.

On the last paragraph, I am in favor of including it—the funding markets have returned to normal in most areas, short-term markets and banks are able to access funds without our help, with people issuing commercial paper or accessing funding without our help. It's not an entirely riskless thing to suspend these. We don't know to what extent our being there as a backstop is providing the confidence to keep these markets going, and all of this funding has occurred in the context of very reduced demands for funding. Banks and corporations are shrinking their balance sheets. When that turns around, it's not clear what's going to happen. So it's not riskless, but it's worth taking the risk. I think we need to do that and wind up these facilities and see what happens.

Securitization markets are a more difficult picture, I think, especially for the new issue CMBS, as President Yellen pointed out. It's still a troubled market. There's very little activity. I did hear some mildly encouraging things from Brian Sack yesterday. It's beginning to come back. Still, I think we could stick with the current wording, but, as President Yellen noted, we should take that last sentence seriously. If we get into the spring and the new issue CMBS market is still broken, we could think about extending that, I think, and evaluate the situation then. I think it's a good idea to include this paragraph in the announcement. This is a collaborative effort between the Board and the FOMC. I think as long as the "extended period" language is still here, people won't take it as an early exit signal but rather appropriately as a signal that we see the financial markets are working better and we don't need the unusual liquidity backups. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I also support alternative B, but with one change. I would agree with President Plosser that the inflation paragraph from alternative C is the more appropriate one. The inflation paragraph in alternative C says the following: "Longer-term inflation expectations have been stable, and the Committee expects that, with appropriate monetary policy adjustments, inflation will remain at levels consistent with price stability." I think that's a better statement of what we're up to here at the FOMC. It takes ownership of the inflation outcomes, which I think is appropriate for the Committee, and I also think that statement does not preclude any factors that might influence inflation. We look at many things. We look at all the indicators that we can, both in the U.S. and globally, and the factors that might influence inflation. But it does claim responsibility that at the end of the day it's up to us to maintain low and stable inflation.

Future statements may have to reconsider what we're saying about the federal funds rate. I think this is an issue that we need to think about. Is the federal funds rate really the primary interest rate instrument going forward? I thought Brian Sack's report highlighted issues about federal funds rate control in the environment in the next few years, maybe longer. It seems to me that might have implications for credibility and communication for the Committee, and so I think we need to think about that issue. In particular, is the interest rate on reserves being viewed as the primary policy rate going forward, and is that sensible, and does that work in our models?

The next meeting will be an important one for thinking about how to play the asset purchase program going forward. We can discuss it in more detail at that time, but, as I said yesterday, I would prefer that we think carefully about how to actively manage the return of the balance sheet both to normal levels, as one concern, and to an appropriate mix of assets as another concern. With the very large size, we're going to have to do that over a period of years, so we need a strategy about how we're going to get there so that we don't have to make adjustments in any sudden fashion.

Again, as we all agree, I think interest rates may remain near zero according to the Greenbook over the next two years. The Committee needs a clear plan for how to react to incoming data during that period. Otherwise, what's going to happen is that, at the end of the first quarter? We're going to be perceived as going on hold and perhaps staying on hold for a long time, but information is going to roll in about the performance of the economy. We may want to adjust policy during that period, especially if the news is particularly strong or particularly weak, which can easily happen, according to the estimates of uncertainty around our forecast.

Our asset purchase program has been considered successful, according to staff analysis. We could use that program to adjust policy going forward, as we remain at the near-zero policy rate. I would see the asset purchase program as a substitute for the policy easing we would have undertaken had we been able to do so. It seems logical to me that we would gradually withdraw some of the policy accommodation coming from the asset-purchase program as the economy improves. That would substitute for tightening that we would not be willing to do with the rise in rates. Also, we should stand ready to do more with the asset-purchase program should information on the economy come in weaker than expected. Again, as many have pointed out, there's plenty of downside risk as well as upside risk. I think the former Chairman of this Committee said that uncertainty isn't just a fact of life, it's a defining feature of how we have to deal with policy.

I agree with President Kocherlakota's suggestion on holdings in the third paragraph. I thought that was a good suggestion. I support that. I also support President Fisher's suggestion in paragraph 1, perhaps as modified by Governor Kohn, but I thought that was a good point, too. And I agree with the comments that have been made about the final paragraph. I support the final paragraph as written. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Hoenig.

MR. HOENIG. Thank you, Mr. Chairman. It's an interesting meeting. The way I'm trying to think of the context is that economic circumstances obviously have changed. You and others have described them. You might think of this meeting as an inflection point, where we're beginning to think a little bit differently about how we're doing monetary policy and how we might do it in the future. There are a couple of aspects to it. In this meeting, we're beginning to describe, I guess, more definitely our exit from the extraordinary facilities that we've engaged in.

Paragraph 4 walks us through that, and I think that's a good thing. And I also would probably be in agreement as we move to January for the increase in the spread. With that, I do agree with President Plosser that we should also increase the minimum acceptable bid rate on the TAF as we go forward to keep that in line. So that is, kind of, phase 1 of this.

Phase 2 is the more difficult, and that's the process of removing the highly accommodative policy and perhaps firming policy as we go forward. That, of course, will depend, as many have said, on a variety of economic circumstances. But that's always the case. I'm very sensitive to the fact that unemployment will be very slow to come down over the next several quarters, but I also would remind the Committee that if we started today, it would be a long time before monetary policy is brought back up to what most would consider a normal policy under normal circumstances as well. We're going to have an accommodative policy for many quarters ahead, even if we were to start removing some of it today, and we shouldn't lose sight that. We need to be thinking about removing this accommodative policy and restoring our balance sheet, as others have said, to pre-crisis levels. We need to do that in gingerly way, of course, but we also need to begin to prepare the markets for that.

I'm very concerned. I know how we need to be walking on eggshells, I really do. But I'm very concerned about this "extended period" language when we're near zero, because it also provides a safe harbor for those who are going to engage, and are, in fact, engaged, in speculative activities around that, and we encourage that, and I think there is a price to pay at the other end of this. So as I balance this out, I'm not inclined to wordsmith things, but I do have a slight preference for C for a couple of reasons. I think it does more forcefully respond to the fact that conditions have improved. It does allow us to scale back some of the purchases that, in my opinion, should be scaled back, and it does change the language from "extended period" to "some time." I think, yes, there would be some jitteriness in the market, perhaps, but, at the same time, it would set the stage for giving people some confidence that things are improving and that we are, in fact, anticipating and avoiding some of the mistakes of the past that we are duly being reminded of. So that's how I view it at this time. Thank you.

CHAIRMAN BERNANKE. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Mr. Chairman. I support alternative B. I think it's premature to reduce stimulus, and I support retaining the "extended period" language. My soundings of participants in the financial markets suggest that, whether we like it or not, this "extended period" language has become a fixation, and it gives us little flexibility until we really are genuinely ready to signal that we are going to tighten the policy rate. So I don't see the benefits at this stage of coming off that language.

I also support the inclusion of the language in the final paragraph. I think this language is a useful reaffirmation of our intent, and I see the inclusion of paragraph 4 as furthering a communications practice of clarifying various exit questions related to management of the balance sheet. Having said that, if I understood President Yellen's suggestion, I am sympathetic to the removal of the TALF sentence, if that was her suggestion, because I see the commercial real estate problem going forward as possibly requiring continuing use of TALF in support of the CMBS market.

Perhaps it does not require comment, but I will say I am comfortable with the Desk's recommendation of an interim policy pending further deliberation starting next month of not reinvesting proceeds of maturing MBS and agency securities. I also agree with the recommendation to wait on the decision regarding the Treasury's portfolio. I'm comfortable with that because, given the small amount of maturities in the near term, I think these interim arrangements will have little effect on the market's interpretation of our policy direction. I think it's worth commenting on that because we're planning next month to discuss the overall exit policy.

I see in January and possibly in subsequent meetings that the Committee is going to have to take up a number of questions that are quite complex regarding exit implementation—when to begin active shrinking of the balance sheet, what tools to use, and what proportion and what sequence or what combination, and how much tactical adjustment is required in response to developments in the financial markets and the economy. These are going to be very challenging questions, because there are so many policy variables at play and possible economic states that we will be dealing with. So I would have been proposing something like the Chairman's suggestion. Let me just say that I welcome the January session, and I hope we devote a significant period of time to it.

Like President Fisher, I was a bit taken by surprise or flatfooted by the recommendation on the primary credit rate, and I too would like to hear more discussion on that, and I think President Rosengren also commented that he had doubts regarding the timing of this, and I share those doubts as well. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Lacker.

MR. LACKER. Thank you, Mr. Chairman. I have some attraction for alternative C. I don't think we need to provide further stimulus over the next couple of months by buying more MBS. If we had committed a couple of months ago to buying the amount listed in alternative C, I don't think we would decide to increase that amount to match up with alternative B.

I think that President Kocherlakota was very eloquent about the concerns about our balance sheet, especially our strategy past March. I think Mr. Sack's graphs showing the option-adjusted spread on MBS is stunning. It shows that we have driven MBS spreads well below historic norms. And I think it's worth keeping in mind that those historic norms already reflected an implicit subsidy due to the perceived status of the government sponsored enterprises as benefiting from a government guarantee. President Kocherlakota pointed to the value of our asset purchases last fall and earlier this year in improving market function, and the natural metric for that is spreads. These spreads have not only restored market functioning, if you take them as a serious indicator, but we have gone beyond that, and we're subsidizing the housing market now. I think we should look at our MBS strategy in terms of the composition of aggregate demand that we want to foster. Do we want to tilt aggregate demand towards housing and away from other components? I understand the need to stabilize the housing market, and we did that earlier this year. The market was in freefall. Prices were falling. That was cutting household net worth. People were cutting back on consumption. They did not know where things were going.

But the market is broadly stabilized now. Prices have pretty much stabilized at the national level, though there is local price movement. Granted, there is a huge foreclosure overhang, but the market is working through those foreclosures, working through those workouts, transferring those assets to productive hands. I don't see the need to drive MBS down further, and I don't think as a long-run matter we want to be skewing demand towards housing construction. It's an easy fix for a weak economy. It's easy to get those construction teams out there putting foundations in and putting up frames, but if we haven't built too much housing now, I am not sure when in our history we ever have. Having said all of that, I do believe I can bring myself to support alternative B on the grounds that we already have made a commitment to purchase the full allotment at the next two meetings, and perhaps not enough has changed since that decision two months ago.

One thing I like very much about alternatives B and C is the new final paragraph announcing the winding down of our presence. I think it will be interpreted as an "all clear" siren, a signal of our view that the financial market crisis is more or less over and the conditions are no longer unusual and exigent. I think that's a good signal to send. I think it will contribute to a little more confidence at the margin in the recovery.

I believe we should let mortgage-backed securities roll off as they mature. I think that the primary credit rate is worth thinking about and studying, but again, like President Fisher, I was caught unawares by that issue and would like to go back and put some numbers down on paper about potential slopes of the yield curve and in the primary credit rate and think about what it means for the term deposit facility and our overall configuration. President Plosser mentioned this as well.

The TALF sentence—I'd like to see it remain the way it is. I still haven't seen evidence that the CMBS market is remedially fixable. Quantities are low, but it sure looks like fundamentals are troubled there.

"Holdings" I think would be a useful change. I support President Kocherlakota's suggestion that we reword our reference to our assets in terms of "holdings."

I also support President Bullard's suggestion to move paragraph 2 of alternative C into paragraph 2 of alternative B, although if we don't do that after today's discussion of inflation dynamics and output gaps, we might want to think about replacing the phrase "substantial resource slack," with "low marginal cost." [Laughter] But we can debate that later. That concludes my remarks.

CHAIRMAN BERNANKE. I'm sorry. I'm a little confused about what President Kocherlakota said. Would you repeat your suggestion about holdings?

MR. KOCHERLAKOTA. Yes, sure. The last sentence of paragraph 3, alternative B—I want it to read, "The Committee will continue to evaluate the size and composition of its holdings of securities in light of the evolving economic outlook and conditions of financial markets."

CHAIRMAN BERNANKE. Okay. A number of people have commented that they were flatfooted by the primary credit rate proposal. That was the warning to give you plenty of time to think about that in the context of all the other things we are looking at.

MR. LACKER. Well, this is our last meeting before the Board of Directors meeting at which you want to suggest that we execute.

CHAIRMAN BERNANKE. We will discuss.

MR. HOENIG. Just one.

CHAIRMAN BERNANKE. We will discuss.

MR. HOENIG. Just need one to execute.

MR. LACKER. I know.

MR. HOENIG. So you don't have to.

VICE CHAIRMAN DUDLEY. We'd like to have an input.

CHAIRMAN BERNANKE. Having a recommendation available in case the Committee decides at the next meeting to take a step does not mean that we have to take a step.

MR. LACKER. I understand that.

CHAIRMAN BERNANKE. But I hear your concern. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I, too, support alternative B. I think the continued monetary policy accommodation is appropriate. The unemployment rate is at 10 percent, and core inflation is below my guideline of 2 percent.

I agree with the economic markers that are listed in the paragraph on inflation—the rates will remain low for an extended period of time due to low rates of resource utilization, subdued inflation trends, and stable inflation expectations, and I do put substantial weight on all three of those.

I was fascinated to hear Governor Kohn's discussion of real rates and how the natural real rate might be low for some period of time. That did stand in contrast to President Plosser's discussion about how policy really might need to chase the real rate up. As Don discussed, there's a need to replace consumption expenditures and other types of investment, and I believe that, inherent in Charlie's commentary, he did not have that same type of need. Really, this is just resource slack finding its way into a real rate discussion. I think it bodes well for us to have a robust discussion of these issues and recognize that it finds its way into a number of different market indicators. I tend to side a little bit more with Governor Kohn on this for that reason.

Although the unemployment rate is 10 percent and is expected to improve only slowly—that's the bad side—I still believe that a funds rate at about zero plus our large balance sheet is about as much as we can do and as much as we should do. I heard President's Yellen's very good point about how we need to be patient—if we'd instead been able to adjust policy in a more accommodative fashion, then we'd be able to rebound a little bit more quickly, but because we can't do that, this is a reminder that we need to be patient in this attitude. I agree with that.

I do think that the first-order effect of our large-scale asset purchases last spring was a nonlinear change in confidence that changed the tone for the way the economy was going. I think it’s probably very hard to come up with meaningful stimulative effects out of that, but at any rate, I do believe that we will need to recalibrate policy in a number of ways in 2010.

I support the winding down of our lending facilities, as stated in alternative B. I support generally redeeming the MBS and agency debt as they mature as a very light way to head towards getting our balance sheet in the right direction. I don’t think that that will be a move that’s too accelerated towards restrictive policy. And I support the continued preparations that you have described in thinking about our exit strategy. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Pianalto.

MS. PIANALTO. Thank you, Mr. Chairman. Before beginning to shift the current stance on monetary policy, I would like to see the economy on a more solid footing. Therefore, I support alternative B.

I am clearly in a minority. In fact, I think I am the only person so far that was going to raise concerns about adding paragraph 4 to the alternative B language. I agree with the assessment that conditions in financial markets have been normalizing, and I see great value in informing the public after this meeting about the termination of our special liquidity facilities, but I am concerned that adding this paragraph to our statement today might imply that we are beginning to tighten the stance of policy. So I was going to suggest that we avoid any confusion at this point and issue a separate statement. But releasing two distinct statements doesn’t seem practical, and no one else has suggested it. One suggestion I had was to add a word like “separately” in the beginning of paragraph 4, so it would read something like, “Separately, in light of the ongoing improvements in the functioning of financial markets,” et cetera.

But that said, the only other comment I wanted to make is that, just like many others, I concur with President Rosengren’s comments around making changes to the primary credit rate.

It would be helpful to have more discussion about that at our next meeting. And if we do make a change, then coupling it with the introduction of the term deposit facility or other exit strategy communications would be preferable. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Warsh.

MR. WARSH. Thank you, Mr. Chairman. Four quick points. First, I support alternative B with the Fisher-Kohn amendment about the reluctance by businesses to add head count. While I'm sympathetic to the views President Lacker described on the incremental net benefits of our MBS purchases, which I have discussed for some time, we've now said that we were going to do it, and there's nothing that we've learned between the last meeting and this meeting that would cause me to say that now is the right time to say, "Just kidding." So I think we should live up to what we said, because it would be, I think, a confusing retrenchment to go back to a smaller purchase level, even though, as a first impression many months ago, I would have been sympathetic to that view.

Second, I support ending the existing liquidity facilities, and I guess I'm of the view that we shouldn't relegate that to a separate statement. We should make it a virtue. We put these facilities in place. They did all that we expected them to do and probably more. They've served their purpose. It is time for them to move on, and I think we shouldn't be sheepish about that. I take that last line as seriously, I think, as President Yellen does. When we say that we're "prepared to modify," I don't think that's boilerplate at all. I think that says we're still very attentive to what's going on. So, with respect to TALF or any other facilities, we need to be more aggressive as the financial conditions and economic conditions warrant. I think we're prepared to do so, but I don't think we should shy away from that.

Third, on the question about the language around the purchases of securities, I'd like to make two points on what President Kocherlakota said. First, I just like saying that, "Kocherlakota." [Laughter] By next meeting I will be able to say the whole name without—. So that's my first highly value-added point on the suggestion. My second is that I think we should think about how to describe this mix of redemptions and purchases. I'm not sure this is the right moment, but I think he does spark a pretty interesting thought. And just one other word for consideration if we take this discussion up in January, rather than choosing purchases or holdings, I wonder whether "portfolio" is better. "Portfolio" takes into account that mix of what you might be adding and what you might be subtracting—it has an allocation point associated with it. So I don't know the perfect words, but I think it's an interesting discussion.

And finally, I support Brian Sack's recommendation on the runoff of MBS as an interim solution. I think it might be an interim solution that, at least in my eyes, lasts for more than this intermeeting period, but at least for now, I think that's a prudent idea. Thank you.

CHAIRMAN BERNANKE. Thank you. Governor Duke.

MS. DUKE. Thank you, Mr. Chairman. I, too, support alternative B. I am worried that the backup in mortgage rates as the purchases wind down could be on the high side of projections, primarily because I'm concerned about who might emerge as the substitute buyer. The Treasury programs and the GSEs are approaching the point where they need to reduce their portfolio holdings. My conversations with bankers indicate that they're completely unwilling to purchase mortgage-backed securities without knowing exactly what's going to happen with our purchases and with potential sales. So considering President Kocherlakota's—I can say it, too—suggestion in that light, I think we should talk a little bit about what we might do on sales and the composition of the portfolio. But I wonder if changing it without any further clarity on that might not cause even more concern over purchasing MBS.

Second, even if we find ourselves in a position where we'd like to provide more stimulus, it's not clear to me that the last couple hundred billion reserves have really made an awful lot of difference. At the same time, if we resume purchasing the mortgage-backed securities, it would make it even easier politically to push resolution of the GSEs even further into the future. And I firmly believe that the emergence of the GSEs from conservatorship, just as many of the larger financial institutions are coming out of government assistance, and determining what future they might have are going to be prerequisites for the restart of private mortgage markets. I don't see how housing markets return to normal without the full spectrum of housing finance.

Third, the role of TALF in CMBS—it seems to me that, with the newly issued CMBS, the first new deal that came to market was so conservatively underwritten and had so much investor protection in order to be able to qualify for TALF that that was the very reason that it attracted the investor interest that it did. And I would hope that that process would actually be able to continue through the next six months, and I'm uncertain that we could do more past June. So I'm not as worried about that one ending in June. And I fervently wish we had been able to do the same thing for residential mortgage-backed securities. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Mr. Chairman. I think the nature of this discussion so far has confirmed what I suspected coming into this meeting, which is that we're right on the cusp of starting to make hard decisions. We're not quite there yet, but everybody is positioning themselves. And in that spirit, I want to position myself. [Laughter] While supporting alternative B, I want to draw a distinction between the substance of what I think we are doing with the actions indicated in paragraphs 3 and 4 of alternative B and the way in which we're communicating it. I have no problem with the first; I do have some concerns with the second.

With respect to substance, I think what we are saying in paragraph 4 is that we had a series of very special programs that were addressing blockages in credit markets that were instituted over the last year or so. The unusual blockages and the large dysfunctionality in credit markets has substantially, though not totally, abated. And under these circumstances we are winding down most, and eventually all, of these programs. Second, I think we're saying that we're wrapping up the large-scale asset purchases that we announced in March. Third, we're continuing, obviously, the zero interest rate policy. And, fourth, we haven't made any decisions on exit as of yet. So I'm fine with all of those.

On the language, I think paragraph 1 captures well the consensus around the table with the Richard-Don amendment, which I think would be very useful. Let me jump to paragraph 4, because I think paragraph 4 does have the potential to surprise markets. I don't think the actions themselves will surprise markets—I think this is what's anticipated. But the fact of including it in this statement, as Sandy suggested a few minutes ago, may be a surprise and will begin to, or could begin to, elicit a lot of speculation as to whether this is, in fact, the beginning of a staged, already planned exit. As all of you know, the amount of speculation among market actors as to what the exit plan is, with dates and quantities, is very high right now. So the last sentence, as Kevin and others have suggested, ought to be taken seriously by us, and not be considered as boilerplate. I have to say, on the merits I'm quite comfortable with the winding down as anticipated, with the possible exception of CMBS.

That brings me to paragraph 3. When Brian Madigan sent around the language last week, I looked at it and, for the reasons I have already indicated, I was a little uncomfortable, but I felt that it was okay. I thought that the last sentence of paragraph 3 was on the verge of being anachronistic, but wasn't quite there, so that it could await the January meeting. Brian Sack's informative and admirably forthright briefing yesterday injected some doubt into my mind about that, because of the anticipated runoff issue. Again, it's not that the anticipated runoff seemed ill-advised as a substantive matter, but I do have some concern about what's being communicated by allowing those runoffs to happen. Will there now be a firm view in the markets that we are just going to let these things run off, notwithstanding what may happen in the future? If there's a fair chance that that will be the inference drawn, then we would be faced, if conditions deteriorate in the future, with a decision that would be regarded as a significant change in policy, a switching on and off of the lights as it were, rather than turning the dimmer switch a little bit in one direction or another. For that reason, I was actually somewhat attracted by Narayana's suggestion

MR. KOCHERLAKOTA. That's another beautiful name. [Laughter]

MR. TARULLO. Even though, obviously, our policy inclinations are probably different, I took Narayana's suggestion to be a kind of general statement of the Bullard doctrine, which Jim patiently repeats every six or seven weeks in this room—[laughter]—about the need for flexibility depending on circumstances. I think that, while I could live with waiting one more month or six or seven weeks, to change that last sentence of paragraph 3, I have to confess to some uneasiness as to what we're projecting to markets in staying with this sentence, given the way I think that paragraph 4 and the slight changes of wording in paragraph 3 will be understood.

One final point—to Jeff's point on MBS—I have two reactions to that. One, for reasons many people stated in the go-round yesterday, mortgage rates and residential housing could still be key to the path of recovery next year, and thus may be important to affect or to observe the effects of one way or the other. But, secondly, in the absence of conventional monetary policy easing possibilities, because of the zero bound, we found in March we had two choices. We had the agency MBS, basically, and then we had Treasuries. And Treasuries raise a whole different set of concerns about the possible interaction with fiscal policy and maybe even foreign exchange policy that I think a lot of people around the table wanted to avoid. So I think it's not just about the mortgage credit markets, even though to some degree it *is* about mortgage credit markets. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Mr. Chairman. I'm very happy to see that we're going to have the discussion on sequencing in January. I think it's going to be very, very important to see if we can reach a consensus view on strategy and tactics. The market is definitely wondering what those strategy and tactics are going to be. Until then, I think it would be useful not to debate this too much in the press, because I think that just creates confusion. I notice that in the primary dealer survey, the communications score we got this time came down a bit, and I think some of our discussion about asset sales versus no asset sales might have contributed to confusion on that front.

I'm not going to say where I stand right now on how to do the sequencing, but I do want people to start thinking about two broad issues. One is the timing of asset sales, and on that, I think there are two major views: one, starting with draining reserves and raising the short-term rate with asset sales held in abeyance, maybe used, maybe not; and, two, conducting asset sales first, and then moving on to raising short-term interest rates later. I think that's a really important thing that we're going to have to sort out. The second broad issue is the sequencing of reserve-draining operations versus the increase in the IOER rate. The market thinks that we're going to drain a lot of reserves first and then raise the IOER rate, but we may decide to do the reverse. So I think we need to have a thorough discussion about that issue.

In terms of the statement, I favor alternative B. I'm with pretty much everyone else. We're withdrawing quite a bit of accommodation, frankly, as we taper off the asset-purchase programs and phase out most of the liquidity facilities over the next few months. We don't really know how important liquidity facilities are in terms of their backstop function, so until we actually take them away, we're not really going to know exactly how much accommodation is being withdrawn.

I think the "extended period" language still works. I thought it was interesting that the primary dealer poll suggested that, if you keep it in, then it's going to be at least three more meetings before the Fed might tighten. Obviously, it's actually four, because you would take it out potentially at the next meeting, and then there would be three more meetings after that. So that fits pretty well with the informal poll that I talked about at the last meeting, where "extended period," in my view, was at least six months. So I'm glad to see that the dealers are on the same page on that as I am.

As far as President Kocherlakota's suggestion on holdings, I'm uncomfortable with that. Here's the reason why: I understand what you're driving at, that there is this question of redemptions. But "holdings" suggests a two-sidedness that "purchases" does not. I think if you put "holdings" in there, you're inadvertently going to raise the question of whether asset sales are now on the table in a much more assumed way than what we might want to imply there. So I think that's the problem with it. I understand the motivation, but "purchases" is one-sided, "holdings" is not.

Finally, on the new issue of CMBS, I know that's a decision for the Board. I think that in the relatively near future the Board does need to clarify with the market, though, whether that's going to be extended or not extended. There's a pretty long runway for people to develop that and bring it to market, so I would say by late January or early February it would be useful to clarify whether that's going to go away or whether that is going to be extended beyond June 30. Thank you.

CHAIRMAN BERNANKE. Thank you very much. As usual, it was a very informative and diverse discussion.

Let's talk a bit very broadly. We're going to come back in January and talk a lot about tactics. Let me just address for a moment this broad question: Is policy too easy or too tight at this juncture? You know, there is a fairly substantial view out there—Paul Krugman and Joe Gagnon, for example, have expressed it—that by the Taylor Rule we are still several hundred basis points too tight, that we should, therefore, be doing a lot more asset purchases. President Yellen, I think, was alluding to that. So I think there is a respectable view which says that we should be looking to ease further rather than to be tightening. The reason I personally, at least, am not convinced that that's the right way to go is that the connection between what actions we can take at this point and effective easing in the markets is not at all clear. For example, on the one hand, mortgage rates are already extraordinarily low—it's not clear that we can lower them much more. And there are certainly risks associated with substantial further expansion of asset purchases, including destabilizing inflation expectations, causing commodity prices to rise, or causing the dollar to start to fall, all of which could lead to a reaction which would be actually a net negative. So while I see merit in the idea that we should, in some sense, be at an easier stance than we are, I think we are, in fact, getting to the point where the connection between our tools and the state of the financial conditions is becoming much less clear.

That being said, I have listened to President Bullard now for three or four meetings, and even I can begin to hear that after a while. [Laughter] I think that we should not rule out additional purchases. We might want to consider a program of modest purchases, which could be varied, and consider doing that in a way that's responsive to broad conditions and, specifically, to something that we'll learn a lot more about in the next few months, namely, what happens to the mortgage rate and the housing market after our purchases end. So I think that's something we want to keep in mind as we think about our broad strategy.

Should we do less, as an alternative? I think it's good for confidence and good for predictability for us to begin to normalize policy, to begin to operate in a way that people are more familiar with. We are coming to the point where we can do that, and I view this closing of some of these facilities as being an important step. I don't think that actually tightening policy is a good idea, for the reasons I just said. I think that the economy is still quite weak and that we should not, at this point, either tighten or strongly signal a tightening at this juncture.

The signaling is very important. For example, relative to President Lacker's and others' suggestion about cutting back slightly on our purchases, the $100 billion here and there is small change, as far the magnitudes are concerned. President Plosser is holding his forehead. [Laughter] What's far more important in this context is the signaling. What are we saying? Are we saying, therefore, that we have decided to begin a process of tightening? I worry much more about the signals than I do about the actual purchases at this point, and so I think we have to be very, very careful.

I do think that what we are doing has been quite constructive. Regarding these side risks of the dollar and excess speculation and so on, while we have to monitor those carefully, at the moment I think those things look, as best we can tell, to be all right. And therefore, again, given the state of the economy, I don't think we should be actively signaling a tightening process at this point. I would note—despite the commentary of the dealers about three meetings and so on—that in the previous forward guidance episode we changed the statement about considerable period, and two meetings later we raised interest rates. I mean, it was a meeting of intermediate language, and then the next meeting we raised rates. So I don't think that we're constrained to six months by any means.

So my general preference is alternative B, with maintaining, importantly, the "extended period" language for the time being, trying to minimize changes that would be viewed as premature signals, either of tightening or ease, and that's a very important aspect of the language. But, at the same time, I think what we do want to signal is normalization as much as possible, that we are exiting from extraordinary facilities where we can, and that we hope that it will inspire confidence that we are moving towards more normal policy.

Let me talk a little bit about some of the specifics that were raised in the language. I think there is a good bit of support for President Fisher's idea in paragraph 1 about staffing. I didn't focus on it today, but, in fact, in last November's statement, the sentence "Businesses are still cutting back on fixed investment," also said "and staffing." We cut that phrase for this meeting's statement. So it does seem appropriate to say that, even though we're not seeing further declines in employment, we're not seeing hiring either. So, how does it go? "Businesses are still cutting back on fixed investment, though at a slower place, but remain reluctant to expand payrolls." Is that what we have?

MR. KOHN. And, I think you could say “and.”

CHAIRMAN BERNANKE. “And remain reluctant to expand.” Is that the right word—was suggested?

MR. KOHN. Add to payrolls.

CHAIRMAN BERNANKE. “Still cutting back on fixed investment, though at a slower pace, and remain reluctant to expand payroll.” Right?

MR. FISHER. Don, you had the best words, I think.

CHAIRMAN BERNANKE. What were your words, Don?

MR. KOHN. I said “add to payrolls.”

CHAIRMAN BERNANKE. Okay. “Add to payrolls”?

MR. KOHN. Yes.

CHAIRMAN BERNANKE. All right, that’s a little better. On the inflation sentence, I think there should be a barrier to make changes. I understand that several people have preferences for the language in C. I think someplace where we might head at some point would be to combine those two. For example, if we want to retain the reference to resource slack—this is just a suggestion for the future, I’m not going to propose this right now—we could say something like “With substantial resource slack likely to continue to dampen cost pressures, and with longer-term inflation expectations stable,”—then the second part of the C—“the Committee expects that with appropriate monetary adjustments inflation will remain at levels consistent,” and so on. So that’s a direction we could consider. I’d note that one issue is that making that change today would constitute a change in our inflation forecast, and I don’t think it really has changed from inflation being subdued to being consistent with price stability. It seems that that would be a natural step to take when inflation risks and levels and forecasts seem closer to the

2 percent target. So my recommendation, based on “less change is generally better,” would be not to make that change today, but to recognize that going forward that reference to monetary policy actions and price stability would be perhaps a constructive direction.

Regarding the third paragraph, I appreciate the thrust of President Kocherlakota’s suggestion, and I think we do have to think about—again, as President Bullard has suggested—how we might do additional purchases, and, if so, how we can do that in a way that’s more responsive to incoming data. That being said, I share the Vice Chairman’s concern that switching to the word “holdings” at this point is going to be jumping the gun, in the sense of being too strongly suggestive that we can adjust the portfolio either up or down. And we have not yet, I think, come to any kind of conclusion or agreement about how we’re going to deal with asset sales, that is, what priority or what order they would have. So I’m reluctant, for that reason, to do that. But, again, this, like Governor Warsh’s “portfolio” comment, is a suggestion, a direction, that we’re going to want to go toward as we have greater clarity among ourselves about how we want to manage our balance sheet.

Several people objected to paragraph 4, but I thought the consensus mostly was to include that—again, as a symbol of our exit. The one question I would put before the group would be the sentence on the TALF. We could simply drop that sentence, if there is interest in doing that. Brian, would that be a lacuna that would be troubling? We’re not referring to some of our other actions or programs.

MR. MADIGAN. I think that presumably would be interpreted simply as “the Federal Reserve has nothing new to report for the TALF.”

CHAIRMAN BERNANKE. So, for those who are concerned that paragraph 4 is too strong a signal, or who are concerned specifically about CMBS, that might help in that direction. President Evans.

MR. EVANS. Haven't we already announced these dates tentatively?

CHAIRMAN BERNANKE. We have announced them.

MR. EVANS. I guess the question is the perception would be if you sort of ratify some dates but not the others is that a signal that—

CHAIRMAN BERNANKE. I'm just putting it forward for the group's consideration. The difference is that the language here, "anticipated expiration dates," is a somewhat different sense from the previous announcement, which was that it's being "extended to." There is some information there in terms of the likelihood of a continuation of this program, but, personally, I'm fine either way.

MR. FISHER. Excuse me, Mr. Chairman, I think Janet's point was that we not consider the last sentence boilerplate, that we are serious about it, and that we will adjust if needed. Wasn't that your point?

MR. LACKER. Actually, she was talking about paragraph 3.

MS. YELLEN. Actually, I was talking about paragraph 3. The same applies here. It's just that the time for putting together these deals is so long that to wait until anything close to June to say "the facility is still available" is problematic.

CHAIRMAN BERNANKE. We take the point that the Board needs to think about this very soon. And one can argue that this language does not preclude, obviously, extensions—it says anticipated expiration date—the last sentence says "prepared to modify," and so on.

MR. TARULLO. Richard suggests a parenthetical saying this is not boilerplate, this is—

MR. FISHER. No, no, [laughter]. To be accurate, I would amend the last sentence to say, "The Federal Reserve is prepared—honest to God, really, and we mean it"—[laughter]—"to modify these plans." I would not be in favor of taking that penultimate sentence out, Mr. Chairman.

MR. PLOSSER. I think we should not take it out, because I think listing all the programs that we've done and omitting this one would be noticed, and it might be noticed in a significant way—I think that's what President Evans was saying. So unless we really intend to do something different, I think it would be a mistake not to include it.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. My sense is that it would be interpreted that something is—

MR. PLOSSER. Something's afoot, right.

CHAIRMAN BERNANKE. All right. Under President Fisher's suggestion, we'll put the last sentence in bold. [Laughter] We're nodding—this is worrisome here. [Laughter] Is that acceptable?

All right. My proposal, then, is to make the change about hiring in the first paragraph, and to make no additional changes to alternative B, noting for the future that we will want to consider modification of paragraph 3, the description of our portfolio, and that all of these things appropriately should be part of our discussion of strategy and tactics, which we have promised and we now have to deliver for January.

President Lockhart.

MR. LOCKHART. This may be too fine a point, but I have a thought about the use of the phrase "adding to payrolls." In light of the increase of temporary workers, I am wondering if the business community thinks when they add temps, or they add contract workers, they are adding to payrolls, when what we're trying to say is they're not adding permanent hires, which is the fine distinction.

MR. FISHER. That's why I used the word "overhead" originally, but I think it's too fine a point.

CHAIRMAN BERNANKE. Well, of course, in the November report, even including temporary hires it was still a negative number.

MR. LOCKHART. Right. But we are getting anecdotal feedback that there's a sort of sequence—you add hours, then you add temps, and then ultimately you add permanents. And we are getting anecdotal feedback that there has been a pickup in temporaries. I just raise it to make sure we are communicating what we want.

MR. KOHN. I think it says "remain reluctant," so isn't that what we've said? It's not as if they're not doing it, but they're being very cautious about it, so I think it's okay.

MR. LOCKHART. Fair enough.

CHAIRMAN BERNANKE. Any other comments? [No response.] All right. Brian, are you prepared to read the changes?

MR. MADIGAN. There's just one change, Mr. Chairman. My understanding is that we're adding to the fourth sentence at the end of the first clause another clause, so after the words "slower pace" we add, comma, "and remain reluctant to add to payrolls" and then semi-colon. There are no other changes to alternative B as it appears on page 3. Also, the Committee's vote will be covering the directive on page 8 of the handout.

CHAIRMAN BERNANKE. Okay. And we will have further discussion dealing with redemptions going forward. On that issue, for example, in my July *Wall Street Journal* editorial about our exit strategy, I explicitly noted what the redemption expectations were for the next couple of years. I noted that between $100 and $200 billion a year would roll off, and I included that as part of my description of how we would exit. So it isn't an entire surprise in that respect.

If there are no other questions, we're prepared to take a roll.

MR. LUECKE. As Brian indicated, this vote will cover the directive on page 8 of the handout and the statement on page 3 with the modifications that Brian read.

Chairman Bernanke	Yes
Vice Chairman Dudley	Yes
Governor Duke	Yes
President Evans	Yes
Governor Kohn	Yes
President Lacker	Yes
President Lockhart	Yes
Governor Tarullo	Yes
Governor Warsh	Yes
President Yellen	Yes

CHAIRMAN BERNANKE. Thank you very much. Why don't we take a 15-minute coffee break and come back for the special presentation?

[Coffee break]

CHAIRMAN BERNANKE. Let me call on Jeff Fuhrer who will introduce the special topic. Jeff.

> MR. FUHRER. Thank you, Mr. Chairman. In thinking about how to introduce this topic this morning I was tempted to extend the Titanic metaphor of yesterday afternoon. Were I to do that, I might note that First Officer Wilcox and Ensign Sheets had left the Committee in the middle of the frigid North Atlantic, clinging to flimsy life boats, while the sharks of high unemployment and highly uncertain inflation circled hungrily. Fortunately, the intrepid crew of the R.M.S. Carpathia, headed by officers Michael Dotsey from Philadelphia, Mark Wynne from Dallas, and Jeff Fuhrer from Boston, were steaming their way to extricate the Committee from its rather precarious circumstances. However, I chose not to extend that metaphor. [Laughter] Further, in part, because, unlike Batman, who seems to have an endless supply of tools in his utility belt to take care of any circumstances that might arise in Gotham City, we don't actually have any such tools to extricate you from your predicament. So, I will move on and leave that belabored metaphor alone.

In weighing the options for monetary policy in the coming years, inflation plays a pivotal role. If inflation stabilizes at its recent level and then rises gradually to the Committee's implicit goal, while unemployment declines towards a rate consistent with full employment over the same horizon, many will consider this an acceptable outcome. If, on the other hand, inflation continues to decline in the presence of elevated unemployment, falling more significantly below the Committee's goal, then the Committee's policy decisions could become much more complicated.

Which of these outcomes materializes will depend on what determines inflation in the short run. So what does determine inflation? In answering this question, I am reminded of one of my favorite stories, which involves Sigmund Freud and one of his graduate students (and which is probably entirely apocryphal). The student was troubled about Freud's theory that all dreams reflect wish fulfillment. She had a recurrent dream in which she murdered her young children, and she found it impossible to believe that this dream reflected her wishes. When she posed this dilemma to Freud, he thought for a moment and replied, "But don't you see that your dream simply reflects your wish to disprove my theories?" [Laughter]

Like Freud, economists love to be clever, and also like Freud, our deep and abiding love of our own theories may make it difficult for us to see their flaws. In considering the possible trajectory of inflation, I believe we should contemplate the alternatives with un-Freud-like humility. The fact is that we don't know what will happen to inflation. In recent years, inflation has certainly fluctuated, but it has been quite stable by the standards of the 1970s and 1980s. It appears to have been so far only modestly responsive to the significant declines in employment, activity, and labor costs. And, while short-run inflation expectations have generally tracked short-run movements in inflation, some measures of long-run expectations have remained remarkably stable. As a consequence, it is difficult to know whether inflation in this turbulent period will respond to economic conditions as it did in the turbulent 1970s and 1980s, or instead remain placid in the wake of recent and ongoing upheaval, taking on the imperturbable, sphinx-like demeanor that was characteristic of inflation in the period that we now fondly remember as The Great Moderation.

Our goal today, then, is not to provide evidence that irrefutably explains how inflation has behaved and where it must go, but instead to impose a degree of rigor on the discussion, to raise questions based on our best theoretical and empirical analysis, and, most importantly, to spark a discussion among the principals at this table that will help us better understand each of our imperfect frameworks for thinking about inflation.

And in that regard, I would just note that, at breakfast this morning, such a discussion started to emerge—a rather engaging, interactive discussion about some of the issues that we'll talk about today. So I'm hoping that maybe some of that sense will spill over to the discussion this morning. Now let me turn it over to Mike Dotsey, who will make the first presentation.

MR. DOTSEY.[4] Thanks, Jeff. Mr. Chairman and members of the Committee, our presentation summarizes two important concepts: inflation persistence and output gaps. These seemingly disparate concepts are linked through the Phillips curve. We argue that interpretations of inflation persistence and output gaps derived from Phillips curve models are sensitive to assumptions made in estimating these models and assumptions made about the nature of shocks entering the models. Unfortunately, there is not always a sound basis for choosing among candidate assumptions. As a result, basing policy discussions on measures of persistence or output gaps may not be productive.

Our work shows that: (1) observed inflation persistence may be the result of monetary policy choices and thus cannot be used to infer structural features of the economy; (2) statistical measures of output gaps are not useful in formulating monetary policy; and (3) theoretical measures of output gaps may in principle be helpful for guiding policy, but in practice they are probably not.

Let me turn my attention to my first topic, inflation persistence. To investigate the potential sources of inflation persistence, we used a simple sticky price model. In this model, the New Keynesian Phillips curve accounts for deviations of inflation from average, or trend, inflation. In looking at inflation over the last 50 years, it appears that inflation can be characterized as a process having a time-varying mean. Thus, how one models trend inflation has important implications for the structure of the model. If trend inflation is changing over time and is modeled as changing over time, then the New Keynesian Phillips curve needs to account only for the deviations of inflation from a changing trend, not for overall inflation. Thus, a New Keynesian Phillips curve estimated on deviations from trend inflation will predict less backward-looking indexation or shock persistence. There will be fewer structural rigidities than if the trend is depicted as a constant.

To clarify the sources of inflation persistence, consider the reduced-form New Keynesian Phillips curve on page 3 of the handout. This equation indicates that there are several potential sources of inflation persistence. Inflation can be persistent because marginal cost is persistent, because markup shocks are persistent, because prices are indexed to past inflation, or because the inflation trend is itself persistent. It seems natural to interpret a time-varying inflation trend as the result of a drifting inflation target.

We estimate our simple model for two specifications of the inflation trend, a specification with a fixed inflation target and a specification with an inflation target that follows a random walk. We find that allowing for a random walk inflation target reduces the overall contribution of indexation and markup shocks to inflation persistence. Further, the random walk inflation target specification is statistically preferred to the constant target specification.

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[4] The materials used by Mr. Dotsey are appended to this transcript (appendix 4).

That finding implies that the persistence of inflation is, to a large degree, determined by policy. Supporting this point is the observation that historically across countries inflation persistence depends on the monetary regime. In particular, inflation persistence is lower in countries that are on a gold standard or where the central bank targets inflation. The finding that inflation persistence is largely determined by monetary policy and that other sources of persistence are not very important implies that policy is fully capable of changing the behavior of inflation without generating large economic costs, especially if inflation expectations are well anchored.

Now let me turn to my second topic, the usefulness of output gaps for conducting monetary policy. We are going to conclude that they are not very useful. Broadly speaking, output gaps refer to the deviation of output from a level deemed to be desirable. Thus, constructing an output gap requires one to take a stand on the desired level of output, often referred to as potential output. There are two primary approaches to defining and measuring potential output: those based on statistical procedures and those based on explicit theoretical models. Statistical measures of potential output are constructed either as smoothed measures of actual output or smoothed estimates of output derived from a production function.

A second approach to constructing potential output relies on estimated theoretical models, where the behaviors of output and potential output depend on the structure of the economy and the exogenous shocks buffeting the economy. Some features of the economy’s structure and some of the shocks hitting the economy may give rise to inefficient outcomes. For example, monopolistic price setting and nominal rigidities introduce distortions. In addition, markup shocks introduce inefficient fluctuations. This suggests defining potential output as that output that could be obtained in the absence of distortions and inefficient shocks, but including the effects of shocks that are classified as efficient. In simple versions of these models, a monetary policy that minimizes the difference between actual output and the model-based definition of potential output, that is, the model-based output gap, is welfare improving.

Thus, in principle, model-based output gaps may be useful for policy purposes. In contrast, the statistical measures of the output gap are less useful for policy purposes, because these measures need not be closely related to model-based gaps. For example, in figure 1 of the handout we consider a productivity increase in an economy with sticky nominal prices. With sticky prices, output responds more sluggishly than it would if prices were flexible. Because of this, potential output rises by more than actual output, and the theoretical output gap is negative. However, if we were to graph a statistical measure of potential, which is a smoothed version of actual output, it would rise by less than actual output, producing a positive output gap. Thus the model-based output gap and the statistical-based output gap would move in opposite directions and imply different monetary policy responses. This example illustrates why we think it unwise to base policy on statistical-based gaps.

However, at this stage of model development, we are also uncomfortable with using model-based gaps for policy purposes. First, in more complicated models, the output gap is no longer a sufficient statistic for evaluating the welfare implications of monetary policy. Moreover, the models are still preliminary. In addition, shocks play an important quantitative role in these models, but the economic interpretation of many of these shocks is unclear.

While we have come to accept productivity shocks as structural, we have not yet reached that comfort level with many of the new "structural" shocks coming out of New Keynesian Phillips curve models.

It is also of importance that different models may produce very different measures of the output gap. In figure 2 we plot the output gaps from three representative models. The blue line represents the output gap from our small-scale model, the green line is the output gap from a medium-scale New Keynesian Phillips curve model developed by my colleague Keith Sill, and the two red lines represent alternative output gaps from the Board's larger-scale EDO model. It is abundantly clear that the output gaps from these different models are very different. We, therefore, are not confident that, given the current state of knowledge, one can rely on model-based gaps as sufficient indicators for monetary policy.

On a more positive note, we believe that the process of formulating and estimating a particular model can be quite useful for policy purposes. Estimation can inform a policymaker about the shocks that the model suggests are impacting the economy. If the shocks have been correctly identified, the model can be a useful guide to policy. A general lesson from our models is that it is not enough to know that output is high or low relative to trend to conclude that output is high or low relative to potential; rather one needs to know something about the shocks hitting the economy and the assumed structure of the economy. It seems more appropriate that policy discussions should proceed based on explicit discussion of these shocks, rather than the implied gaps.

From this we conclude that the use of models in policy discussions is beneficial. Also, because we have no agreed-upon model, it is useful to consider the implications from a number of models, and it is certainly not necessary that all the models be of the New Keynesian variety. It is only the careful consideration of a full range of imperfect models that enlightens and places discipline on policy discussions.

In that regard, the Chicago exercise falls into the class of exercises that we find productive. They provide a detailed exposition of their model, the various variables constructed using their model, and the contribution of shocks to these constructs. This is consistent with the way we suggest policy discussions be conducted. We are, however, more skeptical of the specifics of their exercise. They find that their measure of potential output, which conforms to our definition of potential, helps explain another model construct that they call "fundamental inflation." We don't think this is much of a surprise. Fundamental inflation is the part of detrended inflation generated by efficient shocks in their model absent inefficiencies and is thus constructed similarly to the way they construct potential output. That strategy increases the chance that those two constructs will be correlated. However, this correlation is not necessarily useful for policy purposes. In particular, fundamental inflation is only weakly correlated with actual inflation, implying that their model, like most models, doesn't provide a good structural explanation of inflation. Therefore, from an academic perspective, their results are very interesting, but from a policy perspective less so, because knowing the Chicago measure of potential output tells us very little about actual inflation. This is a key point of the Philadelphia-Richmond presentation. And now I'll turn it over to Mark.

MR. WYNNE.[5] Thank you, Mike. Mr. Chairman and members of the Committee, in recent years, a number of monetary policymakers have addressed the question of whether greater global economic integration, or globalization, has had a significant impact on inflation in the United States. One dimension of this integration is trade in goods and services, and, as figure 1 in your handout shows, imports as a share of GDP have gone from just over 4 percent during the 1950s and 1960s, to more than 18 percent at the most recent peak. While there appears to be broad agreement on the importance of globalization as a real phenomenon—that is, as a phenomenon that affects the location and pattern of real economic activity, along with relative prices and real factor returns—there is less agreement on what globalization means for inflation dynamics and monetary policy in a country as large as the United States. On the one hand, there are those who argue that the gap concept that is now relevant for thinking about U.S. inflation is a worldwide measure rather than a domestic one. On the other hand, there are those who argue that, with a flexible exchange rate regime, the effect of foreign price developments on U.S. inflation is minimal.

Whether greater openness has implications for inflation over the medium to longer term depends very much on how monetary policy responds to these developments. Globalization does not alter the fact that, at longer horizons, inflation is ultimately determined by the actions of monetary policymakers. Our remarks this morning will focus on the so-called global slack hypothesis, the notion that, as a result of globalization, the concept of slack that is most relevant for thinking about short-run tradeoffs between inflation and real activity is global rather than local. We argue that the global slack hypothesis has analytical content even under a floating exchange rate regime in the context of at least one widely used framework for thinking about inflation dynamics in open economies and, furthermore, is consistent with what we see in the data. The evidence is fragile, to be sure, but it suggests that the hypothesis cannot be dismissed outright.

In an open economy, as can be seen in slide 5 of the handout, the final consumption basket will consist of both domestically produced and foreign produced goods, and consequently the overall rate of consumer price inflation will be a weighted average of the rates of increase of the prices of these goods. When price

[5] The materials used by Mr. Wynne are appended to this transcript (appendix 5).

changes are infrequent and asynchronous, the rate of change of the prices of domestically produced goods can be written as a function of the expected future rate of change of these prices and the real marginal costs of producing them. The rate of change of the prices of foreign produced goods sold in the domestic market can be written analogously.

Substitution of these relationships into the domestic consumer price index then gives us a general expression for the open economy Phillips curve. Domestic CPI inflation is related to expected future domestic CPI inflation and a weighted average of domestic and foreign real marginal costs. By invoking additional assumptions about the labor markets and firms' pricing behavior, it is possible to rewrite the Phillips curve in a more standard form in terms of domestic and foreign output gaps.

And here we need to consider two cases:

Suppose that firms that engage in international trade set prices in their own currency and adjust them infrequently. Under what is referred to as producer currency pricing, the law of one price holds and exchange rate pass-through is complete. In this case, there is a relatively straightforward mapping from real marginal costs to output gaps that allows us to write the domestic Phillips curve in terms of an average of the domestic and foreign output gaps, as can be seen in slide 6 in the handout. The foreign output gap matters not only as a proxy for foreign marginal costs and their effects through import prices, but also because of its influence on domestic pricing decisions. In fact, theory suggests that domestic marginal costs (and, therefore, domestic producer prices) will in general depend on the foreign gap as well because: (a) domestic firms export their products abroad, so higher foreign demand will force them to pay higher domestic wages; and (b) variations in the terms of trade will affect their domestic market share and consequently their domestic costs. Likewise, foreign marginal costs will depend on foreign as well as domestic output gaps.

What if, instead, firms that are engaged in international trade set prices in the currency of the market to which they are exporting, which is arguably the case for most foreign firms selling in the United States? Under what is referred to as local currency pricing, the law of one price no longer holds and exchange rate pass-through is incomplete. However, we can still derive an expression for domestic CPI inflation in terms of domestic and foreign output gaps, but the Phillips curve now includes an additional expression reflecting the impact of deviations from the law of one price on inflation dynamics. These deviations, in turn, can be tied to the easily observable real exchange rate (net of terms of trade effects).

Under both assumptions about pricing behavior, the composite coefficients on the domestic and foreign output gaps are identical functions of the underlying structural parameters of the model. Most importantly, as we show in our background paper, the coefficient on the domestic output gap declines as imported goods become more important in the consumption bundle, while the coefficient on the foreign output gap increases; that is, as foreign goods become more important in the consumption bundle, the strength of the relationship between the foreign output gap and domestic inflation will increase, while the relationship between the domestic output gap and domestic inflation will become weaker.

Turning now to slide 7, even prior to the recent flurry of work on globalization, a number of Federal Reserve economists had looked into the potential effect of foreign slack on U.S. inflation. These earlier analyses generally found that the estimated coefficients on measures of foreign slack were not statistically significant in traditional backward-looking Phillips curve regressions. In these earlier studies, the "rest of the world" was usually assumed to be the "rest of the G–7." Borio and Filardo revived the debate in a widely cited paper, and they found a statistically significant role for the foreign output gap in explaining U.S. inflation and a declining role for the domestic output gap. Subsequent work by researchers at the Board of Governors, however, cast doubt on the robustness of these findings.

The New Keynesian analytical framework that we use provides an account of inflation dynamics around a possibly time-varying steady state. Hence, when looking for patterns in the data, it seems appropriate to focus on the cyclical components of the variables. If we define the world as consisting of just the G–7 economies, as much of the older empirical literature had done, ordinary least squares estimates of simple open economy Phillips curve regressions suggest that there is a more significant relationship, in a statistical sense, between slack in the other economies of the G–7 and the cyclical component of inflation in the U.S. than there is between slack in the U.S. and inflation in the U.S. But while the G–7 group still accounts for a significant share of world GDP and of U.S. imports, these shares are declining, as shown on slide 9 in your handout. A more comprehensive empirical evaluation of the hypothesis would look at a larger group of countries. Slide 10 in the handout reports some of the results we obtain estimating simple versions of our Phillips curve specifications. For three of the four specifications, the estimated coefficient on the foreign output gap is statistically significant at the 5 percent level and exceeds the estimated coefficient on the U.S. output gap in magnitude. The evidence is far from overwhelming, to be sure, but it suggests that the idea is worth taking seriously and exploring further.

There are a number of possible reasons for the fragility of the evidence, mostly having to do with the conceptual and measurement challenges associated with estimating Phillips curves in terms of domestic and foreign output gaps. But we should note that it is possible to completely eliminate foreign slack variables from the Phillips curve. That is, the effects of foreign slack on domestic inflation can be fully captured in principle by movements in a terms-of-trade gap. Interestingly, when written this way it turns out that the slope of the Phillips curve with respect to domestic slack is exactly the same in the open economy and closed economy specifications of the model, as can be seen in slide 11 in the handout. The equivalence between these two approaches to capturing the relationship between foreign slack and domestic inflation also means that much of the earlier empirical work on this issue, including our own, probably needs to be reconsidered.

To sum up, there are sound analytical and empirical reasons for believing that globalization—and, in particular, the greater openness of the U.S. economy to trade—has had important implications for inflation dynamics. However, there are well-known conceptual and measurement issues associated with the use of output gaps. A terms-of-trade gap can, in principle, capture the effects of the foreign output gap on domestic inflation developments, but it remains to be seen how well a global slack perspective can improve our ability to forecast inflation and understand the tradeoffs that monetary policy faces. Jeff will now continue with the staff presentation.

MR. FUHRER.[6] I'll be referring to the third of the three exhibits in your packets. I just wanted to note before starting that the work I'll discuss reflects contributions from other people in the room today, including Giovanni Olivei, Wilbert van der Klaauw, and Todd Clark, as well as other economists who couldn't be with us today.

In current discussions regarding the likely trajectory of inflation, two issues loom large: first, whether "well-anchored" expectations will help to restrain inflation's decline and, on the flip side, whether an "unanchoring" of expectations could lead to an undesirably high rate of inflation; and second, whether and to what extent output (or, more generally, resource utilization) gaps are useful components of empirical models of inflation, and, if they are, to what extent current gaps will counterbalance the effects of expectations on inflation.

Page three of your handout provides a skeletal depiction of the most widely used framework for modeling inflation. Some version of this model is in use at virtually all Reserve Banks and the Board; in fact, very little exists in the way of strongly competing frameworks. As the top left panel of the chart shows, the framework suggests that inflation depends on the expectation of inflation in the next period, the current value of a driving variable such as marginal cost of production or an output gap, and the inherent inertia in inflation, captured by dependence on the previous period's inflation rate. Many other factors can influence inflation directly and indirectly, but these key elements sit at the center of the framework and of recent discussion. The extent to which each of these three factors contributes to the evolution of inflation remains under considerable debate.

The top right panel of that chart highlights an implication of this simple framework. If the framework is true in the current period, it holds in the next period as well. If you squint at these two panels for just a few minutes, and squint in just the right way, you'll see that the model boiled down implies that inflation fundamentally depends on current and expected output or marginal cost, as noted in the bottom left panel of the chart. Of course, expectations of output depend in part on expectations of monetary policy. Policy in turn depends on the inflation goal, which in this framework may vary over time. As a consequence, expectations of monetary policy

[6] The materials used by Mr. Fuhrer are appended to this transcript (appendix 6).

actions and the monetary authority's inflation goal are, not surprisingly, among the determinants of inflation.

The bottom right panel of that same exhibit displays the implications that this framework holds concerning which expectations measures should best explain inflation. Taken together, the simplest features of the model in the top left panel and its implications in the next two panels suggest that short-term inflation expectations matter directly—or, equivalently, that the expectations for output on average over the medium term matter directly. Less directly, but certainly importantly for this audience, long-run inflation expectations should matter, to the extent that they serve as proxies for the central bank's long-run inflation goal.

What do "anchored expectations" mean in this framework? Your next exhibit, the fourth exhibit, suggests that anchored expectations should be interpreted as having two components. First, the public knows the FOMC's numerical inflation goal, and second, the public believes that goal is not likely to change—at least, not by much. As indicated in the exhibit, many believe that the Fed's inflation goal has changed quite significantly in postwar history, particularly in the 1970s and 1980s. More recent evidence suggests that public perceptions of the Fed's goal have changed little in recent years. As shown in your next exhibit, exhibit 5, a carefully constructed econometric estimate of the inflation trend—often interpreted as the public's perception of the FOMC's inflation goal—suggests that it has indeed varied over time and that the variation is well proxied by the median SPF 10-year CPI inflation forecast, and that this proxy has been remarkably stable over the past 10 to 12 years. If this proxy accurately reflects the relevant expectations, then they are currently well-anchored indeed.

We now use a model that incorporates all these features—well-anchored expectations, some effect of output gaps or marginal cost on inflation, and some effect of lagged inflation—to quantify the extent to which, in circumstances such as those we face today, well-anchored expectations may serve to offset downward pressures on inflation from dramatic declines in marginal cost. Your next two exhibits consider such an exercise.

In the first case, shown in exhibit 6, expectations are purely forward-looking. The economy starts at a 2 percent inflation rate, that's the black line in the top panel, with marginal cost, shown in the bottom panel, well below its historical average—as is the case today for real unit labor costs for the nonfarm business sector, which are about 8 to 10 percent below their long-run average. Somewhat optimistically, I assume that the output gap is only modestly negative. In these circumstances, the inflation rate, which is shown by the solid black line, falls to a bit below 1 percent, and rises after two to three years to the Fed's assumed inflation goal of 2 percent, which is depicted by the red line.

In the second case, which is shown in your next exhibit, exhibit 7, inflation depends in roughly equal measure on lagged and expected inflation. The other features of the simulation are identical, but the results in this case are dramatically different. Inflation falls significantly below zero, and the funds rate, the dashed black line, is pinned at the zero lower bound for several quarters. I should emphasize that the coefficient on marginal cost in these simulations is quite small by historical standards. The point is that one needs only a very small dependence on marginal cost to develop such results.

Clearly, the implications for inflation in this canonical framework depend critically on the way expectations are formed—purely forward-looking or with some measure of backward-looking influence. So which is a better description of inflation? Your next exhibit, number 8, outlines an empirical approach to answering this question. We estimate a model that allows expectations to be determined by any combination of the following measures: the rational or model-consistent expectations employed in the preceding simulations, lagged inflation, and short- and long-term survey expectations, here using the Survey of Professional Forecasters' measures. We allow the contributions of these four expectations proxies to vary over time.

Your next exhibit, exhibit 9, presents a simple summary of the results. On average over the past 30 years, the purely forward-looking expectations have played at most a modest role in explaining inflation, and that role appears to have declined in importance in recent years. Lagged inflation has played a somewhat larger role historically, although its role has similarly declined in recent years. Survey expectations have helped to explain inflation, and their influence appears to have risen in recent years. I would note that the survey measures are well-approximated by slow-moving averages of recent inflation, which suggests that they too may "anchor" inflation, as they will lend a slow-moving component to it. While this might serve to slow the decline of inflation in the face of significant marginal cost pressure, it will also slow inflation during its ascent to the Fed's inflation goal. The bottom line of this exercise is that the data suggest that the very favorable outcome in the purely forward-looking exercise of exhibit 6 is not our best forecast.

Your next several exhibits consider what would happen if the public's inflation expectations were to become unanchored. Note that the models that we used in the simulations just a moment ago require inflation ultimately to rise one-for-one with an increase in long-run inflation expectations. Interestingly, estimates of a less structured empirical model, shown in exhibit 11, yield the same basic result. A reasonable interpretation of that result is that when long-run expectations move significantly and persistently, they likely reflect a change in the public's perception of our inflation goal. Such a shift, if sustained, would very likely feed into inflation over time.

Your next exhibit, number 12, considers a potential cause of such a shift in long-run expectations. Based on the same empirical model, the exhibit examines the response of long-run expectations to a decline in core inflation. The figure suggests that, over the past 25 years, persistent deviations of core inflation from the Fed's inflation goal have engendered significant movements in long-run expectations. This exhibit highlights the risk that, in the wake of declines in core inflation over the past year, long-run expectations could also decline. Together with persistently large output gaps and cost pressures, declining long-run expectations could imply sizable declines in inflation. Of course, the risk could play out in the opposite direction if expectations moved persistently higher.

Another candidate for spurring such an expectations dynamic is the potential link between inflation expectations and the expected path of federal deficits. The New York Fed conducted a set of surveys to elicit perceptions among consumers and financial experts about the association between future changes in government debt and inflation. Survey responses shown in exhibit 13a indicate that a majority of consumers perceive unexpected increases in government debt to be inflationary, irrespective of whether unexpectedly high debt is due to a shortfall in tax revenues or higher-than-expected government spending. In a follow-up survey, the scenarios described in the exhibit were expanded by adding specific hypothetical causes for the increase in government spending and shortfall in tax revenues. These additions had no effect on the response patterns. Moreover, they are robust across education, income, and financial literacy categories of consumers.

In contrast to consumers, financial experts view the scenario in which higher-than-expected debt is due to a shortfall in tax revenues—where a recession is the leading cause for such a scenario—as not inflationary, with 6 out of 11 financial experts associating such conditions with a decline in inflation. However, 10 out of 11 financial experts perceive the scenario in which there is higher-than-expected government spending to be inflationary.

Having discussed some ways in which expectations could become unanchored, we now attempt to quantify how unanchored expectations might affect our outlook for inflation. Exhibit 14 displays a simulation of the model we discussed earlier in exhibit 7, except in this case the public mistakenly believes the central bank's inflation goal has risen to 3 percent. The upward pressure that this places on inflation, the black line, is noticeable—inflation does not decline as deeply as in the simulation with anchored expectations. The funds rate, the black dashed line, is pinned at the zero lower bound for a shorter time. But the Fed's actions and the course of inflation gradually persuade the public, in this model, at least, that the Fed's goal is not 3 percent, so the economy returns to its desired state of full employment with price stability. Even with unanchored expectations as characterized in this exercise, very low costs and sizable slack at the onset of the simulation still imply a protracted period of low inflation.

All of the Phillips curve models, structural or reduced-form, old-fashioned or new-fashioned, hinge on the influence of an activity or cost variable. Without the influence of such a variable, these relationships are vacuous and inflation can be indeterminate—there is no channel for monetary policy to control inflation, and, as suggested in exhibit 3, the relevant expectations have nothing to anchor them. Exhibits 15 and 16 examine the issue of whether activity gaps have been reliable inflation predictors. Much ink has been spilled over this issue, so we are unlikely to provide a definitive answer there. But our empirical work corroborates the commonsense findings of Jim Stock and Mark Watson, and that is that gaps matter when they're large, but less noticeably when they are small.

The figure in exhibit 16 summarizes the evidence simply, although it takes a second to orient yourself to it. Using historical data from 1961 to 2009, the figure compares the absolute value of unemployment gaps on the vertical axis to the difference between forecast errors from a Phillips curve and a naive statistical model of inflation that does not include the activity gap. The reduction in forecast error provided by incorporating an unemployment gap measure is insignificant when the unemployment gap is near zero, toward the bottom of the chart. But, as the magnitude of the gap increases, the forecast error made by the gap-augmented model falls relative to the error from the naive model, as indicated by the prevalence of blue diamonds to the left of the vertical axis in the upper half of the chart. This finding is consistent with the small estimated coefficients on output gaps in Phillips curves for the 1990s and early 2000s and explains the finding in some prior research that during those relatively calm times, the naive model predicts inflation about as well as, or better than, a gap-dependent forecasting model. This is less likely to be the case in current circumstances.

What does this empirical finding imply for the current inflation forecast? Your next exhibit, number 17, shows that a model that incorporates this nonlinearity explains the past several years' inflation data quite well. However, the surge in unemployment over the past year implies a significant decline in inflation to near zero over the next year or so. Thus, the next several quarters will provide an important test of this model.

Finally, we would be remiss if we altogether ignored money in a discussion of inflation dynamics. Your final exhibit, which is courtesy of the Minneapolis Fed, displays the correlations between money growth and inflation at progressively longer horizons from left to right. While these correlations do not show causality, many would agree that, over long periods of time, high growth in money is likely to be accompanied by high inflation. Because such correlations are essentially contemporaneous, they also do not imply that money can be used to predict future inflation. As the exhibit suggests, Milton Friedman may now rest in peace.

That concludes our prepared remarks. We'd be happy to take questions.

CHAIRMAN BERNANKE. First, let me thank the staff for an outstanding effort in putting this all together and, indeed, coordinating among different Reserve Banks. We now have an opportunity for questions or comments. Let me start with a question for you, Mike. You talk about statistical models of gaps, but I think they look to be mostly constructed from single-variable analysis, looking only at GDP. Take your example with the productivity shock—if you also looked at, say, productivity or unemployment and so on, you would get more information, and you might be able to identify the shock in that case. So wouldn't a multivariable analysis reduce some of your concern about statistical models?

MR. DOTSEY. I really can't answer that. I haven't done that research, and I haven't looked into that. I don't know if Andreas, who's also with me today, has anything he could add.

MR. HORNSTEIN. The short answer, to be honest, is yes. For this particular example, the way it's structured, you rely on price rigidities. So with a productivity increase, output is not going to move so much and employment contracts. A particular example would predict that if you look at more information, you might reassess what you think about the gap. On the other hand, the way these gaps are usually constructed, you generate the trend output path—you don't use that kind of information.

CHAIRMAN BERNANKE. President Lacker.

MR. LACKER. Mr. Chairman, if you take the model as a maintained assumption, it tells you how to calculate the gap, and you do use all those variables. So when they talk about model-generated gaps, that's exactly what they're talking about. I think the difficulty arises, as their memo and the Chicago one illustrate, in that different models give you different estimates of the gap, and different estimates of how productivity shocks affect what you regard as—

CHAIRMAN BERNANKE. I thought the point was if you look at just the path of GDP and you took a quadratic trend or something out of that and looked at residuals, the gaps you would construct that way would not be necessarily economically meaningful for reasons we understand.

MR. LACKER. In a statistical atheoretical model. Right.

CHAIRMAN BERNANKE. But if you believed in their model, then productivity and unemployment data would help you identify gaps in their model—which is not a bizarre model; it's similar to a lot of others.

Questions or comments? President Kocherlakota.

MR. KOCHERLAKOTA. Thanks, Mr. Chairman. I was impressed with all of the papers. It was obvious that a lot of work went into them, and I'm very appreciative of that.

I wanted to talk about two messages I took away from the Philadelphia–Richmond paper. It's more commentary than questions. One is the discussion that President Lacker and Chairman Bernanke were just having about the difference between old thinking and new thinking, or old Keynesian and New Keynesian models, about gaps. I think this difference is that just looking at a statistical trend as a way to figure out what potential output is or efficient output is can be misleading. Just to cite the current example, output right now is about 8 percent below trend as measured from December 2007. The question is: How much of this fall is efficient? How much of this represents a deviation from potential output? The theme that comes out of the Philadelphia–Richmond paper—and it's basically a theme of all work on monetary economics for the last 15 years—is that there's really no way to answer this question without a model.

The second message that comes out of this paper is that measuring an output gap can be hard. I think that, at times, the paper, or the presentation, seems to imply that this is somehow a new problem with New Keynesian modeling when, in fact, it's pretty much an old problem, which is true in all economics—we can come up with observationally equivalent models that, in this case, will give rise to different measures of output gaps and then different implications of optimal policy. I think the Chicago paper points this out—that this is not something special to the New Keynesian approach to thinking about monetary economics, but rather it's something that's present in all macroeconomic models.

In fact, I think the New Keynesian approach actually helps us with thinking about sorting across models because it brings so much more auxiliary information to bear compared to older approaches; for example, it requires consistency between household-level and firm-level expectations and observed data, and there's consistency between asset pricing and firm investment decisions. All of these kinds of restrictions are valuable sources of information that make it easier to use data to distinguish among existing models. The point is that I think the Philadelphia–Richmond paper is right that these newer models don't fully solve this identification problem—what are output gaps, what's the right thing to do at any given moment in time?

I think there are two parts to trying to respond to this problem. One is that we use a wide range of models, and this is something you see in the Bluebook—several models are considered. We might even think of expanding that range of models. And then there's supplementing that with good judgment, which is what the Chicago memo, I think, is trying to argue; that is, if we bring enough good judgment to bear, we can actually sort through some of these issues. That can be very helpful.

The second part, which is something that's more common in other parts of macroeconomics, is to use microdata as an auxiliary source of information beyond macrodata. The EDO model, which is used at the Board, is one step in this direction because it uses sector-level data, but there are lots of other kinds of microlevel data that can be very informative. For example, there's this issue about whether or not inflation is backward-looking, that is, for example, whether, when firms set prices, they look backwards or not in terms of indexation.

Well, we have lots of microdata on price setting. Mark Bills at the University of Rochester and Pete Klenow at Stanford University have basically spent the last decade on this issue. The ECB has commissioned studies in a wide range of countries to do this in Europe. It would be great to supplement some of our thinking about just building aggregate-level models with information from microlevel data. Likewise, a lot of times the questions hinge on these latent or unobservable things in the macro model which we could actually try to get information about from microlevel data, for example, questions about firm financing costs, questions about the marginal efficiency of investment. There can be uses for microlevel data to try to supplement what's in the macro models.

So by and large, I like the Philadelphia–Richmond paper and presentation, but I think they came across as far too negative about the state of play. I think that we've made enormous progress in the last ten years in bringing models to bear that are useful for policy analysis, while at the same time they embed the ingredients of modern macroeconomics that have been proven useful in other contexts.

CHAIRMAN BERNANKE. President Evans.

MR. EVANS. There's not a long list of people already?

CHAIRMAN BERNANKE. No, you're next.

MR. EVANS. All right. I'm a little reluctant to intervene so early because I have a series of rants that I could go on. [Laughter] And I apologize for that.

Regarding your question, Mr. Chairman, I think you put your finger on one of the things that bothered me. But, first off, I thought this was a terrific set of papers, and, they're very helpful as we think about these issues. I think the papers expose a number of Committee members to a different type of discussion, one that economists tend to have, which you may or may not like, but, at any rate, this is what we do.

I thought the Philadelphia–Richmond critique of statistical gap measures and New Keynesian models was just a little too mechanical and didn't represent how we actually use these measures in this room. They had the example of a beneficial productivity shock and a sticky-price model. If everybody followed that, their analysis says that, after a positive productivity shock we'll get a positive statistical output gap. We'll see that output goes up, but the trend is going to be smoother and so it's positive, while, in fact, what is actually taking place is that potential is a lot higher and output only went up by this much. So it's a negative type of gap. And if all we're looking at is the output gap, as Mike properly noted, we're going to mechanically make a mistake.

But the question is: Have we ever gone through this? We have. The Greenspan Fed lived through this during the second half of the 1990s. The debate between irrational exuberance and a once-in-a-generation productivity acceleration was squarely put on the table in those discussions, and, in the end, the productivity argument carried the day, and policy did not erroneously tighten. How did we end up there? Well, Chairman Greenspan and the Committee dismissed looking only at single measures. I'm sorry Dave Stockton isn't here, because that was very uncomfortable as Chairman Greenspan would say, "Phillips curve—no, no, no, we don't want to look at that. Capacity, no, no, no." And nobody could quite figure out exactly which resource slack measure he wanted to look at, but he was looking at resource slack. He used other information beyond the comparison of actual output with a simple trend. So if we think about the productivity shock example in the Philadelphia–Richmond memo, in a sticky-price model, because output cannot expand to potential, labor input is going to fall. This comes out of all the model simulations. Ellen McGrattan has papers where you see that from this type of shock. So labor slack is negative.

What about inflation signals? A positive statistical gap relative to a linear trend would call for upward price pressure, so we'd be worried about inflation picking up. But in fact, in the model, the true output gap is negative and there's downward pressure on inflation because marginal costs are lower. So, indeed, in the second half of the 1990s, we saw a good deal of such downward cost factors. We were paying attention, and we did not get caught up in just this single output gap measure. Fundamentally, we scratch our heads when we have different measures that don't line up. That's a real-time warning, and we try to reconcile these conflicting signals. We look at our models and our assumptions more closely. Just think about how the Greenbook gives us a good view on structural productivity—each Greenbook, which is more often than we really need it because it doesn't change that much—but still, that's quite good. And then there's other anecdotal information. Chairman Greenspan kept saying—and I know I didn't understand it when he first said it—that we heard plenty of business reports of higher productivity and earnings analysts' five-year-ahead forecast smoothed were telling us something and that turned out to be right. So the bottom line is that we lived through an example that's like the most troubling example in the paper, and I think we passed it. So that was pretty good.

CHAIRMAN BERNANKE. I guess it was a productivity episode also in the jobless recovery after 2001 where we saw unemployment high relative to output—somewhat similar.

President Lacker.

MR. LACKER. Thank you. I just want to sketch out how I see these presentations related to past discussions we've had, as President Evans did. I've often sensed some intuitive hurdles to consensus here. At this end of the table, some participants have argued that you ought to think of the gap differently from the unemployment rate relative to 5 percent or so. That intuition—that the gap has to be really big right now with unemployment at 10 percent comes from this earlier way of thinking about macroeconomics that President Kocherlakota referred to. We had macroeconomic models that were essentially static (the static part isn't important for this purpose), but they weren't growth models, and they were grafted on a deterministic growth model, and the idea was that the deterministic growth model gave you a benchmark of what output and activity could be and what inflation could be, and then macroeconomics was about deviations from a deterministic growth model.

We faced that, and there was this challenge of integrating the two. We didn't know how, and we know how now. The way we integrate growth and fluctuations is the stochastic growth model, and that provides an internally consistent, coherent understanding of the determinants of growth and fluctuations. So we don't need to rely on this ad hoc marrying of two different, disparate models.

When I think about gaps, I always want to start from scratch. I want to say, "All right, let's take a model and let's pretend you don't know what a gap is or you don't know how a gap is defined. Let's look at inflation dynamics. Does the difference between output and some other counterfactual output appear in that equation? And let's look at optimal policy, and does the difference between output and some other counterfactual output appear in optimal policy?"

When you do that in these stochastic growth models, what you get is the counterfactual with which you should compare output to figure out what inflation is going to do and what policy should be. It's something that responds to shocks. That's the basic lesson I get out of this class of models that Mike Dotsey was talking about, unlike the deterministic growth model where the benchmark counterfactual output everyone was thinking about is something that, because it comes from the deterministic growth model, does not respond to shocks; so you can estimate it easily with an exponential function of time into a smooth statistical trend.

The thing to remember here is that it's marginal cost, and it's just this use of production functions to get to an output gap that gives us the ability to write these modern inflation dynamic models in terms of output gaps—hence my facetious suggestion to substitute real marginal cost for resource slack in the statement. Another way to look at this intuition is to think about a 6 percent unemployment rate in January of 2010. That seems preposterously unlikely. It seems that it would be really hard for us to engineer policy coming out of this meeting to get that. But if you're having trouble understanding an output gap or a potential that moves down a lot in a recession, think about why you don't think we could achieve a 6 percent unemployment rate in the first quarter. It would be really costly to employ all of those resources. It's that the marginal cost is kind of high now—it's not as low as you would think by just looking at the gap. That's the intuition, I think, for this other way of thinking about what counterfactual level of output or activity ought to be your reference in thinking about inflation dynamics.

I want to say a word building on what President Kocherlakota observed about the use of models in policy. Dotsey et al. conclude that these models are not quite ready for use in policy, and I'd qualify that. To paraphrase Churchill, they're not quite ready for policy, except that all other models are less ready for policy than these models are. I think it's fair to say that this broad class of models is the only game in town now. What most people have said is that further approximations to reality are all going to be extensions of, elaborations of, this broad class of models where there is price setting with price stickiness, and that's where the real nominal interaction comes from.

Within a model, you can answer these things really tightly. So you've got to step back and look at a range of plausible models that, as President Kocherlakota points out, fit the data roughly equally well and decide what to do. If you don't look at models, you're still using a model, because you've got an implicit model in your head. It's kind of like axiomatic choice theory, right? You're acting as if you have a model in your head if you're making a choice. Being explicit about which models you understand and you're relying on seems obviously preferable to an approach where you don't formalize those things and don't tie down your insights or your intuition with the kind of internal coherence that President Kocherlakota described.

I'll make a final point. Except for the case of purely backward-looking inflation expectations, the models depict us as in an equilibrium in which we are following, have always followed, and will always continue to follow a fixed rule, a fixed mapping from economic circumstances to what we choose. Maybe there's some drift in it over time, but that's the basic framework, so at all times you've got to look at a gap. But, then, what does it tell you about policy? What does it tell you about what it's going to take to follow through on that rule in order to maintain the consistency of inflation expectations with what you would like to see maintained? That's a key question. Sometimes the gap doesn't say as much about that. Sometimes I sense a large gap being adduced as evidence that we can pause for a long time, and it's not obvious that that's the case. It's not obvious that our policy rule doesn't build in a different response. So that's just my effort to tie this back to discussions we've had around this table. I compliment the authors. I learned something from all three of them, and I'm grateful for their efforts.

CHAIRMAN BERNANKE. President Lacker, the only thing that puzzles me in what you said is the implication that we don't use models. We do use models.

MR. LACKER. We do.

CHAIRMAN BERNANKE. And alternative models. The staff uses both large macro models that try to deal with aggregation and complexity, and they use smaller models. I think, as you say, there's only one model in town. I don't think you can write down a Keynesian model that doesn't have a role for gaps in it.

MR. LACKER. I didn't mean to imply that you or the Board staff don't use models.

CHAIRMAN BERNANKE. Okay.

MR. EVANS. Could I make a comment?

CHAIRMAN BERNANKE. President Evans has a two-hander.

MR. EVANS. This is a line of commentary that I don't always follow, that the gap is somehow a special variable, an endogenous variable. In the context of writing down an equilibrium model, you could write—I'm pretty sure this is true—the equilibrium decision rules, which are a function of the relevant state variables, which could be transformed so that the output gap captures that part of it. That would say that, given our policy response function parameters, this is how everything responds to the gap, and we're following through on it. So it requires art to know how we should be responding to those things, but it's not prima facie wrong.

MR. LACKER. I'm not sure what you're saying.

MR. EVANS. When we say the output gap looks like this and so I think that policy ought to respond in this fashion because disinflationary forces are going to change things a little bit, there's nothing in that that is in principle against the model, and we're the central bank in the middle of that model.

MR. LACKER. Yes.

MR. EVANS. Okay. Then I didn't understand your comment about when we talk about output gaps.

CHAIRMAN BERNANKE. President Yellen.

MS. YELLEN. Thank you, Mr. Chairman. I want first to thank the authors and presenters for raising a host of important issues about inflation dynamics. Uncertainty about the longer-run inflation outlook is quite high right now, and the extent of disagreement among forecasters is quite large. Even so, as I read the papers I was asking myself if there were some morals here for current policy. I identified three that emerged from the staff contributions and the broader literature, and I just wanted to take a minute to highlight what I thought the policy conclusions are.

First, the papers and broader literature suggest a very strong theoretical rationale, and I see significant empirical evidence, for the view that the level of economic activity matters to inflation. The general principle that very low levels of economic activity—whether they're measured by marginal costs as they are in the New Keynesian model, or by output gaps, capacity utilization, or unemployment—cause inflation to fall is a common thread across a broad set of macro models used for monetary policy analysis. As Jeff Fuhrer noted, without some connection between real activity and inflation, these models just have no linkage between monetary policy and inflation. As Jeff noted, models with slack fit the inflation data reasonably well, and over the past year Phillips curve type models do a pretty good job of explaining the decline we've seen in core inflation. This is a point that I made and President Evans made as well a couple of meetings ago. Going forward, with marginal costs obviously very depressed and considerable slack in evidence by any measure, these models predict continuing downward pressure on inflation.

A second clear policy takeaway from the literature and presentations is that, without question, inflation expectations are an important determinant of inflation. And, as with slack, there is considerable uncertainty about how to measure those expectations and about what forecast horizon is relevant. But in the current situation, a wide range of inflation expectations has been holding fairly steady, and I think the presentations suggest that well-anchored inflation expectations should help to counter the disinflationary pressures arising from very low levels of economic activity over the next couple of years. This is something that makes me less worried that I otherwise would be about outright deflationary outcomes.

The third policy conclusion to my mind is the one I want to emphasize the most. There is obviously a great deal of uncertainty about the exact nature of the inflation process, and I conclude that that's something we have to take account of as we formulate monetary policy. There's a large literature on optimal monetary policy under uncertainty, and it lays out several key principles.

The first is that there are relatively simple policies, and Taylor-type rules are a class of them, an excellent example. These policies are robust in the sense that they work well across a range of different models and degrees of difficulty in measuring gaps, and there is a very large literature documenting this. As we know, the policy choices of this Committee have come reasonably close to the predictions of some variant of the Taylor rule for the last several decades, and, as the Bluebook indicates, most variants of Taylor-type rules currently indicate, as I said before, that the funds rate should stay near zero for a long time.

A second principle of optimal policy under uncertainty is that policy should be formulated to guard against particularly undesirable outcomes, and this principle to my mind suggests we should stay at the zero bound for an extended period because we can easily raise rates, but it's hard to lower them.

A third principle is that policy responses to different economic indicators should depend on the quality of the signals they are sending about the state of the economy. And in the current situation, the level of unemployment and the degree of slack in the labor market that we see is so enormously large by every measure that it is sending a strong signal now, and that's something that we should be responding to.

CHAIRMAN BERNANKE. Thank you. Governor Kohn.

MR. KOHN. Thank you, Mr. Chairman. I had a question rather than a comment, and it's for Mike. I had trouble understanding the paragraph or two that you had in your paper about the current situation. I guess you say we shouldn't be sitting around this table talking about gaps. So what should we have been talking about this morning? And within this model, how do you explain what has happened over the last two years? We've had an enormous drop in output and a significant decline in inflation. So how would you have designed this morning's discussion if you had had an opportunity?

MR. DOTSEY. I don't know if I can tell you exactly what's going on in the economy today. That's a little bit of a hard road to walk down. But with regard to your first point, if I were sitting at this table, I would find the discussion among Charlie and Narayana and Jeff very productive. Charlie could have had his entire discussion without mentioning the word "gap" once. Basically he was talking about what kind of shocks he thinks are hitting the economy, given an underlying model based on, I guess, some of his own work and things like that. What kind of impact would those shocks have on the economy, and then what should monetary policy's actual response be? That I find extremely valuable in my own thinking, and that's the way I think about policy.

The gap construct is something that, as Charlie commented, is going to be model-specific. But I find that when people rely on that too much without doing the hard work, which people have done around here in this discussion, of talking about what are the beneficial models that help us understand things and the disagreements we might have over them in terms of identifying what's going on, then that can sometimes lead away from a productive discussion. So I don't know what you talked about this morning, but if you—

MR. KOHN. So within the confines of the model, what happened over the last two years? How did we get where we are, and what are the implications of that for policy?

MR. DOTSEY. It's unfortunate for the New Keynesian models that at this point it seems that what we had was a large financial meltdown. What we do not have yet, but which is part of the big research agenda that's just taking off, is a way to integrate the way we think about financial markets and their role in the economy. So if I were trying to do things now, I might say I'm going to go look at Bernanke and Gertler and Gilchrist or I'm going to look at Kiyotake and Moore or maybe models like Diamond and Rajan and I might even pull away from the New Keynesian paradigm and try to understand what they're telling us is going on in the economy, and then try to figure out a response. So I think there's no getting around it, as Jeff Lacker says—we've got to put our models on the table, see where they fit things, and then figure stuff out imperfectly. And in that discussion, if you want to use gaps and you find them helpful, that's fine, and they may be a good communication device as well. But I don't think they're essential. They're an artificially constructed device that you can just sort of think about or not.

CHAIRMAN BERNANKE. A two-hander from President Kocherlakota.

MR. KOCHERLAKOTA. But the model is trying to account for all variability in the data, so it's going to say something about the answer to Governor Kohn's question about what has happened. What is the model going to say? Some shock has taken place according to the model. What is the shock that has happened in the last two years, or what is the constellation of two or three shocks that have happened in the last two years?

MR. DOTSEY. I would be no more informative on that than anybody here. But one could say that one of the things that has happened in financial markets is that capital is not being allocated efficiently across the economy; that is, the firms that might be getting the capital in normal times, maybe smaller productive firms, are not getting it, and some larger, non-productive firms, perhaps because they have better balance sheets or have been around, are getting it, and that would look like a technology shock.

But, then again, maybe we're in a world where we have ambiguity aversion in our model, and all of a sudden people have become very, very uncertain about things or demanding large risk premiums, and, as a result, investment isn't being done because it's being priced in a crazy way.

MR. KOCHERLAKOTA. But in the Philadelphia model that you use?

MR. DOTSEY. In the Philadelphia model where this is being soaked up as an inefficient investment shock that tells you that potential is going down a lot as well as output.

MR. KOCHERLAKOTA. Right.

MR. DOTSEY. I'm a little bit uncomfortable with that as the explanation, but that's what that particular New Keynesian model would say. I'm trying to remember, I think the model at Chicago also has a big role for some of these investment-type technology shocks as well and whether they are—

MR. EVANS. I would guess it does.

MR. KOHN. How would it explain the decline in inflation, then? If potential has gone down along with output, why has inflation gone from whatever it is, 2½ percent to 1½ percent?

MR. DOTSEY. Given that unemployment has gone up to 10 percent, and in Jeff's graphs you thought that we had this 8 percent drop in marginal cost, or some giant gap, the question would be: Why hasn't inflation gone from 2.2 percent to minus 2.2 percent, not from 2.2 percent to 1½ percent?

MR. LACKER. Well, the answer is always going to be our policy role, right? Isn't it?

MR. KOHN. We've changed targets?

MR. LACKER. The answer to why inflation did what it did would be a combination of the model and our policy role.

CHAIRMAN BERNANKE. Mike was kind enough to mention Bernanke, Gertler, and Gilchrist earlier. [Laughter] I would point out that Mark and other coauthors have updated that paper to include exactly those kinds of shocks, and they get disinflation and all of those things. And what's happening is that as there is a shock to the capital of the banking system that prevents credit from going through to purchasers, or small businesses, or consumers, or whatever, the drop in their demand is just a decline in the aggregate demand curve, and you get all the results you would expect from that.

A two-hander from President Evans.

MR. EVANS. Well, let me just say that I agree with many things that Mike just said, and, in fact, in the specification that Justiniano and Primiceri write down, the output gap is not a fundamental. It's a constructed variable, and it's really the marginal cost pricing, as Jeff mentioned, that is going to be fundamental for how firms are setting prices. So that's absolutely right. It's also in the language that we as economic researchers are comfortable with, and we can lay it out and understand it quite well. Part of what we're getting into is how we communicate with other people and with the public, and resource slack tends to be a pretty good proxy in a number of cases, so I think that's why we keep coming back to it. These memos are right to point out the cases where we are going to be misled by that, and then the question is: How do we defend against that? I think our track record is pretty good. We always need to be reminded of this, and getting the models better would be great.

CHAIRMAN BERNANKE. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I really enjoyed this discussion and the papers. I thought they were really good. I'm going to review three things I said earlier on this issue and see if any of my views have changed, given those priors that I laid down before the discussion.

One of the things I said earlier in a memo was that theoretical conceptions are hotly contested—that's just the state of play in the macro world. I'm actually happy to see a debate between the Philadelphia conception, the DSGE model, and the Chicago conception—it lays out explicitly "Here's what the assumptions are," and I'm sorry it's complicated, but there are lots of issues there. And that's where we are. But there's also the question of moving between models where you can pin down what the output gap is—a clear theoretical conception versus the traditional concept of an output gap. There you don't know what the mapping is back to the people you're trying to help with your policy, and I think that's harder to swallow. And estimates, given any concept, are subject to difficult measurement issues, and we understand that.

The second thing I said was, "Okay, forget about theory, you don't care about theory, blah, blah, blah. You just want to find an object that will help you predict inflation, and you're happy to use whatever this object is." I think that, controlling for expectations, a gap is only a marginal contributor to movements in inflation. I would say in the Fuhrer et al. work, one interpretation of the empirical relationships that you see is precisely that monetary policy did not react sufficiently strongly to offset whatever shock hit the economy to keep you close to the inflation target.

One of the themes I've come back to over and again is that if we're doing inflation targeting or some kind of quasi-inflation targeting—if that's what we're doing— if you run it really well and your tools are pretty effective, you should be able pretty much to offset all of the shocks and keep inflation really close to target. You go back to run your regressions later and see what the relationships are. It's only going to look like inflation is related to the target or a constant. So I think that is an issue for the empirical work—for those who want to throw away the theory and just find variables that are going to help you predict inflation. I think, frankly, that inflation targeting, or quasi-inflation targeting, has worked pretty well over the last 15 years or so in the United States.

The third point I made—a point on which the papers were particularly uninformative—is how gaps are related to bubbles, and that, I think, is uncharted territory. A lot of our rhetoric says this is a housing bubble, the housing bubble somehow collapsed, and that's what's going on in this economy. I don't see models that have those kinds of bubbles in them. To me, a bubble has to mean something about an equilibrium that is not the fundamental equilibrium—there's this fundamental equilibrium in the economy, but somehow actual prices and actual expectations are up somewhere far away from that fundamental. And then, that collapses on you, and you come back to the fundamental. What does that mean? Does that mean that you're back at your trend and you shouldn't try to reinflate the bubble, or what? I think the Chairman has said that bubbles are one of the really tough issues of the decade for monetary policy, and I agree completely with that.

The thing I was worried about for policy is that we might be overemphasizing output gaps in our policy discussions when we say blanket-type things like, "Well, it looks like gaps are big", or "It looks like resource utilization is really low compared with some conception of where we think it should be, and, therefore, there can't be any inflation in the near term or the medium term." I think that might be an over-interpretation of what both the theoretical and the empirical literature tell us.

I had comments on all of the papers—I'm going to shorten this up. I just want to talk about the global slack hypothesis a little bit. We've been talking in the profession about globalization for years and years and years. I have to say that the conventional wisdom, the hallway discussion that you get on this, is that you can treat the U.S. like a closed economy and it is okay. I actually think that that has not been that bad an approach over the past 25 years, but we may be at an inflection point where that is not the right thing to do going forward. If you're going to look at empirical evidence that's collected over the past 25 years, you're going to get weak relationships with respect to the global output gaps or the global economy. That may not be the right way to think of things going forward.

I have also been concerned with the question of optimal policy in open economy settings, which I think has generally been deemphasized around the table here, for the reason I just gave, for years, but that may not be the thing to do going forward. In the fledgling literature on optimal policy and open economy models, you have always got a situation where you've got some domestic prices, you've got import prices, and then you're going to construct a price index that includes both. Should you be reacting to those import prices? That's the question. The models tell you "no." The models say you should have some conception of domestic prices or whatever the sticky prices are in your economy and you should react to those. The foreign central bank is already reacting to those prices in the foreign economy. So when you react to the import prices, you are sort of doubly reacting, because foreign monetary policy is already trying to control those prices. So the fact that you're reacting back and forth then can create problems in the global equilibrium—a bubble, if you like. I worry about that, and I don't think that that has been thought about carefully enough, and I think it will become more and more important as we go forward, especially with the rise of Asia.

Let me talk about the Fuhrer et al. paper for just a second. He has got backward-looking expectations, a theme to which I am very sympathetic. You're thinking about trying to measure this perfectly forward-looking component during the Great Moderation, or during the past 15 years, a period where it may not be that important, because, in some sense, nothing happened during that period. But the question would be: If you get to special times, is that really the way to think about expectations, as purely extrapolating from the past? There's a famous paper in macroeconomics—some of you will know it—called "The Ends of Four Big Inflations" by Tom Sargent. He describes hyperinflations after World War I, when prices were going up like crazy. The government makes a credible commitment on a day, and the hyperinflation ends at noon on that day—it's just amazing. So there's an example. It is a hugely stressed situation, but rational expectations come in with a vengeance. Are we in a highly stressed situation? Maybe. We avoided Depression 2.0. You might interpret that as a very special situation relative to the past 25 years. That's what has got me a little worried about a backward-looking approach to expectations. I think the threats of sharp movements in this kind of environment are very real. We have to be careful about them. Will they occur? Maybe not. But we need to be very careful in this situation. So that's just a comment on the Fuhrer approach. Thank you.

CHAIRMAN BERNANKE. Thank you. President Plosser.

MR. PLOSSER. Thank you, Mr. Chairman. I'll try to keep my comments brief. I want to talk a little about what I took away from some of this. I found the papers very interesting and fun to read and think about. One of the lessons I take away from this—and it's one that I've taken away for some time, and Jeff referred to it—is that a little humility may be in order, in terms of our ability to truly understand particularly short-run dynamics in the inflation process.

One of the things that I think we learned from this discussion is that, depending on the model that you write down, and depending on the nature of the shocks that you allow to hit that model, you can get different outcomes, you can get different relationships between variables within that model. That means that we need to be a little cautious in our interpretation about how we rely in our policy discussions on one set of variables versus another set of variables in guiding our outlooks for inflation. One of the things that I have tried to convey in some of my comments over the last several months is that I have been worried that in the way we talk about inflation—particularly the future of inflation and deflation—we have become a little too fixated on measures of output gaps. One of the things we learned from this is that, depending on which output gap you write down and what you think of the shocks, other things may matter, so we need to be a little more careful about "diversifying our portfolio" about what's going to happen and protect ourselves from being put in a bad spot.

So, I think humility is important. I think the nature of the shocks is important. I think the conversation between Governor Kohn and Mike Dotsey about what we think this shock is and what it did is a useful kind of conversation to have. The problem comes when the output gap becomes a shorthand for a whole bunch of other stuff, and then it becomes a communication problem, because it may or may not be the right shorthand. There may be circumstances where you need a different shorthand or a different measure. And that's where talking about the nature of the shocks becomes useful in how we think about it.

If you focus on traditional measures of the output gap, it seems to me there are circumstances where, with excessive emphasis on trying to close that gap—I'm not talking about the current circumstances, necessarily—you may not be conducting policy in an optimal way or even increasing welfare. You may actually reduce welfare if you focus on the wrong metric or the wrong target with the gaps. So there may not be an easy, one-to-one correspondence at times between policy that's welfare improving and policy that closes gaps, and we need to be cautious about that. Charlie Evans commented earlier about taking other variables into account, and it is very important that we do that.

The last comment I'll make is that I want to reinforce Janet Yellen's point, because she and I agree on this—some people may find that unusual. Given the uncertainty that we have about the class of models that we deal with, there's a lot of work on robust rules. Some of the staff in San Francisco—John Williams and others—have worked hard on this. I find this work very useful, because they take models where we actually can compute optimal policy, and then ask what happens: What kind of simple rules could we use that would get us close to something that looks like the optimal policy? There's been a great deal of work on this. The simple rules they write down typically are of a Taylor rule variety with an output gap and a deviation of inflation from some target. One thing that comes out of those robust rules, though, is that the answer is not that the output gap doesn't matter. But in most of those exercises that I'm familiar with, the weight on the output gap in the Taylor rule tends to be pretty small. I think that's one of the things that is interesting about some of those rules. The important thing about those robust rules is that the weight on the deviation from inflation target gets very big, and the weight on the output gap is relatively small in many cases.

One of the helpful things that we could do is think about the class of robust rules and about how robust these rules are against the class of models that are on the table. That could help focus our discussion and give us, again, this robustness in our policy thinking that could be very helpful. So I'm very positive towards that line of research in the literature, because, as we can see here today, models are different, and they can give different outcomes. We need to be cautious about what we know and how precise we are and not put too much weight on any one factor at any one point in time—"diversify our portfolio," if you will. Again, my argument for lo these many months is to try to get our language to look more robust and a little less focused on single metrics.

I want to thank all of the Reserve Bank staff. They did a great job, and I think this has been a very useful discussion. Thank you, Mr. Chairman.

CHAIRMAN BERNANKE. Thank you. President Rosengren.

MR. ROSENGREN. I also want to thank each of the presenters for giving very good presentations. Over breakfast, as Jeff alluded to, President Plosser and I had, I thought, a very useful discussion about models and what was generating our results. I asked him, given where the output gap was, and given where at least some measures of marginal cost might be, how he was getting inflation actually rising. And his answer was, "Well, the driver is really inflation expectations."

I have one question for each of you. It will be quick. Let me posit my questions to each of you first, and then I will let you all speak. My first question is for Mike. You've highlighted the difficulty with coming up with the output gap, and I think it's well understood that there are a lot of ways to calculate the output gap, and there are estimation issues with the output gap. But when I look at forecasts of inflation—if I look at the Blue Chip, if I look at professional forecasters, if I look at the dispersion in surveys—I find that the modeling of inflation expectations by economists isn't much better than the modeling of output gaps. Gary Stern gave us the advice that you need a model to beat a model as he was leaving. So we're not very good at modeling expectations; it seems like we have much the same problem when modeling the output gap. I'd like you to speak to the alternative, which is, how do we do a good job of modeling expectations, or what more work needs to be done?

For Mark, my question is that, based on my understanding of at least some of the international literature, importers tend to price to the U.S. market. If you could just put your work in the context of that observation, I think that would be useful for me.

And for Jeff, in light of Mike's comments, and his paper, I would be interested in your views of the implications of the way you model inflation, given the alternative that Mike has laid out in his paper.

MR. DOTSEY. That's a really excellent question, which I'm going to answer in three parts. In the models that we're all looking at, expectations are rational. To the extent that that's not a good approximation for how people actually form expectations, then that's problematic for the models as well. People like Jim Bullard have worked on models of learning and other types of things, and a lot of those models probably can be incorporated to try to flesh out expectational issues, if we become uncomfortable with the assumption of rational expectations at high frequencies.

Expectations are a dicey thing for the Committee to base policy on, because often they can be somewhat sticky, as you allude to. If the Committee were to lose some of its credibility, often those expectations could look good, but you could have lost the game, and expectations are going to get out of hand. I think the late 1970s and then the disinflation of the 1980s was an example of that. The inflation sort of led the expectations—we had this big run-up in inflation, and expectations followed it. On the way down, I think expectations of inflation actually followed the Fed's moves as it was gaining credibility and probably made the disinflationary costs in actuality a lot worse. So I think you are right to point out those types of things, but, again, all I can do is say we've got these models on the table, and that's the best we can do. And you're right to question perhaps some of the assumptions underlying what is going on.

MR. WYNNE. On the question of the pricing to the U.S. market, we actually do consider this case. One of the contributions in our background paper is to push some of the existing literature forward by explicitly incorporating the so-called local currency pricing assumptions as opposed to the producer currency pricing assumption.

If you go back to exhibit 6 in our handout, that's what gives rise to these complicated additional terms in the Phillips curve expression to capture these deviations from the law of one price. If you don't have people pricing in dollars for the U.S. market, you're just going to have to worry about the domestic and foreign output gaps, or domestic and foreign real marginal costs. This is what makes it very tricky to test this idea that foreign influences matter, because you can also just write down a Phillips curve where all the foreign influences come in through a terms-of-trade-like term. But it's a gap—it's a deviation of the terms of trade from its frictionless level.

A lot of very subtle econometric issues come up then in trying to figure out why the terms-of-trade variable is in the Phillips curve expression. Is it to capture deviations from the law of one price, or is it some sort of a summary statistic for all foreign slack? I think it makes a big difference to the validity of the hypothesis. This was what motivated our final remark about why we really need to rethink some of the earlier econometric work, some of the good work that was done here at the Board of Governors, the work that the researchers at the BIS have done, and some of the earlier work we did on this question. However, these terms-of-trade variables look like some of the variables people have traditionally included in Phillips curve regressions. We know that oftentimes you're going to need to put in energy prices or import prices or food prices in your traditional Phillips curve to get the fit to work. And the theoretical framework we have laid out explains why these things may, in fact, matter. But a lot more work needs to be done before we could actually apply this to some of the policy issues Jeff and Mike have addressed in their presentations.

MR. FUHRER. Thanks for your question, Eric. I would take on board some of Michael's and coauthors' caveats about the use of statistical gaps. I think my approach would be somewhat similar to what the Chairman was saying in response to another question—we wouldn't take a univariate approach in gauging the state of the economy. We'd look to see what's going on with unemployment, and I'd say it's clearly elevated, and I don't see evidence in traditional measures of reallocation to suggest that anything extraordinary is going on there. Therefore, I would take on board that a good portion, maybe the majority, of the increase in unemployment is really reflective of slack resources. When I couple that with the observations on marginal cost, which are severely depressed, I think I have several measures that all are telling me roughly the same story. So in that regard, at least from the point of view that the gap or utilization is a driving variable, I would expect some downward pressure on inflation.

Now, as we suggested in the discussion around the table, inflation expectations might counterbalance that, but I would emphasize in that regard, at two levels, that what I said in my presentation is that the implication of the models is that the inflation expectation really implies a concern for future marginal cost and gaps, not just inflation expectations per se. That's at the pointy-headed rational expectations level. But let's take a step back and think, along the lines that President Narayana Kocherlakota was saying, about the importance of the microdata—

MR. KOCHERLAKOTA. Narayana Rao Kocherlakota. [Laughter]

MR. FUHRER. I'll get the middle name next time. [Laughter] The goal keeps increasing.

At the micro level, let's think about the story that motivates these kinds of models that we use, which at its base is not unreasonable, and that is that there are firms who are trying to set prices. What do they consider in trying to set prices? They think about their cost structure. That's where the marginal cost comes from. I would say that today the cost structure really is challenged. Wages are pressured to be quite low, and productivity appears to be fairly high. So from the cost side, that puts downward pressure. The other thing that they take into account is how much they can mark up over those costs. That's a factor of market power and current demand circumstances. And I would say, there again, the ability to mark up over their cost structure is not terrific. So you don't need the pointy-headed rational expectations model to tell you that the key determinants that fold into these models would suggest that, in current circumstances, the pressures on inflation, taking into account expectations and costs and gaps or whatever else, appear to be on the downside. That's the way I would answer that question.

Now, I did say, as President Plosser emphasized, that we need to have some humility when we approach this. And I think that to date we are starting to see perhaps the beginning of a puzzle that says, as Mike Dotsey suggested, that inflation maybe should have fallen more than these models have suggested. And I think we'll be looking at that carefully, because if it doesn't fall noticeably over the next year, we have some 'splaining to do. [Laughter] And that will require some additional thought. So thank you for the question, and that's what I would say.

CHAIRMAN BERNANKE. The Ricky Ricardo theory of economics. [Laughter] President Hoenig.

MR. HOENIG. Thank you. Just a short observation. This is, as others have said, very interesting in terms of inflation dynamics and output gaps. And I agree that we need to use models and work them and then apply our judgment to the situation.

But I also want to remind the Committee that we do need to begin to think differently in some ways. I can't help but recall that in 2003 Borio and White gave a paper at the Jackson Hole Symposium on issues around not so much bubbles but very strong expansion and the conditions we create that cause these cycles, if you will. It means that you can look at where interest rates are relative to at least an estimated long-term equilibrium rate and at how fast credit growth is moving in a particular period of time. If you reread that paper now, you will think they were on to something. While we need these output gaps, and so forth, the financial system is driving a lot of what's happening, and we need to bring that into the equation more directly. Maybe that's what you were referring to regarding the updates to the papers that you have been involved with.

There's more to it than the output gap, and I'm a little worried, because of that, about making inflation targeting your goal, because you can have a very stable inflation environment for a while and have a very volatile financial environment with the excesses that go on there. So I recommend that you all reread that paper. Thank you.

CHAIRMAN BERNANKE. Thank you for reminding us about that.

Any other comments? [No response.] If not, let me once again thank the staff for all your work and for your coordination, and it was a very enjoyable discussion. The next meeting is another two-day meeting, January 26 and 27. The meeting is adjourned. There is lunch available in the anteroom for those who can stay. Thank you.

END OF MEETING