Meeting of the Federal Open Market Committee on March 17–18, 2015

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, March 17, 2015, at 10:30 a.m. and continued on Wednesday, March 18, 2015, at 9:00 a.m. Those present were the following:

Janet L. Yellen, Chair
William C. Dudley, Vice Chairman
Lael Brainard
Charles L. Evans
Stanley Fischer
Jeffrey M. Lacker
Dennis P. Lockhart
Jerome H. Powell
Daniel K. Tarullo
John C. Williams

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

Narayana Kocherlakota, President of the Federal Reserve Bank of Minneapolis

Helen E. Holcomb and Blake Prichard, First Vice Presidents, Federal Reserve Banks of Dallas and Philadelphia, respectively

Thomas Laubach, Secretary and Economist
Matthew M. Luecke, Deputy Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Thomas C. Baxter, Deputy General Counsel
Steven B. Kamin, Economist
David W. Wilcox, Economist

David Altig, Thomas A. Connors, Michael P. Leahy, William R. Nelson, Glenn D. Rudebusch, Daniel G. Sullivan, William Wascher, and John A. Weinberg, Associate Economists

Simon Potter, Manager, System Open Market Account

Lorie K. Logan, Deputy Manager, System Open Market Account

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

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

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

William B. English, Senior Special Adviser to the Board, Office of Board Members, Board of Governors

Andrew Figura, David Reifschneider, and Stacey Tevlin, Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve, Special Adviser to the Chair, Office of Board Members, Board of Governors

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

David E. Lebow and Michael G. Palumbo, Senior Associate Directors, Division of Research and Statistics, Board of Governors

Michael T. Kiley, Senior Adviser, Division of Research and Statistics, and Senior Associate Director, Office of Financial Stability Policy and Research, Board of Governors

Ellen E. Meade and Joyce K. Zickler, Senior Advisers, Division of Monetary Affairs, Board of Governors

Fabio M. Natalucci[2] and Gretchen C. Weinbach,[1] Associate Directors, Division of Monetary Affairs, Board of Governors

Jane E. Ihrig and David López-Salido, Deputy Associate Directors, Division of Monetary Affairs, Board of Governors; John J. Stevens, Deputy Associate Director, Division of Research and Statistics, Board of Governors

Glenn Follette, Assistant Director, Division of Research and Statistics, Board of Governors; Elizabeth Klee, Assistant Director, Division of Monetary Affairs, Board of Governors

Penelope A. Beattie,[1] Assistant to the Secretary, Office of the Secretary, Board of Governors

[1] Attended the joint session of the Federal Open Market Committee and the Board of Governors.
[2] Attended the portion of the meeting following the joint session of the Federal Open Market Committee and the Board of Governors.

Dana L. Burnett and Don Kim, Section Chiefs, Division of Monetary Affairs, Board of Governors

Katie Ross,[1] Manager, Office of the Secretary, Board of Governors

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

Zeynep Senyuz, Economist, Division of Monetary Affairs, Board of Governors

Kenneth C. Montgomery, First Vice President, Federal Reserve Bank of Boston

Ron Feldman, Executive Vice President, Federal Reserve Bank of Minneapolis

Michael Dotsey, Craig S. Hakkio, Evan F. Koenig, and Paolo A. Pesenti, Senior Vice Presidents, Federal Reserve Banks of Philadelphia, Kansas City, Dallas, and New York, respectively

David Andolfatto, Todd E. Clark, Antoine Martin, Joe Peek, and Douglas Tillett, Vice Presidents, Federal Reserve Banks of St. Louis, Cleveland, New York, Boston, and Chicago, respectively

Transcript of the Federal Open Market Committee Meeting on March 17–18, 2015

March 17 Session

CHAIR YELLEN. Good morning, everybody. As you know, we had a farewell luncheon for President Plosser at the January meeting. And in a couple of hours, we will also have a chance to say farewell to President Fisher at a luncheon. In light of those departures, I would like to welcome Helen Holcomb back to the table. She represented the Federal Reserve Bank of Dallas here before President Fisher took office and will be representing the Dallas Bank again today. I would also like to welcome Blake Prichard to the table, representing the Federal Reserve Bank of Philadelphia. He is serving as acting president of the Philadelphia Bank until Patrick Harker takes office on July 1.

Before we begin today's agenda, I want to briefly update you about developments that relate to press briefings. At recent meetings, we have discussed the fact that it is important for the Committee not to feel constrained from taking action whenever we deem appropriate, at any meeting, regardless of whether there is a postmeeting press conference scheduled. And a number of you have suggested to me that I schedule press conferences after every meeting. Now, a decision to have press conferences at every meeting is likely to be irreversible. It is something I have, therefore, carefully considered. For now, at least, I think my decision is that it would be best not to schedule press conferences after every meeting.

Let me just say that, by way of explanation, the time that is required for me and all of our senior staff to prepare for these press conferences is truly nontrivial. In part, that is because preparations involve being up-to-date not only on matters pertaining to monetary policy and the economy, but also on all matters pertaining to Federal Reserve-related issues. And all of that preparation occurs at exactly the same time when all of us are preparing for these meetings.

As I reflect on it—and, again, this is just a decision for now, so I am not saying this can't be revisited—it seems to me that when we are in a more normal mode for conducting monetary policy, and I hope that time is not too far off, and the economic environment is more normal, every-meeting press conferences, especially after meetings for which there are no forecast updates, are really not likely to have much focus on monetary policy decisions and the economy. What I believe will happen is they will become opportunities for the media to explore a host of nonmonetary policy issues, which ultimately could be a distraction rather than a help to us. That would all occur on meeting days. But, at the same time, though I am not inclined now to go to press conferences every meeting, I do think it is important for us to feel—and also to convince the public and market participants—that we are not constrained from taking decisions at meetings for which there is not a subsequent press conference, so that market expectations of our future actions can be appropriately responsive to incoming data.

As I have mentioned in the past, we have long had the capability to conduct press briefings by telephone on very short notice. Chairman Bernanke did so a number of times during the financial crisis. So the plan I would like to propose is that we remind the public, the markets, and the press that we have that capability and would indeed use it when necessary. And, to firm up that expectation, late on the second day of our meeting in April, the Board's Public Affairs office plans to conduct a test of our system for media conference calls. We will permit news organizations to report afterward that we conducted this test, and we will state that the reason for the test is to refresh news organizations' familiarity with how the system works, so that we can use it, if necessary, on meeting days when no press conference is scheduled. That is currently the plan, and I welcome any input that any of you would like to offer on it. But that is what we thought, for the moment.

Let's now turn to the agenda. The first two items will be considered in a joint meeting with the Board of Governors, so we need a Board vote to close that meeting. Do I have a motion?

MR. FISCHER. So moved, Madam Chair.

CHAIR YELLEN. Thank you. Without objection. I am going to call on Simon Potter to begin the Desk report.

MR. POTTER.[1] Thank you, Madam Chair. We will be splitting the Desk briefing in two parts. I will talk about financial market developments, then Lorie will talk about Desk operations.

Over the intermeeting period, the backdrop of monetary policy easing overseas, relative stability in oil prices, and some positive global economic data reportedly contributed to a reduction in perceived downside global growth risks.

Longer-dated forward interest rates among major developed economies diverged over the period, as shown in the top-left panel of your first exhibit. The trend of declining longer-run nominal interest rates since the start of 2014 partially retraced itself in the United States and United Kingdom, as some incoming economic data, most notably employment reports, reinforced expectations that the Federal Reserve and Bank of England will begin normalizing policy within the next year.

The top-right panel shows a summation of daily changes in U.S. yields over the period, bucketed into a few categories based on market commentary. Increases in both short- and longer-dated yields occurred on days with stronger-than-expected U.S. employment reports and higher-than-expected inflation data, among other factors. These influences in combination more than offset the declines in rates that followed the start of ECB purchases and Federal Reserve communications including the January statement, minutes, and the Chair's testimony before the Congress. These Federal Reserve communications were generally interpreted as slightly more accommodative than expected due to discussion of the balance of risks around the start of normalization and the outlook for persistently low inflation. However, not all market participants interpreted Federal Reserve commentary as more accommodative than expected.

Many market participants expect policy normalization to begin in the second or third quarter of 2015. This is shown in the middle-left panel, which indicates that the average probability assigned to liftoff occurring in June or September increased modestly from the January surveys. This panel also shows that the distribution of individual beliefs about liftoff timing is dispersed, consistent with some of the

[1] The materials used by Mr. Potter and Ms. Logan are appended to this transcript (appendix 1).

differing interpretations of Federal Reserve communications over the intermeeting period to which I just alluded.

Desk and private surveys also indicate that the vast majority of respondents anticipate the Committee will drop the "patient" language from the statement at this meeting, and the Desk surveys suggest this would result in only a small increase in the average probability assigned to a June liftoff.

Desk survey respondents expect liftoff to occur against a backdrop of very subdued realized inflation. The median response for the mostly likely level of 12-month headline PCE inflation at liftoff declined to 0.4 percent in the March survey, as shown in the first column of the middle-right panel. For 12-month core PCE inflation at liftoff, the median response was 1.4 percent, with an interquartile range of 1.3 to 1.5 percent. Although the median point forecast for PCE inflation 1 to 2 years after liftoff remains 2 percent, shown in the second column, the odds that both dealers and buy-side respondents assign to inflation over that horizon remaining below 1.75 percent has increased substantially over recent months. This is shown in the final two columns.

The Board's measure of five-year, five-year-forward inflation compensation moved up slightly, on net, as shown in the bottom-left panel. However, this measure remains far below its average level since 2003. Currently, U.S. forward inflation compensation appears to be surprisingly linked to changes in the price of oil, as can be seen by comparing the trajectories in the bottom-left panel.

The U.S. dollar continued to broadly appreciate against both major and emerging market currencies over the intermeeting period, with the DXY dollar index higher by 6.5 percent and at its strongest level since 2002. Contributing to this move was a 7.5 percent weakening of the euro versus the U.S. dollar, shown in the bottom-right panel, which came alongside a 27 basis point widening of the U.S.–German 2-year yield spread over the period.

Since the announcement of the public sector asset purchase program at the January ECB meeting, European equities have increased by about 12 percent, as shown in the top-left panel of your next exhibit. In contrast, the S&P 500 is little changed, on net, over the same period.

Euro-area corporate credit spreads have also tightened since January, and there has been a substantial narrowing of peripheral sovereign spreads to Germany. The announcement of ECB sovereign debt purchases reportedly contributed to stable peripheral sovereign spreads amid Greek financial assistance negotiations. Steve Kamin will discuss the Greek situation in his briefing.

The ECB announced at its recent meeting that purchases would be restricted to bonds with yields above the deposit facility rate, which currently stands at negative 20 basis points. This constraint currently renders 2- and 3-year bunds ineligible and will force the Bundesbank to extend the duration of its purchases unless rates on these securities increase above the deposit facility rate.

Following the commencement of purchases last Monday, the German yield curve flattened substantially, as shown in the top-right panel. German yields are now negative out to 7 years, the 10-year German-U.S. interest rate differential is at its widest level in at least 25 years, and the German 30-year yield trades at similar levels to that of a U.S. 2-year note.

The negative interest rate environment in Europe has become more pervasive and pronounced, as shown in the middle-left panel. Over the intermeeting period, the Danish National Bank cut its deposit rate to negative 75 basis points to defend its euro currency peg, while the Riksbank moved its main policy rate to negative 10 basis points and initiated a small asset purchase program. There has been some pass-through by banks of negative rates to large corporate depositors but less pass-through to retail-level customers. Contacts have not reported major shifts in market structure, investor behavior, or market functioning due to negative rates.

It is possible that more sovereign assets in the euro area will trade at negative yields as the ECB asset purchase program continues. The ECB's constraint that purchases must be of assets with yields above negative 20 basis points might interact with additional constraints related to the capital key, issue, and issuer share to skew purchases further out on the yield curve, placing additional substantial downward pressure on yields. This feedback loop might be amplified if, as many market participants believe, holders of longer-dated debt are somewhat price-insensitive because of investment mandates or regulations. Thus, some have noted concerns about the potential for a notable deterioration in euro-area sovereign market functioning.

Large-scale asset purchases are having a pronounced effect on the JGB market. As shown in the middle-right panel, yields and measures of implied volatility rose sharply in mid-January. The catalyst for this is unclear, although the moves disturbed fragile Japanese rates market dynamics that are dominated by BOJ purchase operations, leading to some paring back of dealer marketmaking activity and several poorly received JGB auctions. Despite their adverse effect on JGB market functioning, large-scale asset purchases in Japan still appear to be having substantial effects on risk assets and the exchange rate as portfolio rebalancing continues.

Volatility and market functioning have also been in focus in FX markets, particularly amid rapid dollar appreciation. Some are concerned that the next sharp currency move may be in China. The official dollar-RMB central parity rate has slowly moved higher over recent months, and the onshore dollar-RMB rate has traded toward the top of its trading band, shown in the bottom-left panel.

As shown in the bottom-right panel, implied volatility in a number of markets has increased, and there have been some pronounced spikes in volatility. As was detailed in the October 15 memo recently sent to the Committee, the nature of Treasury market liquidity has changed over recent years, reflecting an increased role of algorithmic and high-frequency trading activity and decreased shock-absorbing capacity of dealers. Some market participants have noted that recent spikes in volatility, particularly the intensity of intraday moves, will produce changes in risk management that could further limit capital deployed to marketmaking in volatile markets. These changes in structure are common across a range of markets and might lead to more frequent sharp price moves. While market participants often point out these risks, they also acknowledge that U.S. financial firms are stronger and the financial system is better positioned to handle such bursts of volatility than prior to the financial crisis, consistent with the conclusions from recent QS reports.

That completes my report. We would be happy to take questions.

CHAIR YELLEN. Questions? President Kocherlakota.

MR. KOCHERLAKOTA. Yes. Actually, it is more of a comment than a question. On figure 5, it is true that the inflation compensation and oil prices have moved surprisingly together. But I think it is also worth noting that, at least to my eyes, the timing of the turndown in inflation compensation is not aligned precisely, as far as I can tell.

MR. POTTER. In the past week, that is true. The TIPS breakeven inflation went down the first two days of the week. Most of the action in oil prices was toward the end of the week, when there was an announcement of record production in the United States in February.

CHAIR YELLEN. Other questions for Simon? President Evans.

MR. EVANS. In table 4, exhibit 1, you have expectations for inflation at liftoff, and it looks like more people in the markets are thinking that we will lift off when the two-year-ahead inflation outlook is under 1¾ percent. It is a little out of order, but I was looking at the SEP tables, and I noticed that there is an appendix to table 2 that shows our responses on the timing of our liftoff and the economic conditions in the quarter that we do that. And I was a little surprised by the very low core PCE inflation numbers that everybody has in there. I see 1.1, 1.2, 1.3 percent. Simon, do you think that the market participants would find this piece of information to be particularly noteworthy when contrasted with what they have priced in, or how they are thinking about it?

MR. POTTER. If the Committee released details on what individual participants thought economic conditions will be at liftoff, it would be noteworthy for a number of reasons.

MR. EVANS. Yes. In terms of the informational content.

MR. POTTER. I do think that the core inflation numbers you quoted to me sounded like they were a little bit below the lower quartile of 1.3 percent that we got from our responses. So I would imagine that, as the inflation data came along, the information would have some effect on expectations of the timing of liftoff. If you did not see firmer core inflation data but saw data that is about the same as what we are currently receiving, people might view that as suggesting that liftoff would still be quite likely.

MR. EVANS. Another question I had in looking at your table is whether there is any way for you to get additional information on what the survey respondents are probably thinking about our attitudes toward hitting our inflation objective of 2 percent?

MR. POTTER. Market participants freely give you a lot of viewpoints on how the Federal Reserve is doing. And some of them do express some skepticism about the 2 percent inflation goal, if that answers your question.

MR. EVANS. Well, I guess I am wondering about the combination of these two pieces of information.

MR. POTTER. When we just ask them for the point estimate, for most of the responses, the median response is 2 percent. You see a difference between the sell side, the dealers, who are firmer in that belief than the buy side. A lot of what you have seen over the past few months is people on the buy side who are skeptical about how the 2 percent inflation goal might affect liftoff. And you saw that reflected last time in the responses from the buy side to the distribution question. The dealers did catch up with it this time. I was actually surprised with the data, as I thought those probabilities were most likely to have gone down, in response to the inflation data we saw over the intermeeting period.

MR. EVANS. Thank you.

CHAIR YELLEN. Further questions for Simon? [No response] Okay. I'm going to turn to Lorie to continue the briefing.

MS. LOGAN.[2] I'll discuss testing of tools for normalizing policy and some longer-term changes in money markets and conclude with options for a resolution for quarter-end term RRP testing.

Before turning to testing, I want to note our current projections for MBS reinvestments, shown in the top-left panel of your third exhibit. We estimate that MBS reinvestments in 2015 will total about $330 billion, roughly $70 billion lower than our estimate at the January meeting due to the increase in Treasury yields but still notably higher than anticipated in December. Reinvestment purchase operations continue to go smoothly, and MBS liquidity remains stable.

Over the period, the Federal Reserve executed three overlapping 21-day TDF operations at 28 basis points with same-day settlement and a $20 billion counterparty cap at each operation. As shown in the top-right panel, the total amount of term deposits reached $404 billion, roughly the same size as the largest operation in the prior testing series, conducted at a slightly higher rate of 30 basis points. The two largest participants accounted for $170 billion. One of these firms, which participated under two separate legal entities and placed a total of $110 billion, indicated that it would have committed roughly $40 billion more if participation was not capped. The other firm suggested it did not have additional demand for TDFs.

As expected, the operations did not appear to put upward pressure on short-term rates, and counterparties suggested that, in the current environment, reserve draining from term tools would need to be much larger to directly affect market rates.

As outlined in communications in advance of the meeting, the staff has been making progress on a revision to the methodology for the payment of interest on reserves that should help tighten the linkage between the level of the IOER rate on any given day and the level of the effective federal funds rate on that day.

[2] The materials used by Ms. Logan are appended to this transcript (appendixes 1 and 2).

Programming efforts are proceeding, and the staff expects to publish a *Federal Register* notice describing the proposed changes soon after this meeting.

The staff also continues to conduct RRP test operations. Average total daily take-up in Federal Reserve RRP operations over the intermeeting period, shown in the middle-left panel, was about $125 billion, similar to recent months. With the exception of some small-value test trades, the ON RRP operations during the period did not include the most recent wave of expanded RRP counterparties, which began trading yesterday. In that operation, the new counterparties represented less than $4 billion of the $112 billion allotted.

As shown in the middle-right panel, the Desk conducted four one-week term operations from mid-February through early March. The amount of bids submitted in each operation was relatively stable, ranging between about $70 billion and $90 billion, and each operation stopped out at 6 basis points.

The staff estimates that the majority of demand for term RRPs represented either substitution from the ON RRP—the light blue bars in the bottom-left panel—or rollover of funds allocated to previous term RRP operations, the dark blue bars. Only about 15 percent of take-up appears to be new funds. Given that the stop-out rate for the term operations was just 1 basis point higher than the ON RRP rate, it appears that the additional return required to move $50 billion from overnight into term RRPs for one week was relatively small. Consistent with the idea that take-up at term operations primarily represented substitution from ON RRP operations, market participants did not attribute movements in market rates to these term test operations.

Overall, however, the ON RRP continued to provide a soft floor on money market rates. As shown in the light blue line in the bottom-right panel, with the exception of some increased volatility around month-end dates, the effective federal funds rate remained near the levels observed since mid-December, when the Desk concluded the testing series that involved changes in the ON RRP rate.

However, secured rates were somewhat soft over parts of the intermeeting period, with some segments of the repo market at times trading below the ON RRP rate. For example, as shown in the dark blue line in the bottom-right panel, after removing GCF repo transactions—which are a subset of triparty repo that primarily serve as an interdealer market—the volume-weighted average rate of remaining triparty trades briefly dipped below the ON RRP rate. Market participants attributed the broader dynamics in secured rates, in part, to shifts in GSE cash management needs and decreases in Treasury bill supply associated with the Treasury's shift in short-term financing needs around the April tax date, as well as month-end pressures.

Turning to your final exhibit, I wanted to highlight some longer-term developments in money markets. These developments, which market participants indicate partly reflect dealers' more conservative risk management practices since the crisis as well as ongoing regulatory changes, may affect the constellation of money market rates and the tools for monetary policy implementation.

For example, some dealers with large, stable repo funding bases have demanded increased compensation to intermediate between money funds or other lenders in the triparty repo market and the smaller or less creditworthy dealers that seek to borrow funds in the GCF market. This can be seen in the widening spread between the volume-weighted average rates in the GCF market and the broader triparty market, excluding GCF, shown in the top-left panel.

There is also some indication that dealers are somewhat less willing to employ their balance sheets for other types of relatively low-margin intermediation activities. As shown in the top-right panel, dealers have decreased the total size of their overnight repo books.

Meanwhile, the stock of Treasury bills, a close substitute to repos, shown in the light blue line, has also declined because of a combination of an improved fiscal outlook and an effort to increase the weighted-average maturity of Treasury debt outstanding. Combined, these shifts have decreased opportunities for money market funds to invest cash in high-quality instruments.

At the same time, regulatory changes are increasing the demand for high-quality money market instruments. Over the intermeeting period, Fidelity announced that it would convert three of its prime money market funds, including one of the largest prime retail funds in assets under management, into government funds in response to the 2014 SEC reforms. Combined, these three funds have about $130 billion in assets under management. Additionally, J.P. Morgan announced its intention to reduce certain non-operating wholesale deposits by up to $100 billion, either by introducing fees on certain institutional clients' deposits or by asking clients to move deposits into other products, such as money funds. Market participants anticipate that other firms are likely to take similar actions as J.P. Morgan and Fidelity, further increasing demand for high-quality money market instruments.

These changes reflect, at least in part, actions that firms are taking to align their business models with upcoming regulatory changes intended to increase the safety of money market funds and decrease banks' and broker-dealers' reliance on short-term funding. These are, of course, important steps to improve the resiliency of the financial system. They may, however, increase segmentation in money markets and, given the high level of reserves in the system, put some downward pressure on some money market rates. This could in turn increase demand for Fed RRPs or similar instruments during policy normalization.

For example, many of the non-operating deposits that J.P. Morgan announced it will try to reduce are likely held by foreign official accounts. As the Federal Reserve's balance sheet increased, we have seen and allowed foreign central banks to place additional funds in the foreign RP pool, as shown in the middle-left panel. As you may recall, this is a service offered to foreign central banks and international organizations in which funds in their accounts at the end of the day are used for a repo transaction, with SOMA securities as collateral. Recently we have experienced increased demand for storing liquidity by investing cash in the foreign RP pool. One large customer indicated a desire to increase their dollar reserves liquidity to prepare for possible instability as the FOMC raises rates.

Despite the announcements emphasizing a shifting landscape in money markets and the discussion of the possibility of an elevated ON RRP cap at liftoff in the January minutes, market participants have not materially increased their expectations for the size of the ON RRP facility during or after liftoff. As shown in the middle-right panel, the median respondent to the most recent Desk surveys expects that usage of ON RRP at liftoff will be \$300 billion and will decline to \$250 billion three years after liftoff, broadly similar to expectations in recent surveys. The range between the 10th percentile and 90th percentile of respondents' views, shown in the red bars in the bottom-left panel, is also largely unchanged from the January survey. The distribution of views remains skewed toward higher usage.

Turning to expectations for total RRP usage over the March quarter-end, market participants broadly expect that the combined capacity of \$500 billion—inclusive of both term and overnight operations—will be sufficient to support a soft floor on money market rates above the ON RRP rate leading into and on March 31. The first of two planned term RRP operations covering the March quarter-end will be held Thursday.

Lastly, the Committee may wish to consider authorizing term tests over future quarter-ends. If the Committee envisions using term RRPs as part of a strategy to limit the size of the ON RRP facility at liftoff or potentially at some other point during normalization, continued testing may be useful, particularly for operational readiness. Even if the Committee plans to provide elevated capacity in the ON RRP facility—one that allows sufficient headroom, even at quarter-end—putting the term RRP test operations in place may also be helpful, particularly if liftoff occurs around a quarter-end date. This is because, in the absence of public information about the Committee's intentions and implementation, there is potential for money market rates to trade soft to the federal funds target range leading up to the quarter-end.

For these reasons, the staff has outlined two options for authorizing such testing if the Committee chooses to do so. As discussed in a memo distributed prior to the meeting and outlined in the bottom-right panel, the first option is for the FOMC to approve a resolution that authorizes term RRP test operations for the June, September, and December 2015 quarter-ends. This option is substantially similar to the resolution adopted for the 2014 year-end term RRP tests and authorizes, but does not obligate, the Federal Reserve to conduct those operations. A resolution of this kind would more closely align the authorization for term RRP testing with that governing testing of ON RRP operations and might reduce the probability that market participants mistakenly interpret future decisions about testing term RRPs over quarter-end as containing information about the likelihood of liftoff. Alternatively, the Committee could continue its current practice of authorizing term RRP test operations each quarter, each time using a resolution approved at an FOMC meeting well ahead of quarter-end. Draft resolutions regarding both approaches are provided in a separate handout in the event that the Committee decides to proceed with authorizing further quarter-end term tests. Thank you, Madam Chair. That concludes my prepared remarks.

CHAIR YELLEN. Thank you. Are there questions? President Lacker.

MR. LACKER. I just have a comment. I have argued against testing term RRPs. I was outvoted at the previous meeting, and we are testing at the end of March. It is not the end of March. We haven't done those tests. Presumably, tests are designed to provide information to be useful in future decisions. I am wondering why we are deciding this now rather than waiting until after the March meeting. We would have as much lead time until the June quarter-end as we provided when we decided in January to test at the end of March.

MS. LOGAN. Doing it now in advance versus April, which would be more in line with the approach we have been using, allows it to be viewed as a technical adjustment and removes it from market discussions about the timing of liftoff. It has some technical benefits. It lines up with the overnight RRP authorization that we already have and still provides us flexibility to decide whether we are going to use it or not. I think those are the benefits of doing it now.

MR. LACKER. So you are appealing to some technical considerations?

MS. LOGAN. For it to be perceived as a technical adjustment.

MR. LACKER. No one thinks we are going to raise rates in April. So, doing it in April with the same language we used in January wouldn't be some tipping of our hands. We didn't tip our hands in January.

MR. POTTER. President Lacker, we went with $200 billion in January. This one has $300 billion, so that would be a small change. I agree with you completely. We have been running testing operations for a long time now, and no one has taken any signal from those. You could argue the reason they haven't taken a signal is because forward guidance has been in place. We are now going to enter a period, it appears, in which we won't have such forward guidance in place. So, just from the "do no harm" viewpoint, if you view this as technical, we thought it would be nice to get it out of the way now.

I do notice that I think there is a slight difference between what's in the exhibit and the ordering of the options that you have in front of you. If you just flip them in your head—option 1 is option 2, and option 2 is option 1—that will simplify life for you.

MR. LACKER. I'm having trouble keeping up with your technical factors here.

CHAIR YELLEN. President Rosengren.

MR. ROSENGREN. I am going to change the topic, if that is okay. First I have a comment, then a question. The comment is that it's a little ironic that the gates and fees on money market funds had the probably unintended consequence, from the SEC's perspective, of encouraging some of the fund families to eliminate the prime money market fund relative to the Treasuries, a development that actually should help financial stability. So it is somewhat ironic that that is the way some of the funds are actually reading that proposal.

The question is, to the extent that the Treasury-only money market funds are becoming more important—and that is going to be phased in over this period, so it is not an immediate change, for example, at Fidelity—what do we think the money market fund behavior will be if they think that we might raise rates in June? What does that imply for money market funds using overnight RRPs rather than holding longer-term Treasury securities? As we move into periods in which we don't know whether we will be raising rates—say, in June and September—would we expect the money market funds to substantially increase their use of overnight RRPs just because they don't want to be caught with a potential capital loss if they were holding longer term? What does that mean for use of the overnight RRP facility? Are we surveying the Treasury-only money market funds on a regular basis to get a sense of the behavioral changes that might be expected? And, to the extent that management has changed for some of these, it becomes probably more important to sample a little more deeply than we might have in the past.

MS. LOGAN. The staff is talking with the money funds on a regular basis, almost daily, related to what they are doing in the operations that day or what they are planning to do over the next several weeks. We haven't heard from the money funds any discussion that the anticipation of raising rates is moving their expectations for usage of the overnight RRP. Most of the commentary we hear from the money funds is that they are trying to maintain their relationships with private counterparties, given the constraints that they are seeing from some of those private counterparties, and that they are only coming to the overnight RRP when they are losing that balance sheet. And they are even willing to give up a couple of basis points to maintain those counterparty relationships. So we haven't heard that as being front and center in the discussions.

MR. POTTER. You saw a quite large move in short rates over the intermeeting period, and we didn't see any change in behavior of the overnight RRP.

MS. LOGAN. As long as those private-sector rates are still available for them and are above the overnight RRP or close to it—even slightly below—I think they would stay with the private-sector counterparties.

MR. ROSENGREN. Just a quick follow-up. We're not into the three-month window yet for the end of June, but I would think the behavior might change as we get closer to a date at which, potentially, you're going to be trading off the uncertainty regardng what we're going to be doing with whether you should shorten up the maturity that could possibly result in a big increase at the end of June with whatever the reverse repo rate would be.

CHAIR YELLEN. Further comments or questions? Governor Powell.

MR. POWELL. I think I would favor authorizing quarter-end use of repos now for the whole year, but I guess the question is, if later on we decide to lift the overnight repo cap at quarter-end or for a period after liftoff, then that would play into the decision—do you see what I mean? We won't need both if we lift the cap because, in all likelihood, we're going to be lifting off right before quarter-end.

MS. LOGAN. I tried to outline that authorizing doesn't obligate you to actually conduct the operations.

MR. POWELL. Right.

MS. LOGAN. And I think you would, after you lift off, see what the conditions are to determine whether to actually conduct the term, and what the size should be, based on what you're seeing in market rates and behavior.

CHAIR YELLEN. President Kocherlakota.

MR. KOCHERLAKOTA. Yes, thank you, Madam Chair. I'll follow up on Governor Powell's comment. At least for my own thinking about this, it might be useful to defer this decision until after we've had the discussion on normalization tools and getting a perspective on what we want to do with the cap.

CHAIR YELLEN. Vice Chairman.

VICE CHAIRMAN DUDLEY. I think it is actually even a little bit more complex than that because you could have no cap for a short period and then go to a cap, and you'd still want term RRP to be supplementary to that cap. I think it's fairly nuanced.

CHAIR YELLEN. Governor Brainard.

MS. BRAINARD. I do think these two conversations are completely interrelated, and it seems a little strange to be considering the term RRPs absent the broader views about the overnight RRP.

CHAIR YELLEN. Okay. There's no reason we can't come back to this at the end of that discussion. I guess there's no explicit question that's been posed about that, but maybe some of you will refer to it in your own discussions. And we can certainly come back and vote on this at the end of that discussion. Other questions or comments? [No response] Okay. I do need a vote to ratify domestic open market operations. Is there a motion?

VICE CHAIRMAN DUDLEY. So moved.

CHAIR YELLEN. Without objection. Thanks. We're going to move along now to our discussion of normalization tools, and Jane Ihrig is going to start us off.

> MS. IHRIG.[3] Thank you, Madam Chair. Let me start by noting that at your previous meeting, most participants agreed that it would be useful at coming meetings to discuss and communicate additional information about some operational details of your policy implementation plans. With this in mind, the staff memo titled "More Steps toward Finalizing the FOMC's Operational Preparations for Liftoff" provided some possible language in bullet point form to include in the March minutes; these bullets were revised in light of your earlier comments. At the end of the go-round that will follow our briefing, the Chair will ask whether you agree to augment the Committee's Policy Normalization Principles and Plans by providing these additional operational details in the minutes for this meeting; for reference, the bullet points are attached at the end of this handout.
>
> Two other issues that were covered in the memos related to the capacity of the ON RRP facility. I will spend some time discussing options for setting the initial aggregate capacity of the ON RRP facility, and then Antoine will review options for reducing capacity during the normalization process. Let me say up front that the appropriate amount of capacity needed at liftoff is uncertain for a couple of reasons. First, your calculation of initial capacity needs to account for expected take-up around liftoff and also allow for additional headroom, both of which are hard to gauge. In addition, although we have some sense of these amounts from the test operations that we have been conducting for some time, there is no guarantee that our testing

[3] The materials used by Ms. Ihrig and Mr. Martin are appended to this transcript (appendix 3).

experience provides an accurate reading on potential ON RRP usage once you move the policy rate above the zero lower bound.

Having said this, the top-left panel of your exhibit presents the two options from the staff memo for setting the initial aggregate capacity of the ON RRP facility for your consideration. The first option is to set a temporarily elevated initial cap. Your preferred setting of this cap might depend on your willingness to use term RRPs at quarter-ends. The staff suggested, for illustrative purposes, an ON RRP cap of $800 billion. This would be equivalent to double the take-up of both term and ON RRPs that we saw at year-end 2014. It would also be more than 3½ times the largest non-quarter-end take-up that we've had to date. By picking this much larger cap than we've had in testing and making clear that this initial setting is intended to be temporary, you would send a message that you are committed to a successful liftoff, and, at the same time, by limiting the facility's size, you would say you're also sensitive to the financial stability and footprint concerns that you have noted in previous discussions.

Of course, there is always a chance that $800 billion, or another nominal amount chosen, could turn out to be insufficient for interest rate control. Indeed, although as Lorie mentioned, the majority of respondents to the Desk's surveys expect moderate ON RRP take-up immediately after liftoff, a few market participants surveyed did anticipate that demand will be greater than $800 billion. If that were the case and federal funds traded at rates persistently below the target range, or other money market rates did not firm as much as the Committee desired at liftoff because the cap was regularly being hit or market participants perceived insufficient headroom at the facility, you could subsequently increase the cap size.

For policymakers that are concerned about liftoff proceeding smoothly, however, right from the start, this scenario might be unsettling, and they might prefer option 2. Under this option, the FOMC would suspend the aggregate cap for a short period but announce that it would establish a cap at the end of that initial brief period; the cap would be one that reflected the observed effects and take-up of ON RRPs after liftoff. Assuming you would retain a per-counterparty bid limit, a temporary suspension of the aggregate cap would not amount to offering ON RRPs at full allotment, but would nonetheless provide substantial ON RRP capacity to start.

As noted to the right, you have many choices for how to move forward with communicating about your initial setting of capacity. The bullets for inclusion in the minutes of this meeting start this process by reporting that ON RRP capacity at liftoff will be "temporarily elevated." Over time, you could decide on and announce the actual amount of initial capacity you intend to provide, either ahead of liftoff or at liftoff. Early communication could provide market participants with further clarity about your liftoff strategy, mitigating any remaining uncertainty about how much RRP capacity will exist around the time of liftoff. However, deferring a decision until liftoff would enable you to continue to evaluate financial market developments as they evolve in the meantime. Antoine will now continue our presentation.

MR. MARTIN. Thanks, Jane. In my remarks, I will discuss options available to policymakers to lower the ON RRP cap, as presented in the memo titled "Lowering the ON RRP Facility Cap after Liftoff." At this January's FOMC meeting, most participants indicated that a temporarily elevated ON RRP cap would be appropriate to support monetary policy implementation at the time of liftoff. At the same time, a number of participants emphasized that the Committee should develop plans to ensure that the ON RRP facility is temporary and that it can be phased out once it is no longer needed to help control the federal funds rate. Notably, some policymakers may be uncomfortable with a large Federal Reserve footprint in money markets and may also be concerned that an ON RRP facility with high excess capacity could increase financial-stability risks arising from disruptive surges.

In the long run, as the size of the balance sheet normalizes and the level of reserve balances falls, the use of the ON RRP facility could be expected to wane. This process would take several years, as shown by the black line in the lower-left panel, which corresponds to the January Tealbook, Book B baseline scenario. Specifically, once the aggregate level of reserve balances is reduced to its scarcity level, perhaps at about \$500 billion, banks' demand for reserves would likely lead them to bid regularly for federal funds. An ON RRP offering rate at the bottom of the federal funds target range would become relatively unattractive and use of the ON RRP facility would be expected to diminish. This process would make elimination of ON RRPs straightforward.

Soon after liftoff, perhaps the most likely outcome is that ON RRP usage will remain well below the elevated cap. Indeed, as Lorie noted, the median respondent to the most recent Desk surveys expects that usage of ON RRP at liftoff will be \$300 billion and will decline to \$250 billion three years after liftoff, broadly similar with recent surveys. If usage remains well below the elevated cap, that cap could be reduced with likely little effect on money market rates, so long as the facility's headroom remains sufficient. Such a buffer might be on the order of \$100 billion to \$200 billion and could potentially change over time to accommodate seasonal or other variation in take-up.

One potential complication with reducing the cap relatively quickly after liftoff is that underlying demand for ON RRPs might subsequently increase. For example, some regulatory reforms may lead to greater use of ON RRPs over time. The potential for rising demand could be accommodated in several ways to maintain adequate interest rate control. For example, policymakers could wait longer after liftoff to reduce the cap, could lower the cap but be prepared to raise it if increased demand materializes, or could institute a cap that is responsive to demand.

In another scenario, rates remain well controlled and demand for ON RRPs could remain persistently high. This is the more interesting scenario. If usage is high, the ON RRP facility would likely be playing an important role in supporting rates, so the efficacy for interest rate control of elevated ON RRP usage would need to be weighed carefully against its costs. In particular, substantial use of other supplementary tools may be needed to provide sufficient rate support while lowering the ON RRP cap. The potential costs of these tools would likely rise if they are heavily relied upon.

The Committee has several options at its disposal to encourage shifts in the composition of the Federal Reserve's liabilities away from ON RRPs. An advantage of these options is that they could be implemented fairly rapidly and influence money market rates quickly. The simplest option to reduce ON RRP usage is to set a wider spread between the IOER and ON RRP rates by raising the IOER rate. However, the strength of the upward pull due to the IOER rate is unclear, so there is uncertainty about how much this rate would have to be raised; the increase might have to be substantial. Another option would be to substitute term RRPs for ON RRPs. While term RRPs could help reduce the Federal Reserve's footprint in overnight markets, a shift from ON RRPs to term RRPs likely would not reduce the overall footprint in short-term funding markets, and may even expand it if term operations were sufficiently attractive. Finally, the Committee could use both term RRPs and the TDF to broaden the arbitrage opportunities that are created by IOER and ON RRPs and to attempt to drain enough reserves to create scarcity. Although term tools are unlikely to contribute much to reserve scarcity unless they are used in very substantial sizes, these tools could hasten the reduction in reserve balances to allow the ON RRP facility to be wound down. For example, the blue dashed line illustrates the effect of \$1.5 trillion in draining tools on the baseline scenario mentioned above. With this strategy, reserve balances drop to \$500 billion around mid-2017, nearly three years earlier than in the baseline scenario. However, substantial use of term tools could increase the Federal Reserve's involvement in a range of term markets and would likely raise the pecuniary costs of monetary policy implementation.

Should circumstances after liftoff change the Committee's views regarding the costs and benefits of asset sales, it could also consider using such sales to reduce the size of the balance sheet directly. Asset sales may also be effective in reducing ON RRP usage.

One approach to asset sales could focus on sales of shorter-dated Treasury securities. At mid-2015, the SOMA Treasury portfolio is projected to hold around \$800 billion of Treasury securities with less than three years remaining to maturity. The red dotted line illustrates the projected effect on reserve balances of adding sales to the baseline scenario so that the SOMA portfolio is reduced by roughly \$50 billion per month once reinvestment is halted in late 2015. Reserve balances would fall to \$2.2 trillion within one year of liftoff (that is, \$200 billion lower than the baseline path), and to \$700 billion in 2018 (about \$700 billion less than the baseline path). Announcing the sales of shorter-dated Treasury securities might also send a signal that boosts short-term rates. However, the effects of such a signal are uncertain, and it could affect rates beyond short-term yields. If longer-term rates rise quickly, financial conditions could tighten more than intended.

Combining the liability-side and asset-side tools would likely make them more effective at reducing ON RRP usage quickly. The green dot-dashed line illustrates that the combination of term tools and asset sales described above would reduce reserve balances to about $500 billion by late 2016.

To sum up, the Committee has tools at its disposal that can be used to reduce take-up at the ON RRP facility and hence lower an initially high cap while maintaining appropriate interest rate control. The use of these additional tools would have costs, as does ON RRP usage, and the Committee will need to weigh tradeoffs between efficacy and costs for all of the tools. The staff will continue to evaluate the Committee's policy tools, particularly the ON RRP facility.

Finally, clear public communication about the intention to keep the ON RRP capacity only as high as necessary would avoid sending the unintended signal that a large ON RRP facility would be maintained for a period longer than the Committee deems appropriate. While reiterating the importance of a successful liftoff, the Committee could reaffirm its intent to use an ON RRP facility only to the extent necessary and to phase it out when it is no longer needed to help control the federal funds rate.

The next page of our handout lists the normalization questions previously distributed to you for the go-round.

CHAIR YELLEN. Are there questions for Jane or Antoine before we begin the go-round? Governor Powell.

MR. POWELL. For Antoine. We talk about $50 billion a month in Treasury sales. Can you talk about the derivation of that? Really, if the concern is that is as much capacity as the market has to accept supply, I guess the point would be that rates would be going up, which is our intention. How do you think about why that is a hard limit, or could it be substantially higher?

MS. IHRIG. I guess I could say one thing. If you look at the amount of securities we have on our portfolio that's three years or less, as Antoine said, it's about $800 billion. And if you're trying to sell it over the time frame that's in this projection, the projection represents some smoothing of how much you could do per month. In some sense you are limited by what is in your portfolio at the time. With the maturity extension program, you sold a lot of your short-dated securities, and then purchases in the last LSAP were on the long end. You don't actually have a lot of short-dated securities. Of course, the later you wait to sell, maturities of securities are getting shorter, and shorter-dated securities come into the window. As you can see, that's in part why there's a kink here in this projection, because you kind of start running out of securities to sell. But that's just in terms of what we have. I guess Lorie can talk about the market conditions.

MR. POWELL. What I'm saying is, if the exercise is to have rate control and put a floor under rates, we'll always be making more short-term securities as time passes.

MR. MARTIN. I think it's undoubtedly right that selling these short-term assets will help lift rates. I think the concern, if you start selling higher amounts, is the risk of a misperception of the Committee's intention and the possibility that the sales could raise more than short-term rates.

MS. LOGAN. I don't think, operationally, we would have any limitation to sell more—we sold about $40 billion during the MEP, and that did put some upward pressure on rates. And in this context, there is a demand for those securities. That's why we have high overnight RRP usage. So, you would think there would be demand to sell them. But all we are doing is just speeding up the redemptions. The securities are going to redeem very shortly, and we're just speeding that up by selling them. I think the other consequence you have to think about is for the Treasury. It will be refinancing as we let these securities run off, and so we'd be putting more pressure on them to account not only for the securities that are rolling off, but also for the securities that we're selling. The Treasury would then have to raise those funds, and that may not be as smooth a process as it would prefer. That would be just one other factor that you have to consider when you think about the pace of sales.

MR. POWELL. Okay.

CHAIR YELLEN. President Lacker.

MR. LACKER. I believe it's the case that it's a theoretical possibility, in the uncapped scenario, if every counterparty bid their limit, the bids would aggregate to more than reserve account balances right now. I believe you alluded to that fact, Jane. So, what would we do?

MS. IHRIG. First, let me say that it's true that if you took $30 billion per counterparty times 164 counterparties, you would get more than what's in the SOMA, but I think that's not a very realistic number. In part, if you look at the 164 counterparties, I think 24 are banks who get IOER. I couldn't imagine that the banks would be coming in when they could get IOER. If you look at the GSEs, they've been coming in quite small. Many tend to just be investing cash that they have for any cash needs of the institutions that are members. Freddie and Fannie come in, and they do come in around the cap when it's P&I day, but those are kind of special one-off situations that we know about. The primary dealers are very sensitive to interest rates right now. They are not coming into the facility because they are finding market rates are higher, and as long as market rates are higher, we wouldn't expect them to come in as well. So it's really the money funds, and you'd want to look at how much of their portfolio you think they might want to shift into the facility. Right now, they have about $700 billion of short-term Treasuries or repos on their books. I would say that might be an upper bound, but again, they have only been coming in a little over $100 billion over the past couple of months on average.

MR. LACKER. I'd agree. I'd find it persuasive that it's really unlikely, but you're not arguing the probability is zero, are you? We have taken a fairly risk-averse approach as a Committee, and it seems to me we ought to have a plan. What's our plan?

MR. POTTER. President Lacker, can you outline exactly what event you are thinking about?

MR. LACKER. Wouldn't we have to cap it and stop it out at less than full allotment?

VICE CHAIRMAN DUDLEY. I think you're doing a partial equilibrium analysis. In general equilibrium, the flowing of all these funds into the overnight RRP is going to have an effect on money market rates, and that is going to prevent the funds from flowing into the overnight RRP. It can't be that you can just drain $4 trillion of reserves from the system and not expect money market rates to rise, something that would prevent this outcome. I really think it's impossible.

MR. LACKER. You're making a forecast. You're not saying the probability is zero, is it?

VICE CHAIRMAN DUDLEY. I am saying the probability is zero because it doesn't make any sense. Why would all of this money flow into the overnight RRP facility if doing so would put significant upward pressure on other money market rates? It has to.

MR. LACKER. How?

VICE CHAIRMAN DUDLEY. It would have to because the people that they were funding now would not be being funded, right?

MR. POTTER. I think we've discussed scenarios in which they want the safest counterparty there is for a dollar liability. It's very difficult to believe that something of the size that you're talking about could happen overnight or within a week. If we saw a set of events that were leading to that kind of pattern, I think you'd all be meeting and trying to understand exactly what was happening. And I don't know how you'd feel about the various tools that the Federal Reserve has in that situation. It's not a probability-zero event. Obviously, we have a large balance sheet, but you'd all be looking at the events that would be leading up to it and deciding what the appropriate action was. But it wouldn't be the case that if you said tomorrow that we were running without a cap, there would be any issue of the increase in the facility being $2 trillion or $3 trillion. Money markets don't work that quickly.

MR. LACKER. Look, I'm not arguing that this is highly likely. It's just that there are people out there in the market who are smart enough to do this math. We call this "uncapped," but we'd have to have some sort of cap. There would have to be some backstop, upper limit, or cap. And I think it's fair and more transparent and better communication for us to describe this as not a suspension of the cap, but a dramatic increase in the cap to something—I don't know—on the order of $2 trillion. The only point I'd make about this is that calling this a suspension of the cap is really a bit misleading, and the money market letters are going to smoke this out.

MR. POTTER. I think one way to say it is we could take the size of the Treasury portfolio and say that it is the amount of collateral, taking off something for securities lending and the foreign pool, that we would be prepared to transfer over to the triparty agent.

MR. LACKER. Just set an amount that's much larger.

MR. POTTER. But that would be an operational detail that the type of people in money markets that you're talking about would be interested in, but most people wouldn't.

MR. LACKER. I mean, that seems like a cleaner way to communicate than to call it a suspension of the cap and have everyone doing a lot of math.

CHAIR YELLEN. Did you have a two-hander? President Rosengren.

MR. ROSENGREN. I have a less extreme tail event than President Lacker. Let's suppose at the time of liftoff that the cap is binding, so the federal funds rate is trading substantially below the target that we publicly announced. We have two options. We can either change the IOER rate, which would be a Board of Governors decision, or we can raise or eliminate the cap on ON RRP. So either we have to have an emergency meeting of the FOMC that night, or the Board of Governors has to have a formal meeting to decide if the IOER rate goes up. Let's say that we decide to do the IOER, but we don't really understand what the spread is between IOER and ON RRP. After the Board has raised the IOER, we find out that's not sufficient either. So then, following that, we have to eliminate or raise the cap on RRP.

What do we think the market's reaction to the degree of uncertainty that the Federal Reserve has around this action would be? We seem to be viewing this as an innocuous event. I guess thinking about the decision trees—whether we do ON RRP or whether we do IOER and how the market reacts in that context—it seems, from a risk-management standpoint, it's highly risky to have a cap and have no certainty whether it's binding or not versus no cap, at least at initiation. Could you tell me a little bit more about the costs and benefits as you think about the benefits of that cap and think about what happens if there actually is much more demand? I don't think it's going to exceed the amount of reserves, but I think it could exceed $800 billion. I think the likely behavioral actions around this time are highly uncertain. I hope it's much less than $800 billion, but I have no certainty about any of our estimates of that. If it's not binding, both no cap and the cap have the same result, but if it is binding, there's a very different sequence of events, and it's unclear how our plan is to react to that. Can you talk a little bit more about that cost-benefit calculation?

MS. IHRIG. When I think about what I would do if I were a policymaker, I think about two key considerations, which are, how certain are you about setting the cap, and how much do you really want monetary control on day one? Depending on your views regarding those two concerns, I think it can lean you toward setting a cap of a certain size, and you're very comfortable and you think that's more than plenty and you think that you won't even need intermeeting adjustments—or maybe you think you do, and that's just part of doing monetary policy and it's not a big deal. Or you're at the other extreme, where you're really worried that if we set a cap too low we'd be nervous, and it might hurt our credibility right at liftoff, which is a really critical time. I personally don't have an answer that would state specifically what to do. I think that these are two key concerns, which are, how comfortable are you at a certain cap size, and how much do you really care about monetary control right around the time of liftoff so that you don't have to come back and make adjustments?

CHAIR YELLEN. Further questions? President Kocherlakota.

MR. KOCHERLAKOTA. Yes, thank you, Madam Chair. I have a quick question for Simon, which I should know the answer to. If you were going to put the cap based on the size of the Treasuries we have in our portfolio, what would that cap number be?

MR. POTTER. It would be somewhere between \$2 trillion and \$2.5 trillion.

MR. KOCHERLAKOTA. Thanks.

CHAIR YELLEN. Okay. Seeing no more questions, why don't we begin our go-round, starting with President Mester.

MS. MESTER. Thank you, Madam Chair. In considering the design and combination of tools that were used during normalization, my primary consideration is control of short-term interest rates. We need to demonstrate at liftoff that we can move the federal funds rate into our target range. Another important consideration for me is consistency with the normalization principles we've communicated to the public. Further communication should add clarity rather than confusion. Both of these considerations speak to the Committee's credibility, which is always important, but it's arguably even more important as we begin to implement normalization.

We've communicated our intention that the overnight reverse repo facility will be a temporary one. As the staff memo lays out, various combinations of tools could be used to achieve control of short-term interest rates and allow for the eventual phaseout of the overnight repurchase facility. Regarding the initial setting of the aggregate cap on reverse repos, I'd rather not put us in a position of having to raise the cap after liftoff. I think we would send a confusing message, and it could undermine our credibility. It could signal we don't have adequate interest rate control or that we're reconsidering whether or not the facility will be temporary. That leaves me with the choice of setting a high cap at the start and then lowering it over time as we gain experience, versus setting no cap at liftoff and then imposing one later. I don't have strong preferences for one over the other. Either one seems consistent with the normalization plans that we've laid out, provided it's accompanied by appropriate communications.

We are going to need to explain the purpose of whatever design choice we make, especially as it is going to differ, I think, from our test design. Then we need to reiterate that we will use the facility only to the extent necessary; that we plan to phase it out; and that phaseout might be accomplished by imposing caps on the facility's size, which we could reduce over time; and that we'll periodically reconsider various design features of this and our other tools. Then, once we have a clearer sense of how our tools are working together to control short-term rates, we can communicate a plan for phasing out the facility. To reduce its size while maintaining adequate control of short-term interest rates, we may indeed need to rely on several of our tools, including asset sales. At this point I wouldn't want to rule them out, but I do think we need further study of how these tools would likely interact with one another.

One final thought: I would be cautious in committing, at this point, to any particular timetable for a reduction in the size of the reverse repo facility cap, or imposition of a cap if we start without one. As I read the staff memo, that seems to be the intention in option 2, and perhaps in option 1 as well. This gives me pause. Even if today we think it likely we could reduce the cap size fairly soon after liftoff, we may run into some surprises. Aren't the uncertainties surrounding interest rate control the crux of today's discussion? I wouldn't want to hurt our credibility by having to go back on an earlier communication. That's similar to my distaste for putting ourselves in the situation of having to raise the cap at a later date. Rather than commit now to a timetable, I'd prefer more general communication, as I just outlined. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Lacker.

MR. LACKER. Thank you, Madam Chair. As I said just a few moments ago, I think the question is, what size of an initial cap we are going to adopt? To me, $800 billion seems like a fine number. I could support $1 trillion. I could go up to the size of our Treasuries portfolio, $2 trillion to $2½ trillion, whatever that calculation is that Simon alluded to. Regarding how to scale back usage after liftoff, the case in which usage falls fairly rapidly of its own accord is straightforward. The harder case is one in which usage remains elevated and high.

As I reviewed the staff memo, my attention was immediately attracted to the phrase "asset-side tools," and I began fantasizing about auctioning off our holdings of MBS and long-term Treasuries at a fairly rapid clip. However, I suspect that option may fail to garner a majority of support from the Committee. In that case, I would favor selling short-term assets, although it seems unlikely that we could sell a quantity sufficient to make reserves scarce enough any time soon. As a third choice, I would favor raising IOER above the top of the federal funds target range, starting with 5 basis points and seeing what happens, moving to 10 or 15 basis points if that is not enough.

As to the other options, using term RRPs seems inferior. It is going to leave the RRP program, in general, with the same footprint and would take an unrealistically large set of operations to reach the point at which reserve balances are scarce enough to make a difference. I have always raised questions about whether term tools really make reserves scarce, because they are just term monetary assets. They are not nonmonetary assets and are unlikely to be marginally constraining for the participating institutions. Thank you, Madam Chair.

VICE CHAIRMAN DUDLEY. Can I ask a clarifying question?

CHAIR YELLEN. Yes.

VICE CHAIRMAN DUDLEY. Let's imagine that the overnight RRP facility wasn't very big; let's just say its usage is $200 billion or $300 billion. Would you still sell assets?

MR. LACKER. No, I wouldn't see a need to.

VICE CHAIRMAN DUDLEY. Okay.

CHAIR YELLEN. President Rosengren.

MR. ROSENGREN. Thank you, Madam Chair. President Lacker's fantasy is my nightmare. [Laughter] When we announce that we are raising the range for the federal funds rate, it is critically important that we are successful in quickly moving the federal funds rate within the range and then keeping it there. With our credibility at stake, and with a high degree of uncertainty about the market response when short-term rates are initially raised above current levels, I would argue against any cap on the ON RRP facility at the time of liftoff.

If the ON RRP take-up remains very large for some period after liftoff—and we should discuss how long a period we would be comfortable with—we should raise the IOER high enough that the federal funds rate rises to be within the federal funds target range without excessive take-up of the ON RRP facility. Again, we should discuss the Committee's definition of "excessive." For example, in order to reduce the risk of extensive use of the ON RRP facility, we might raise the IOER rate to 60 basis points to maintain the federal funds rate within the 25 to 50 basis point range. The IOER rate can then be adjusted subsequently to fine-tune the placement of the federal funds rate as we better understand the relationship that the federal funds rate has with the spread between IOER and ON RRP rates.

This raises the question of whether we have communicated sufficiently that, while the target range for the federal funds rate will be 25 basis points, the spread between the IOER and the ON RRP rates may need to be greater than 25 basis points. Particularly in our explanation of liftoff, it should be clear that the IOER rate will be adjusted to ensure that the federal funds rate stays within the target range. As a sidenote, the dependence on the IOER rate to generate the desired range for the federal funds rate does create a governance problem. Ideally, the FOMC would be setting the IOER rate. And, if reform legislation were to move through the Congress, I would prefer the IOER rate be a vote of the FOMC, as it is the key variable in setting monetary policy under our current exit guidelines.

The main strategy for reducing the ON RRP take-up after liftoff should be setting the IOER rate high enough that the federal funds rate is trading within the desired range without excessive reliance on the ON RRP. Some of the suggested remedies in the memo might be tantamount to changing monetary policy to minimize reliance on the ON RRP. The tool should be set to generate the desired policy. Policy should not be adjusted to minimize the use of the tool.

For example, I am strongly opposed to asset sales. First, this would reverse our often-repeated promise not to engage in significant sales, possibly reducing the credibility of our exit strategy. Second, even if the sales were limited to very short-term securities, I am worried that investors might become concerned that longer-maturity securities would be sold next. This concern would be exacerbated by the relatively small stock of short-term securities currently in our portfolio. If monetary control is at stake and we choose to sell very short-term securities, these could be exhausted before control is regained, implying that longer-term securities will soon be on the auction block. This could potentially cause a Treasuries sales "tantrum" as investors in longer-term securities doubt the credibility of our promise on holding securities to maturity. The costs could be large if our initial announcement of short-term sales results in significantly raising medium- and longer-term rates. The potential benefit would be avoiding elevated use of the ON RRP until our balance sheet is reduced, but that benefit does not seem worth the undermining of our announced exit principles.

If we are seriously considering asset sales or other means to minimize the use of the ON RRP, I would want to stop reinvesting sooner, although this would also be changing policy to minimize use of a tool. The key in my mind is that while the costs of a larger overnight RRP facility that lasts for longer are somewhat ill defined, the costs of tightening policy are reasonably clear. As a consequence, we need to have a better discussion of why short-term use of the ON RRP is such a problem that it causes us to tighten by stopping reinvesting or signaling in any way that we would engage in asset sales. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Madam Chair. On the first question regarding my views on the two aggregate cap options, I have come around to the view that the Committee appropriately should take minimal monetary-control risks in the first phase of liftoff. I prefer suspending the aggregate cap—that is, option 2. I think we can operate the overnight reverse repo facility without a cap for a brief period without serious consequence. As a practical matter, if an episode of severe financial instability or risk of instability were to materialize in the early weeks post-liftoff, we could react with limits on take-up appropriate to the circumstances at hand. I see little need to impose a limit at the outset as long as we clearly intend to assess take-up, assess rate control effectiveness and the risks post-liftoff, and then, on that basis, impose a cap.

On the second question, strategies to later reduce the overnight reverse repo take-up, the staff memo lays out two discrete methods: widening the spread to IOER and draining reserves. Early on, I think we must rely on widening the spread. Execution of a draining strategy that includes asset sales would take a while. For planning purposes, I anticipate a shorter time horizon for reducing and phasing out the overnight reverse repo program. I think there may be some scope for a combination of spread widening and draining, but I am hoping the need for the overnight reverse repo program will fall away long before we could get excess reserve balances of $500 billion. So, I see draining operations, including asset sales, as a supplemental tool.

The questions posed for this round were very high level, asking for our general views. I think it would be prudent to go a little further and try to agree, at least tentatively, on a baseline post-liftoff plan for implementing reductions in the overnight reverse repo facility, if things go well. To be sure, we will be learning by doing and we will make tactical adjustments as we go, but I think a discussion at this meeting or the April meeting of a plan with more specifics might highlight some issues important to consider.

For discussion purposes, should participants care to react, here is how I am thinking about phaseout, if things go well. After a couple of moves of the federal funds rate target range, we assess whether and where federal funds are trading in range and where other short-term rates are trading. If satisfactory, at that point we announce an overnight reverse repo cap. If all goes well with respect to volatility and the rate continues to trade in range, at the next rate move we widen the spread by holding the overnight reverse repo rate where it is. We continue to widen the spread with each rate move until take-up under the program fades away. I am sure we can imagine other scenarios, and certainly the more adverse scenarios have been discussed earlier. For example, if federal funds trade at or very near the floor, and there is large take-up, that would be one scenario. If such a situation persisted, it seems to me that we might have to resort earlier and longer to term tools and the decision to cease reinvestment, and maybe sales, as part of this process.

If, as we proceed post-liftoff, we are to optimize the tradeoff between monetary control and avoidance of the costs and undesirable potential consequences of a large and persistent long-term overnight reverse repo program, I favor some concrete advance planning as a frame of reference, at least, for future decisions. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Madam Chair. I guess, in part, my remarks are taking up the issue that Eric raised. I think it's quite hard to say how much of a risk to financial stability an ON RRP facility could pose if it continued long enough and on a sufficient scale as to be plausibly regarded as a safe haven to which money markets could run from privately created assets, such as commercial paper, during a period of stress. But because I seem to have fallen into the role of Cassandra for this topic, let me play to type today, at least for the heuristic purpose of exploring some of the potential costs of the ON RRP, which the staff memo alluded to but didn't actually discuss. I want to do that by placing this discussion in a little bit of context, and the context is essentially the progressive growth of the ON RRP as the centerpiece, what we expect to be the most important tool for policy-normalization purposes.

The use of an ON RRP was explicitly proposed to the Committee less than two years ago. In a July 23, 2013, memo to the Committee, it was characterized as a "useful addition" to the proposed set of normalizing tools that had been previously identified as consisting of IOER, TDF, and non-overnight RRPs. In the intervening period, the staff and many Committee members have come to conclude that the ON RRP will actually be essential to making IOER an effective tool, and that the other tools, while perhaps playing a secondary or tertiary role, have significant limitations. This focus on ON RRP was evident in the memos that were circulated to the Committee prior to our discussion last year. As you may recall, at the time, the staff suggested a facility with a $500 billion to $600 billion cap. And, in response to concerns expressed by a number of us, the testing has proceeded with a cap of $300 billion. This apparently had the intended effect of curbing market expectations regarding the eventual size of the facility.

Obviously, this is one means of trying to prevent the expectation that the Federal Reserve would be available as a borrower of last resort. In truth, of course, even a cap might not do the trick in a stress period during which we might come under heavy, perhaps even self-generated, pressure to expand an ON RRP program in the interest of stabilizing money market funds in the wake of Dodd-Frank's elimination of other sources of support for those funds. But at least at the margin, and potentially more fundamentally, a moderate cap would work against the development of money market fund business models based on regular or contingent investment opportunities at the Federal Reserve. I gather that the mention in the January minutes of a likely increase in the cap at the time of liftoff didn't lead to a basic change in market perceptions, but I think Governor Powell mentioned—and I noticed the same thing—that there has been at least some change among some market participants in the expectation of a significantly larger program.

Now, in the memo distributed prior to this meeting, the choice presented to the Committee is no longer $500 billion or $600 billion, but $800 billion or no cap at all. This is not a particularly appealing choice for me because I think either one risks communicating a substantial program. And it's not hard to imagine a decision dynamic in the FOMC that gravitates, at each meeting, toward maximum assurance that our target range will be achieved with some precision, because financial-stability risks will probably always seem hypothetical and much less immediate than monetary policy targeting.

This is the way financial-stability risks arise. At any one moment, near-term policy desiderata always trump the potential hypothetical growth of financial stability concerns, whether it's commercial real estate lending or mortgage-backed securities or anything else. That's not to say that's what's going to happen here, but that really is the dynamic of decisionmaking: You have something hypothetical, and you've got a near-term policy aim of some sort—whether it's economic growth or monetary policy control—that, among the decisionmakers, always seems to have a higher priority. By the time our balance sheet shrinks enough to make the ON RRP less relevant, it's not hard to imagine a future FOMC being warned that reducing the cap or eliminating the ON RRP could itself produce significant disruptions in money markets. At that point, the tradeoff between avoiding near-term disruptions and a possible exacerbation of what are, again, hypothetical, longer-term financial-stability risks, could well be decided in favor of avoiding short-term problems.

So, at least at this time, I don't have a favorite across those two alternatives, and picking up on one of President Lockart's themes, I would like to hear at a future meeting a more elaborated proposal. My preference is not to decide this issue today but to try to build into the obvious imperative of achieving monetary policy control a more specific set of proposals for how to deal with the potential risks.

As to the second question on strategies to reduce the ON RRP after liftoff, let me first say that I appreciate the language changes that were made in the bullet points on operational details proposed to be included in the minutes of this meeting. I think the specific invocation of other tools in the context of an anticipated early reduction in the size of the ON RRP is helpful in countering expectations of ongoing, larger scales for the facility. I think, though I'm honestly not entirely sure, that I would favor something like an explicit commitment to reduce the cap beginning within a few meetings following liftoff, because I believe that the imperative is to have a successful liftoff at the early stage of normalization, but that the possibility of a little softness in the funds rate six or eight months later would not be damaging to our credibility. Also, a specific commitment of this sort would force us to make use of some of the other tools mentioned in the staff memo. However, based on Committee discussion to date and, indeed, the first group of speakers this morning, I'm not at all sure that I'd get much support for this approach—which, by the way, whether it's reducing the cap or putting a cap in place following a no cap or $2.5 trillion cap at the outset is basically the same exercise.

In the absence of such a commitment, I'd probably go along with just about any configuration of other tools and reducing reliance on the ON RRP that could garner substantial support on the Committee. My own instinct is toward some combination of a higher IOER rate and greater use of term RRPs, and, depending on how large the ON RRP had become, perhaps even some sales of shorter-term Treasuries. I think Eric has already pointed out a certain clunkiness in trying to put these tools together, which, as a governance matter, is probably something that we need to address. But more important to me than any of these particulars are, first, that we convince ourselves that we have alternatives to a large, ongoing ON RRP that we are willing to deploy with full recognition of their possible downsides; and, second, that we state this position publicly with as much detail as fairly reflects our actual eventual consensus.

In a similar vein, I would note in passing that I would favor continued testing of term RRPs at the end of quarters precisely because it will signal that we're taking this tool seriously, though I also will note that I would understand the reluctance of members who might favor a liftoff during the next several meetings to authorize testing for the rest of the year because, as Simon says, once "patient" is off, that may send some signal on liftoff timing.

Finally, Madam Chair, let me close with the hope that initial takeoff turns out to be about what we've been anticipating lately so that we're spared having to make what I think is an increasingly difficult tradeoff that we're contemplating in this discussion. Thank you.

CHAIR YELLEN. Thank you. Acting President Prichard.

MR. PRICHARD. Thank you, Madam Chair. The FOMC must appear confident during the early stages of liftoff by exercising fairly tight control over the funds rate. Doing so would establish our ability to conduct monetary policy under these unprecedented conditions and provide the necessary confidence to markets and the general public that the Committee can maintain sufficient control over monetary policy until such time as our balance sheet is fully normalized.

In this regard, I believe that we should operate for a brief period without a cap and, then, as quickly as is prudent, impose a cap based on our initial experience. We would initially refrain from imposing a cap because of the uncertainty of what that initial take-up would be. By setting a specific cap, we could err on the low side by ending up with a cap that initially binds, resulting in a funds rate that would trade below the targeted range, or we could set a cap that's too high, which might be misinterpreted as a Committee desiring an unnecessarily large ON RRP facility. By not specifying a number, we would avoid communicating any particular position as to the size of the facility. However, it would also be important to communicate that it is the combination of this uncertainty regarding the initial take-up and our desire that the funds rate trade within its target range that leads us to begin without an aggregate quantity restriction.

After obtaining information about the necessary size of the facility, a cap would be established. Further, we would emphasize that the ON RRP facility is intended to be temporary, and that we will reduce its size as circumstances allow. We may also wish to authorize the term RRP facility to initially operate only around quarter-end in order to counter the volatility associated with those periods. However, once we have established our ability to move the funds rate in a regular and fairly precise fashion, I would prefer to ignore the quarter-end effects, as they will have little influence on the effectiveness of overall monetary policy.

It is not unlikely we will find the initial size of the ON RRP facility to be uncomfortably large and, over time, wish to reduce its footprint on financial markets. Reducing the size of our balance sheet will no doubt help, but that process will be quite long and drawn out, and, therefore, we will require other options. The outcome I find most appealing is to widen the spread between the IOER rate and the rate paid on the ON RRP facility. The alternative of introducing a permanent term RRP facility does not seem like an alternative at all because it merely introduces a close substitute, and by not reducing the sum of the two instruments, has little effect on the imprint we will have on financial markets. The only meaningful way to reduce the size of the facility is to make reserves scarcer or to increase the spread between IOER and the ON RRP rate. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. First Vice President Holcomb.

MS. HOLCOMB. Thank you, Madam Chair. I am hesitant to comment on the issues related to tools, knowing that this discussion builds on many previous discussions in which I did not participate. However, I have closely read the transcript from the previous meeting and found very insightful comments there, and I would like to thank the authors of the background memo, which was very helpful in helping me to understand these issues.

I gained some perspective on the concept of liftoff as a result of a recent discussion with our director, who heads the Johnson Space Center, where liftoffs [laughter] are a regular occurrence. I know that you all are well aware that in Texas, we like to speak using analogies, so if the Committee will indulge me, a couple of comparisons seem relevant. A NASA liftoff shares many characteristics with the liftoff that we are contemplating, including the possibility of last-minute circumstances and issues that change the plan or abort a launch, as well as the need for multiple gauges and alternatives that support in-flight corrections. Our director noted that a successful liftoff is an important step to overall mission success, but what happens after the liftoff in the next 73 seconds, days, weeks, and—in the case of the mission they are launching this month—the next year are more important than the liftoff itself.

So, in turning to the question regarding the initial cap, I understand that, like a space launch, our liftoff must go smoothly in order to ensure the successful completion of the mission. Therefore, it will be important that the initial combined cap on RRP take-up be set high enough to ensure that the funds rate stays within the designated target range at liftoff. Therefore, I support operating without a cap initially. To preserve the credibility of our pledge to minimize use of the ON RRP facility, it will be important to either quickly reimpose the cap, if we begin without one, or to reduce our initial cap over time, even if the overnight bank funding rate falls below the lower limit of the Committee's target range from time to time as a result.

You asked that we include our comments on the options for the term RRP quarter-end testing as we go around. On that front, I would say that obviously good quarter-end control of the funds rate will be important, at least through the early phases of the policy normalization process. The Federal Reserve Bank of Dallas research staff has advised that the best way to achieve this control will be with a term RRP facility, as the end-of-quarter term RRPs are relatively illiquid and not continuously on offer, and thus are less likely to facilitate bank runs than our overnight RRPs. So, I would oppose discontinuing quarter-end RRP operations, as noted in our option 3, which I don't think is really on the table. Recognizing that through this period of transition, the Committee will be watching market developments very closely in order to make in-flight corrections, either of the other proposed options—reauthorizing term RRP operations on a quarter-by-quarter basis or through the end of the year—is a good alternative. We lean toward option 2, knowing that there is still the opportunity to make decisions as to whether or not to actually conduct the operations, as was pointed out.

After liftoff, we've looked at the remaining tools under consideration and have a few comments. As previously indicated, we favor continuing end-of-quarter term RRP operations through at least early phases of normalization. These operations help achieve good monetary policy control at quarter-ends, and the financial-stability risks associated with term RRPs seem likely to be lower than those associated with overnight RRPs. If overnight RRP take-up away from the quarter-ends is so high as to raise unacceptable financial-stability concerns, we see additional term RRPs, not quarter-end RRPs, as the first line of defense. Interest costs from the term RRPs are relatively low, and term RRPs are likely to be nearly as effective as overnight

RRPs in supporting short-term interest rates. Yet financial-stability risks are lower. We agree that substituting term RRPs for overnight RRPs will not reduce the Federal Reserve's footprint in financial markets. The best way to reduce that footprint is to phase out reinvestment of principal relatively quickly so that the balance sheet shrinks and both overnight and term RRPs are no longer necessary.

We are less confident that term deposits will play a useful role in normalization. They bear relatively high interest costs. They would have to be adopted on a large scale in order to drain reserves to the point at which overnight RRP demand dries up, and it is uncertain that they will induce banks to pursue arbitrage opportunities more aggressively, even with an early withdrawal option. This is something that we would like to learn more about as we go forward.

And then, finally, because President Fisher will be president for four more days, I feel compelled to support President Lockhart's call for advance planning that would lay out options under various possible scenarios and essentially create a decision tree. Thank you.

CHAIR YELLEN. Thank you. President Evans.

MR. EVANS. Thank you, Madam Chair. Helen's very nice comments about space analogies remind me that I had the very high honor yesterday of meeting former astronaut James Lovell, of Apollo 13 fame. I had the feeling that we are going to find a way to bring everything together here, right?

MS. HOLCOMB. Here we go.

MR. EVANS. You know, to ensure monetary control, at any rate.

MR. TARULLO. We hope not like that. [Laughter]

MR. EVANS. My views on the steps we need to take to ensure monetary control have not changed since the previous meeting. When the time comes to raise rates, it is important that we maintain monetary control in line with achieving our policy goals. I do not have strong preferences regarding whether that control should be achieved with an elevated cap or a suspension of the cap. I don't think at this point we have sufficient knowledge to judge the relative risk of an $800 billion aggregate cap versus a temporary suspension of the cap on financial stability or our footprint in markets. Therefore, to ensure we will have the control we seek, I would be willing to suspend the cap, if the Committee forms such a consensus. As long as we effectively communicate to market participants that the elevated capacity is temporary and we follow through by reducing the capacity as needed, potential financial stability risks and footprint issues should be minimal. Accordingly, we should make sure all other tools are ready, if needed, to reduce the overnight RRP cap. So, I would continue with the testing of the term RRP facility. And, by authorizing quarter-end tests for the remainder of the year, we reduce our administrative costs and avoid potentially confusing signals regarding the timing of liftoff. So, I support this proposal.

More generally, I would prefer to rely on our liability-side tools to reduce ON RRP take-up after liftoff. I would not alter our previously agreed-upon exit strategy on asset sales. First, I expect our liability-side tools to work as intended, so I don't think we will need asset sales to maintain monetary control. More importantly, in the absence of material changes in market conditions, altering the exit strategy we already communicated might confuse market participants. Of course, if circumstances did change enough to call into question our control, I would not be opposed to asset sales. But based on our tests to date, I don't anticipate we will need to resort to sales prior to our established plan. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Williams.

MR. WILLIAMS. Thank you, Madam Chair. And thanks again to the staff for the helpful background memos. This discussion has already been very illuminating. I didn't actually realize that my colleagues' both fantasies and nightmares centered on policy normalization. I think when the transcripts come out, the psychologists will have a field day with this discussion.

To me, the key overarching priority is for us to maintain monetary control at and after liftoff. Embarking on the normalization process with an overnight repo facility with an $800 billion limit would most likely suffice. However, to avoid any chance of losing monetary control at this critical juncture, I am comfortable with operating the facility without an aggregate cap during the initial normalization phase. Of course, a potential downside—which has already been raised by a number of people—to having a very large or unlimited initial cap is that it could be misinterpreted as signaling the intention to maintain a large presence in the market in the future. We have already indicated that this is a temporary measure, and it will be ended when it is no longer needed, and we should continue to reiterate that message.

But like President Mester, I would like to say that we shouldn't get locked into a particular timing of the reduction of capacity. For instance, the proposed language from the minutes states that we plan to reduce the facility's capacity "fairly soon" after liftoff, which some might interpret as within a couple weeks or a couple months. If this phrase appears in the FOMC minutes, I am fairly confident that we will be asked what "fairly soon" means, as it is apparently a new phrase for the FOMC. I would prefer to leave our options open as to the timing of the adjustment of the cap, so that we maintain flexibility to best balance our goals of monetary control and financial stability. So I suggest deleting that sentence.

Turning to the strategies to limit very high overnight reverse repo facility usage after liftoff, the best course of action is difficult to determine in advance. And although, like President Lockhart, I think it makes a lot of sense to war-game different strategies or to have decision trees in connection with that, I do think the appropriate strategy will depend on the reasons underlying the high take-up rate as well as on the economic landscape. If a high take-up rate materializes, we will have to examine its causes and weigh the costs and benefits of alternative approaches in this light.

Having said that, we were asked our views on this. In general, I see term RRPs as the preferred tool for curbing demand for overnight reverse repos while still facilitating monetary control. Again, this is in the context of the very high sustained usage of the overnight reverse repo facility. Importantly, the term RRP tool provides some flexibility, because we can determine the time and size of offerings. And, as the background memo highlights, we could also discourage the use of overnight reverse repos by raising the IOER rate. Now, I find that option less attractive, as we would be widening the target range for reasons other than monetary control, which might muddle our communications. I am also concerned about the negative public perceptions that higher interest payments going to banks at a cost to the taxpayer might create in that case.

Now, on the other side of the ledger, sales of short-term Treasuries would likewise provide a sensible approach from a monetary policy perspective. Just think about the economics of it. It would put upward pressure on short-term rates while having little, if any, effect on longer-term rates. However, as has been mentioned by President Rosengren and others, asset sales during the early stages of normalization could be misconstrued as signaling a tighter overall policy stance. Some might think it hints that asset sales of longer-term securities may be in the offing.

Looking further down the road, once we have moved sufficiently away from the zero lower bound and have ceased reinvestments, asset sales, specifically of shorter-term Treasuries, could be a useful approach. Under those conditions, they could be accurately described as a tactical means to reduce the balance sheet with no greater implication for future monetary policy.

In terms of the term RRP testing, I am supportive of reauthorizing through the end of the year. Thank you.

CHAIR YELLEN. Thank you. President George.

MS. GEORGE. Thank you, Madam Chair. As the staff memo notes, the ability to clearly demonstrate that we can steer short-term rates is paramount. With that in mind, I support including operational details about the Committee's plan for liftoff in the minutes of this meeting to remind market participants of the expected contour of the ON RRP's purpose and its capacity. I can support operating for a brief period after liftoff without a cap on the size of this facility—of course, subject to the size of the portfolio, as others have noted. In terms of strategies the Committee could follow to reduce ON RRP take-up after liftoff, it seems reasonable to adjust the cap at some point, as the staff memo suggests, with sufficient headroom to ensure control of short-term rates, but not too large to make the facility susceptible to large, rapid inflows.

A more challenging scenario, of course, arises in the case of a persistently high level of take-up. To prepare for such circumstances, I think all tools, including term RRPs and the Term Deposit Facility, should be considered to the extent they are needed to drain reserves. I also would support sales of shorter-term Treasury securities, as needed. In general, I would argue to keep all of these tools on the table as we approach liftoff. This includes the option of ceasing reinvestments. Waiting until after liftoff to start this process I view as something of a missed opportunity, so I would support keeping such an option available to use sooner rather than later to effect the level of reserve balances.

How the Committee determines ex ante the sequence, the priority, and the circumstances for using these different options, of course, is more challenging. I would agree with others that it may be worthwhile to engage in some sort of scenario analysis under various states of the world where the ON RRP facility is larger than we deem appropriate in order to give the Committee a better sense of which tools are first deployed, when, and under what circumstances. Thank you.

CHAIR YELLEN. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Madam Chair. As I listened to President Lacker and President Rosengren, I was reminded of a line from the great Ninth District poet, Robert Zimmerman, a.k.a. Bob Dylan, who said, "You can be in my dream if I can be in yours."

MR. WILLIAMS. That was scary.

MR. LACKER. No, thanks. [Laughter]

MR. KOCHERLAKOTA. As I will indicate tomorrow, especially, I continue to think it is too early for us to be having this conversation. The appropriate time for policy firming is, in my view, well off. But with that noted, I will offer some views on what would be an appropriate way to be thinking about the use of our tools at a time around liftoff and then afterward.

If the Committee clearly has a very high desire for monetary policy control at the time of liftoff—and I am quite sympathetic to that, myself—I think that it is going to be important for us to demonstrate that we are able to lift off. I think Helen's analogy is quite useful to keep in mind. So I think having a large cap at liftoff is desirable. I have a slight preference, but I could be talked out of this, for a temporary suspension as opposed to going to an explicit high numerical cap. I think it is just an issue of communications. I think it sounds a little better to say it is a temporary suspension because that would just make it sound like it has more conditionality built into it, but that is just, as I say, a slight preference.

As I listened to people's comments around the table, I was struck by President Lockhart's call for planning—it was echoed by others—and President Mester's call for communication. I would like to see us do more planning about what we are going to do after liftoff. If we go with the route of a temporary suspension of the cap, what does "temporary" mean? Is there a time element to it, or is it based on conditions? What are we looking for? At least having an internal understanding of these points would be useful. And, personally, I think communicating as effectively as we can about that would be helpful.

I will offer what is, I think, more of a minority perspective on the desire and the need for monetary policy control after liftoff. I am sympathetic, as I said, to the perspective that we really need tight monetary policy control at the time of liftoff or immediately thereafter—in the next two to three weeks thereafter. I would suggest that we should be deemphasizing the role of monetary policy control going forward. I think the focus on it in our communication risks building a misunderstanding of what the purpose of the Federal Reserve is. If you look at a proposal like the Federal Reserve Accountability and Transparency Act, I think it builds in a misunderstanding that the FOMC's purpose is to control interest rates, whereas in fact our purpose is to deliver good macroeconomic outcomes through using our tools. And, I think being more relaxed about monetary policy control would be one way to help further people's understanding that really what we are trying to get to is better macroeconomic outcomes. Hitting the target range for the federal funds rate on a daily basis is not essential to that purpose.

With that said, I understand that we might well face tradeoffs between the size of the ON RRP facility and the degree of control that we are interested in achieving. I remain open to a further discussion of the wide range of ways we can try to resolve that tradeoff. To me, right now, it seems like the interest rate on excess reserves seems like the best way to resolve that tension. But, as I said, I remain open.

One point that I want to make is that I think having an occasionally binding constraint is a positive thing for us, not a negative. It gives us experience with having a binding constraint. If we evolved to a point at which we have, say—I will just name a number—a $300 billion cap that binds at quarter-end, and that induces us to have a very low federal funds rate at that time, I don't see that as a negative at all. I think that will be good in terms of both markets and our own experience with a binding constraint.

To wrap up with some final comments, I favor testing through year-end, if we do indeed drop the word "patient" tomorrow. I think the Committee is going to drop the word "patient" tomorrow. We haven't had that discussion yet, but I do anticipate that happening. Because I anticipate that happening, I favor testing through year-end.

And, I have a couple of comments on the wording. I am comfortable with having the update to our principles in the March minutes as proposed on page 3 of the staff handout, with three emendations. In the first sentence, there is a reference to "the FOMC will use, when it becomes appropriate." I would suggest, Madam Chair, changing "will" to "intends to." I think "will" sounds overly definitive and determinative. Similarly, in the next sentence, "[w]hen economic conditions warrant the commencement of policy firming, the Federal Reserve will," I would suggest replacing "will" with "intends to." Finally, President Williams raised, I think, a very good point that we don't necessarily want to get into the new game of defining what "fairly soon" means. I am a little less comfortable with just dropping that sentence. I would suggest replacing "fairly soon" with "at an appropriate time." Thank you, Madam Chair.

CHAIR YELLEN. Thank you. I suggest we break now. We have a scheduled lunch in honor of President Fisher at 12:30 across the street. The plan is to come back at 2:00, and we will continue the go-round at that point.

[Lunch recess]

CHAIR YELLEN. Why don't we continue the go-round with President Bullard.

MR. BULLARD. Thank you, Madam Chair. I have just a few comments on the two questions that were asked. The first question is, should there be an aggregate cap on the overnight RRP program at liftoff? My counsel is that we not have a cap at liftoff and then set a reasonable cap during the aftermath. On the second question—general views on limiting the overnight RRP program take-up after liftoff—in what the memo calls the "complex case" in which demand for overnight RRP is significant during the period after liftoff, I generally think that interest rate control trumps the issues associated with potential financial instability. I would not wish to put an artificial limit on overnight RRP if it would damage the Committee's interest rate control credibility.

The options in a large post-liftoff take-up scenario, as I understand them, include, one, raise the IOER rate to increase the spread between the IOER and overnight RRP rates; two, use term repo; three, use the Term Deposit Facility; and, four, use some type of controlled asset sales program. I find myself in general agreement with the analysis in the memo evaluating these options. Asset sales, in particular, would presumably be a slow approach to reducing dependency on a high-demand overnight RRP facility. Even though I've advocated asset sales in the past, I don't think they'd be useful for this particular purpose, and I agree with President

Rosengren in that assessment. The fastest and most direct response, in my opinion, would be to raise the IOER rate in order to increase the spread between the IOER and overnight RRP rates. That seems like the tool the Committee will need to rely upon in real time. I'm not opposed to experimenting further with term repo, the TDF, or both, to reduce reliance on a high-demand overnight RRP program. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Vice Chair.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. On the first question, I favor operating for a short time without a cap and then imposing a cap based on expected usage. I would actually keep the "no cap" in place for maybe the six weeks between FOMC meetings so you'd come back to the next FOMC meeting without any drama. Then you would just put the cap in place, so you wouldn't have to have a video conference. You wouldn't have to have all of the question marks concerning when are they going to put the cap in place. In my opinion, that would just be a very low-key way of doing—it would avoid a lot of drama. I'd set a cap after that six-week period with sufficient headroom so that the market could reasonably expect that it would bind rarely, if ever. I would supplement that cap with term RRP around quarter-end. The reason is that we see usage increases around the quarter-end. So why not just have the term RRP take up that slack? That would allow you to operate safely with a lower overnight RRP cap.

To put that all in place, I would authorize the series of term RRP tests that we're talking about over the next three quarter-ends—June, September, December. Because you have the tests in place, there would be no errors of signaling to the market that liftoff was going to occur soon. That way, you could go "live" if you actually decide to lift off in June, September, or December.

To me, having no cap is slightly more prudent than having a high cap because, obviously, there's a little bit of tail risk that the high cap might not be high enough. I also think it's superior because, by having no cap, you're not sending any message about how big you think the usage is going to be, how much headroom you think you need so that it's not binding. It is actually very content-free in terms of how much you expect the overnight RRP to be used over the medium term.

With respect to the second question, I thought the memo made it very clear that we have two broad sets of options in terms of managing the demand for overnight RRPs. We can change the relative interest rates, or we can drain the amount of excess reserves in the system. But my own view is a little different, maybe, from others'. I think it's premature to make a precise decision about what we should do. I think all we really need to know at this point is that we have sufficient tools available to make overnight RRP usage go down faster than would occur just from balance sheet runoff and growth of currency outstanding, if we thought that a steeper decline in overnight RRP usage were desirable. It seems to me that we should see what happens after liftoff in terms of demand. We may not have any problem at all that we need to address. The take-up of the overnight RRP could be low. I think making too big a fuss about this now sends a mixed message to market participants about how committed we are to monetary policy control over the medium term.

Now, in terms of ordering them, I would think that raising the IOER relative to the overnight RRP would be your first port of call. Then the reserve draining tools, like the Term Deposit Facility and term RRPs, would be a second port of call. I'm sort of where President Rosengren is. I'm pretty averse to going to the asset sales just because I think it would be very hard to be confident that that wouldn't leak out into a bigger market reaction in terms of financial conditions. I would very much support, though, all the other people that have called for more work on a decision tree to understand, if this happens, what would we do? I think there are a lot of branches, and I think we should spend more time working out how we would proceed down these different branches.

One final thing: I thought the language in the minutes was fine. There was some discussion about the issue of "fairly soon." I think we want to tell people that it's going to come down after some period of time. So, my own view is that taking out that sentence may be "a bridge too far." I know "fairly soon" is imprecise. I'd love to come up with better language, but I don't have anything that's more precise at this point. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Fischer.

MR. FISCHER. Thank you, Madam Chair. I'm grateful to the staff for writing the memos on these topics. They lay out the issues in a clear and straightforward way. I'd also like to thank the Federal Reserve Bank of New York staff who have carried out the experiments that have gone a long way to persuading us that it will be possible to use the ON RRP tool to help achieve the target federal funds rates we set at and after liftoff.

As everyone agrees, our primary aim with regard to the use of our new method of setting the federal funds rate by using both the IOER rate and the ON RRP rate must be to make sure that we're able to insert and maintain the federal funds rate in the ranges that we decide and announce. We've been saying for years that we have the tools we need, and we've been experimenting for some while, and the credibility of the Federal Reserve would be severely set back if we pushed the button and failed to lift off as announced.

That means we have to set a very high initial aggregate cap to make sure we have the capacity we need. Now, I wish I had a probability figure to attach to the scenario in which, if we set it at $800 billion, we'll hit $800 billion, because if that was an extremely low number, on the whole it's probably better to have a smaller cap than a bigger one. But the problem is that not only can’t I get anybody to give me a number—or at least nobody has given me a number they’ll commit to—it’s that we don’t actually have any idea about how to figure out that probability. Consequently, I favor not having a cap temporarily and then coming back to one reasonably soon after we start operating the new system.

Once we’ve established the new system and learned more about the demand for it and the effectiveness of the facility, we can put a new cap in place. Between President Lockhart’s “couple of meetings” over which I hope we’ll be doing a gradual increase in rates—and that could be a year if we’re doing two or three increases—and President Dudley’s “six weeks,” I don’t know where we’re going to end up on that. Obviously it will be better if it can be sooner, but I think that we just have to accept the fact that you can’t both pre-commit strongly and pay no attention to developments that happen afterward. So we’re going to have to be flexible on this, with enough people being around the table to persuade us that we’d better not be too flexible if we want to retain our credibility.

Regarding how long to avoid having a cap, clearly at every stage it would be more convenient to have the ON RRP facility—there’s always some utility to having an extra tool in hand. But we’ll have to find a way of lowering the length of time we use it. There will be a benefit to actually getting rid of it. I think if we were going to do it one way we’d thought through, it would actually be related to the volume of reductions we plan to undertake in the size of our portfolio, because when the portfolio is so big, that’s the period when we need this. I it would, I think, be related to the size of the portfolio and not to the passage of time. But I hope we do it much more rapidly than that.

We’ve all discussed the fact that if it doesn’t work, there are other things we could do. We could increase our use of term RRPs and term deposits and, if necessary, we could begin to sell short-term assets. I would be very interested in getting some idea from the Desk, or anybody else who thinks they know, about how effective raising the IOER rate would be in enabling us to stay in the range. If we actually have a thought of doing that, we'll have to change the statement, which says the target range is going to be 25 basis points.

With regard to authorizing the end-of-quarter operations, I think we should just do it for the rest of the year and not have to have extra discussions on this issue. I would support that. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Powell.

MR. POWELL. Thank you, Madam Chair. I'll start by saying that I'm of the view that it's very important that we have good control of monetary policy at and immediately after liftoff. To achieve that, I may be in a minority, but I prefer the first option, which is to have an $800 billion cap. It seems very likely—and, I think, today got even likelier—that we're going to be lifting off into a quarter-end. I suspect the market will know at the time of liftoff that we already prepositioned $300 billion of additional capacity in term over the quarter-end, which really is $1.1 trillion over the quarter-end and then $800 billion in equilibrium. That's almost four times the highest previous between-quarter-end take-up. That seems like plenty to me. I can't give any assurances about that, but it does seem like that's enough. Again, I may be in a minority. That would be my first choice, although we also have the flexibility to take the cap off after a week or so.

If we're going to go with taking the cap off, then I would say two things. One, I would not preannounce this. I wouldn't preannounce either of these. I would announce these right at the time of liftoff. I think it's a bad idea to give too much information. For one thing, you want to overwhelm demand with supply here, and to the extent you send a long signal ahead of time, you give a chance for the demand for ON RRPs to go up. So I would wait. In addition, I think there's real risk in going without a cap for any long period of time. There are really two risks. One is that it's subject to a lot of criticism from people about being insensitive to the size of our footprint in the markets. And the second is, if you're going to keep it on for two or three meetings, there really is a chance that some kind of an event would happen—and there are plenty of them that we have talked about—that could cause a real run to the balance sheet.

So I would say, if we're going to do it, I wouldn't preannounce it, and I would do some sort of pre-commitment to imposing a cap. Again, if you lift off on the 16th or 17th, which are the dates on which the next three press conference meetings end, then I would want to pre-commit to imposing a cap no later than Date X. I don't know what Date X is, but I would want to say that so people know. First of all, there's no notice of it, and then, second, we impose a cap. And I would impose a cap that's $200 billion-ish over the non-quarter-end amount, and then I would continue doing $300 billion at quarter-end. That's what I would recommend doing, and, of course, implicit in that is that I do support now authorizing, but not specifically deciding about, testing term RRPs at quarter-ends.

In terms of the tools, I guess my takeaway is similar to Bill's, which is that we have a good set of tools available. I like lifting the IOER rate 5 or 10 or 15 basis points. It is a perfectly useful tool to me. In addition, TDF is a good tool. We can do more term. We can increase the size of the ON RRP. I think any and all of those would work.

I do really like the idea of asset sales, but I think we've kind of promised not to do them for six months after liftoff, and I don't really think we can revisit that. But let me just say that after that six-month period, I really like the idea of using asset sales to shrink the balance sheet faster than we promised to do. If it's there to be done, I would take it. Again, at that point when we've already six months earlier started shrinking the balance sheet, and things are moving along nicely, I think the risks that some have talked about are less.

I guess it goes without saying, then, that I like the proposed March minutes language, except I wouldn't so much eliminate "fairly soon" from the last sentence as make it a lot stronger, particularly if we're going to go with no cap. I would want to make some kind of a time-specific commitment to create a cap, and I wouldn't wait long. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Brainard.

MS. BRAINARD. Thank you, Madam Chair. Establishing monetary policy control should be our paramount objective at liftoff, and our deliberations suggest it is highly likely the decision to lift off will take place at a meeting with a press conference, and, thus, proximate to quarter-end.

We have seen previously that demand for overnight RRP tends to rise at quarter-end, raising the risk, in the presence of a binding cap, of a downward drift in rates following the announcement of liftoff. Moreover, our experience so far with demand for overnight RRPs has taken place with rates near zero, where the floor has likely received some support from the zero lower bound. So, we don't really know the level of overnight RRPs that will be necessary to keep the federal funds rate in our target zone at liftoff. For all of these reasons, to minimize the risk that the federal funds rate falls below our target range immediately following liftoff, it would be prudent to operate initially without a cap.

Furthermore, I don't see significant cost to the temporary suspension of a cap to balance against that achievement of monetary control. By contrast, I do believe the establishment of a permanent overnight RRP facility would raise important risks of changing the structure of money markets. But these risks will be addressed by being unambiguous from the outset, as we have been to date, that the overnight RRP facility will be available only to the extent, and for the duration, necessary to reestablish effective monetary control. For the same reason, I support planning for the phaseout of the facility. But I would be wary of trying to specify a time frame at the outset, and I also am uneasy about using the language that is proposed for the minutes on reducing the capacity "fairly soon," so as to avoid starting a debate on what, precisely, that means. Once we have gained some knowledge about the demand for overnight RRPs away from near-zero levels of interest, we can more comfortably set a cap that is credible and that has the appropriate headroom. By that point, it will also be clear that we have established monetary control following liftoff, and our credibility in this area will be less subject to doubts so that our risk tolerance can be a little greater.

If the demand for the overnight facility remains elevated for a protracted period, relative to the usage patterns that we have seen so far, I would support increasing the IOER rate and, thus, the gap between the IOER and the overnight RRP rates in order to reinforce the pull of the IOER rate. Of course, we don't know precisely how a higher IOER rate will affect the demand for the overnight facility, so we shouldn't take other policy options off the table. Should it prove necessary, I would be open to considering additional liability-side options, including term tools, in addition to raising the IOER rate, to limit the usage of the overnight facility over time. Precisely what the mix will be will depend on the circumstances, which argues for addressing this issue only after we have some experience with the new policy framework.

By contrast, I do not believe that asset sales should be on the table for this purpose, nor do I expect it will be needed in light of the range of available liability-side tools at our disposal. Putting asset sales into play could risk that being taken by markets as a signal regarding the overall stance of monetary policy. Deliberations surrounding asset sales should be determined on the basis of our overall monetary policy goals and not as a mechanism to fine-tune usage of the overnight facility. Thank you.

CHAIR YELLEN. Thank you.

MR. TARULLO. Madam Chair?

CHAIR YELLEN. Yes.

MR. TARULLO. Thank you, Madam Chair. I meant to ask this to President Williams, but now I could maybe ask both Governor Brainard and him, and possibly President Kocherlakota, too. With respect to the "fairly soon" language, I obviously strongly favor it no matter where we are going, because I do think it is so important, in the absence of a credible commitment to reduce, that we say as much as we can. All three of you, I think, at least at this point, are leaning toward suspension of any cap for the liftoff period—and the language of the revised bullets, I think, carefully refers to "capacity" rather than to "cap." I assume you are all thinking the way Vice Chairman Dudley was, that we begin with the suspension of any cap, and then at some point— Vice Chairman Dudley said six weeks, Governor Fischer thought maybe a little bit longer—we would come in and put in a cap so that we would, in fact, reduce the available capacity of the facility fairly soon after it commences policy firming. If you are thinking in those terms, isn't the way you have all described your preferences actually consistent with the language, if you are assuming that there is a suspension of the cap from the outset? Thanks. I am interested in what your views are on that.

CHAIR YELLEN. President Williams.

MR. WILLIAMS. Sure. Actually, can I, in answering your question—I feel as if I am a lawyer—go back to our Policy Normalization Principles and Plans from September 17, which states: "During normalization, the Federal Reserve intends to use an overnight reverse repurchase agreement facility and other supplementary tools as needed to help control the federal funds rate. The Committee will use an overnight reverse repurchase agreement facility only to the extent necessary and will phase it out when it is no longer needed to help control the federal funds rate." So we have already said those things very strongly and very clearly. Then, in the new addition, it says that we will "[a]llow aggregate capacity of the ON RRP facility to be temporarily elevated to support policy implementation." The issue associated with using "fairly soon" is that I think it is, first of all, unnecessary, in view of these very clear existing statements about our intentions and related things. It is really about this "fairly soon" being interpreted as being in terms of weeks or even a month or two, and having this time dimension when, really, I think our discussion is around the economics of this and what is actually happening with usage.

Now, I think that there is a way to fix this. Vice Chairman Dudley mentioned that he didn't have a replacement. It could be that we could just have in that first sentence something to the effect of "allow the aggregate capacity of the repo facility to be temporarily elevated as needed to support policy implementation," or something that may be stronger than that. It's the "fairly soon" that I think could be misinterpreted, not only in the way you're talking about, which is just logically lowering it from infinite to $1 trillion or something, but really more a misinterpretation that we are going to bring it back to a low level fairly soon. That is my concern.

CHAIR YELLEN. Can I just say that this exact language of "fairly soon" comes directly from the previous minutes. The public, or those interested in this topic, are already familiar with these words. And, you know, if we include it, the minutes of this meeting would probably indicate that a number of you have commented on essentially what you mean by "fairly soon." There would consequently be a little bit more detail in the minutes about what this means.

MR. WILLIAMS. I do think there is a difference between when we actually, in a sense, quasi-vote on something like this and when the minutes just captures the conversation. I guess I read these bullet points as something that we were all coming to an agreement on. And maybe I am misinterpreting the discussion.

CHAIR YELLEN. No, I think that is what we wanted.

MR. WILLIAMS. When I read the minutes, I always just think, does that represent what was said? Here you are really looking for us to sign on.

CHAIR YELLEN. That is right.

MR. WILLIAMS. Okay.

CHAIR YELLEN. President Kocherlakota.

MR. KOCHERLAKOTA. Yes. Thank you, Madam Chair. As I listened to the discussion around the table, I heard a wide range of what "fairly soon" meant being expressed. President Dudley talked about six weeks. I'm happy with six weeks, but I also heard people talk about six months. Those are pretty big discrepancies in what "fairly soon" would mean. So I will offer up again my preferred language, which is more bland than President Fisher would like, but here it is: "The Committee expects to reduce the available capacity of the facility at an appropriate time after it commences policy firming." I think it gets away from, if you are asked a question, what the time frame is. Well, it depends on the conditions. That is what "appropriate" means. So I will offer that as a suggestion.

MR. TARULLO. If I could just say on that, I appreciate President Kocherlakota trying to help us get somewhere in the middle. But I actually would find that alternative worse than just taking "fairly soon" out, because I am afraid it reverts to this notion we will keep using the ON RRP until we really don't think we need it any more for any purpose. But I like "fairly soon."

MR. KOCHERLAKOTA. I see.

CHAIR YELLEN. Okay. So let's go to the proposed March minutes language and see if we can reach agreement, and there are several issues outstanding. First of all, President Kocherlakota proposed a change in the opening paragraph, in which it says, "the operational approach the FOMC will use," to "intends to use." And, in the subsequent sentence, you also proposed replacing "will" with "intends to." Can I ask, is there anyone who would be unhappy if we change "will" to "intends to" in both places? [No response] Okay. So let's make that change in both places, from "will" to "intends."

And now we have the final sentence of the third bullet point. On this, we have views on both sides. I guess our options are keep it as is and leave "fairly soon" in, or, I suppose the alternative you would see, Governor Tarullo, would be to remove the sentence entirely?

MR. TARULLO. I think that is what President Williams proposed. I obviously prefer to keep "fairly soon" in, but I think I would prefer just deleting it to the substitution of "appropriate time."

CHAIR YELLEN. Deleting the entire sentence.

MR. TARULLO. Yes.

CHAIR YELLEN. Okay. Well, let me ask for a show of hands. How many people prefer leaving the sentence in and keeping it as is? [Show of hands] And how many people prefer to get rid of the sentence? [Show of hands]

VICE CHAIRMAN DUDLEY. I agree with what John said, that we have already said it. And if we don't like the "fairly soon," why not just take the sentence out altogether?

MR. FISCHER. I have a two-hander.

CHAIR YELLEN. Yes, go ahead.

MR. FISCHER. I don't think, when we make a decision, everybody looks back to every previous decision we have made on it and says, "Aha, they committed to this thing some months ago, which they have somehow left out this time." And, the argument was made that we said it when we issued the normalization principles.

CHAIR YELLEN. Well, this is an augmentation of that policy. It says explicitly it is something we are adding to those principles.

MR. FISCHER. But they do not see that, though, unless we publish the whole thing.

CHAIR YELLEN. That is correct.

MS. BRAINARD. Why can't we just reiterate something like, "The Committee expects to use the facility only to the extent and for the duration necessary to." I mean, why can't we just leave in that old language, which is, I think, a much more precise characterization of how I think we are deploying this facility.

MR. TARULLO. Well, if we are, then I am opposed to the facility, I think, because that suggests, again, that it is going to be used—it is the instrument—which is the direction in which we have been headed. And, I think the "appropriate time" language, or the "as to the extent necessary," reinforces the sense that it is ON RRP that is going to get us monetary policy control. That is why I am worried about the language. I don't think that's your intention, but I'm afraid that is the way it's going to be read.

MS. BRAINARD. That is certainly not. Quite the reverse.

CHAIR YELLEN. President Mester.

MS. MESTER. My understanding is the final bullet point is going to be added to what we have already done in the normalization principles. Is that right?

CHAIR YELLEN. Well, I don't think there is a plan to include the previous normalization principles in the minutes when this appears. So while it says explicitly that it is an augmentation, my guess would be it will appear on its own in the minutes.

MS. MESTER. Well, okay, that is something that maybe we should think about. But the first part of the last bullet point says will be "temporarily elevated." Isn't "temporarily" enough to assuage this? I mean, "temporarily" is telling you that the intention is for it to be elevated for a temporary period—unspecified, I grant you that. Maybe that is enough.

MR. TARULLO. If you go back, President Mester, to the dynamic that I hypothesized, at each meeting it will always seem as though keeping it in place for another meeting is the best way to maintain precision in monetary policy terms, then it can just elongate. And because we can't make a credible, firm commitment to remove it, for the reasons a lot of people have given, I think it is important to reinforce, in as many ways as we can, that it is going to be temporary. The best way to reinforce that is actually to reduce it, and that will take care of all of these problems. But I will confess to concern about how quickly we will get to that point, if we are not being reminded that we have said that we are going to try to get rid of it fairly soon, and I actually regarded the ambiguity as a bit of an advantage here.

CHAIR YELLEN. Thomas?

MR. LAUBACH. Madam Chair, would it be helpful if perhaps some of the staff offered to think some more, between now and tomorrow morning, about whether there are ways of bridging this gap between the two views? We may offer up some proposals that may be futile, but at least we will try.

CHAIR YELLEN. Simon, Do you want to give that a shot?

MR. POTTER. There was six weeks, eight months, and two rate increases.

MR. FISCHER. Two or three rate increases, right?

MR. POWELL. Two or three rate increases could be a year.

MR. FISCHER. Well, I would like some judgment to be used, which I think Governor Tarullo doesn't want, but I don't see how you can do it without asking, "How necessary is it?" It's clear that we cannot say, "Well, it will help." It will always help. It will never be totally useless. That's not good enough. There's got to be a positive value to getting rid of it.

CHAIR YELLEN. That leaves you as wanting to keep this?

MR. FISCHER. Yes, keep this for some time. I can live with "fairly soon" and so forth.

CHAIR YELLEN. Okay. Thomas, if you think there's a chance you could come up with some language, why don't we defer until tomorrow?

MR. LAUBACH. All right. Tomorrow, first thing.

CHAIR YELLEN. I would say that's fine.

MR. POTTER. The quality of what we come up with might be variable, though.

CHAIR YELLEN. Okay. It was pretty evenly divided.

MR. POTTER. I'd emphasize that it says "the Committee expects." It's not "intends," it's "expects."

MR. FISCHER. What was the total number of votes? I had the sense that we had more than 10 voting on that one.

CHAIR YELLEN. I think I counted, one more person in favor of keeping it than removing it.

MR. LAUBACH. In this instance, remember that the minutes will note, just like with the normalization principles, that this is a straw poll among participants.

MR. FISCHER. Okay.

CHAIR YELLEN. Right, yes. President Bullard.

MR. BULLARD. Madam Chair, the second sentence in the third bullet doesn't make sense to me. I think it may be used to be a bullet and then got moved to become part of the sentence. If we're going to redo this, why don't we also redo that? I didn't know we were going to get so precise on the language of the minutes.

MR. FISCHER. You mean actually worry about grammar?

CHAIR YELLEN. What's wrong with the second sentence?

MR. BULLARD. "Adjust the IOER . . .". It is not a sentence.

CHAIR YELLEN. "Rate."

MR. FISCHER. It is all written that way.

MR. BULLARD. That would be fine if it was a bullet.

MR. FISCHER. This is a continuation of "intends to adjust." "Intends to" is there.

MR. POTTER. Fix the grammar, right.

CHAIR YELLEN. Okay. We'll come back to this tomorrow. Let's see if we can resolve the final issue that we need to today, which concerns the resolutions on term RRP testing. If you have the sheet with options 1 and 2 in front of you, option 2 at the bottom is the one that would authorize term RRP testing over quarter-ends for the remainder of the year. Not everyone weighed in on that, but I did hear during our go-round a considerable amount of support to approve authorizing testing through year-end. Would anyone like to comment on that? [No response]

MS. BRAINARD. I have a question, Madam Chair.

CHAIR YELLEN. Yes.

MS. BRAINARD. I don't understand. Suppose we temporarily suspend the cap, and we decide to lift off at one of these quarter-ends. Is this an authorization to also do term RRP at that quarter-end, and would we make that decision intentionally at that point? Or is this testing that simply would take place whether or not we've got unlimited overnight RRPs?

MR. POTTER. We would look at the circumstances. We would contact the Chair. The Chair would decide on the terms, and we would be informing you. You would have the chance, as always, to object to any operations that we do. We're just putting the authorization in place, as Lorie tried to explain. Whether we would necessarily use that capacity would depend a lot on the situation we're in.

MS. LOGAN. We make the announcements that the term transactions are going to take place at the beginning of the month, which would be before the meeting, but if you lifted the cap, we could run very small operations on the dates we had already announced or have a very low cap to adjust for what you've decided. But if you don't end up lifting off at that meeting, we would conduct them as we have been. We would continue to make the announcement at the beginning of the month that they would take place on certain dates, but we may adjust the sizes based on the decision you make at the meeting.

MR. POWELL. I want to make sure I understand. We're going to announce these at the beginning, but we don't announce the amounts at the beginning of the month?

MR. POTTER. We would have announced, and we would say "up to" and give them the provisional schedule.

MR. POWELL. Right. We're committing before the meeting. The meeting doesn't take place at the beginning of the month.

MS. LOGAN. Right, but we would do the "up to," and markets would be comfortable with us adjusting those once they have known the decision at the meeting.

MR. POWELL. We could do zero.

MS. LOGAN. We could, or for credibility purposes, we may want to run them in very small amounts just because we committed to running something on a date. You could cancel them, but I don't see it would be a large cost for just holding a very small term operation.

MR. POTTER. We could also run them at the same rate as the overnight RRP, and if people want to use it, they could at that point. There's a lot of flexibility. Actually, it would be at some point quite nice to say we said "up to," but then have an operation that's smaller than that and just indicate that it is flexible in that way.

CHAIR YELLEN. Are there any further comments?

MR. POWELL. May I just add one thing? If you preannounce that you're going to waive the cap, which I don't think we should do—

CHAIR YELLEN. I thought we weren't going to do that. I thought the plan was that we would not preannounce waiving the cap.

MR. POTTER. Judging what was said today, you would be announcing that at a meeting at which liftoff happens.

CHAIR YELLEN. We would announce it.

MR. POWELL. At the meeting. Okay. All right.

MR. POTTER. One-day preannouncement.

CHAIR YELLEN. President Lacker.

MR. LACKER. As I noted earlier, I'm going to decline to support term testing.

CHAIR YELLEN. Okay. Then let me put forward option 2 testing of authorizing term RRPs at quarter-ends through the end of the year. Do we need to vote on this?

MR. LUECKE. It is a Committee vote.

CHAIR YELLEN. Okay. This is a formal vote. All in favor. [Show of hands] All opposed. [Show of hands] Okay. Option 2 carries, and we will return tomorrow morning to the bullets and see where we are on that.

MR. KOCHERLAKOTA. Madam Chair.

CHAIR YELLEN. Yes.

MR. KOCHERLAKOTA. I'd like to offer a suggestion, which is costless for me, as you'll hear, but right now it seems like the fact that the press conference meetings are taking place so close to quarter-end is a cost in terms of Committee decisionmaking. There is a chance that liftoff will not take place until 2016. As you and the staff think about scheduling meetings for 2016, I think this is a reason to potentially move meeting dates so that they're not two weeks before quarter-end.

VICE CHAIRMAN DUDLEY. That's really hard to do, given all the other things around the world that are set up.

CHAIR YELLEN. Incredibly difficult.

MR. KOCHERLAKOTA. I'm just offering it as an observation.

VICE CHAIRMAN DUDLEY. In an ideal world you might be right, but I think it's really hard to do.

MR. KOCHERLAKOTA. As I mentioned along with the observation, it's absolutely costless for me. [Laughter]

CHAIR YELLEN. We will keep that in mind. No promises.

MR. KOCHERLAKOTA. Thank you.

CHAIR YELLEN. Okay. The Board meeting has just ended. Let's move to our next agenda item, and I am going to call on Steve Kamin to begin.

MR. KAMIN.[4] As we did in January, David and I will be switching positions in the order, in light of the prominent role of international developments in jerking around the U.S. economy. I'll be referring to the materials titled "The International Outlook."

As shown in panel 1 of that exhibit, our projection of total foreign GDP growth—the black solid line—is not much changed from the January Tealbook. To be sure, the outlook is a little weaker in the next few quarters. The fall in oil prices looks to be taking a greater toll on Canada's economy than we initially reckoned, and we now believe Brazil will sink a bit further into its morass before finally emerging. Additionally, data for China and Korea came in weaker than we'd expected. But we are still looking for total foreign economic growth to rise to 3 percent, roughly its trend pace, by the end of this year, supported by continued monetary accommodation abroad, still-low energy prices, and currency depreciations against the dollar.

The recovery of the euro area, shown in panel 2, is a big part of the firming in aggregate foreign growth. We've nudged up our euro-area forecast since January. Part of this reflects the ECB's quantitative easing program, which was announced just after we put the January Tealbook to bed, and was more aggressive than we had anticipated at that time. Additionally, both fourth-quarter GDP growth of 1.3 percent and more recent readings on production, sentiment, and consumer spending have exceeded our expectations. Accordingly, if nothing bad happens, the euro area may well be on track to reduce its resource slack and add to global demand over the next several years.

Unfortunately, that is a pretty big "if." Right now, the Greek government is running out of money and is in difficult talks with its European creditors on an infusion of new funds to avoid defaulting on debt payments coming due soon. Even if Greece secures this near-term financing, it still must negotiate a new multiyear assistance and reform package to keep it afloat over the longer term. Failure of these talks could lead to a default on the government's debt, the loss of ECB support for the Greek banking system, and, potentially, Greece's exit from the euro area. With the stakes being so high, we assume the two sides will eventually reach agreement. During the interim, however, brinkmanship amid very tough negotiations will likely cause periodic flare-ups in financial stress that will weigh on the euro-area economy. So far, markets other than that of Greece have been remarkably complacent, perhaps because they assume that Europe's strengthened firewalls, together with the ECB's new government bond-buying program and European banks' reduced exposure to Greece, will suppress any spillovers from a Greek exit. But we expect that

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

complacency to erode as Greece steps closer to the cliff and investors give more thought to some of the catastrophic risks described in an alternative simulation in this month's Tealbook.

Beyond Greece and the outlook for foreign economic growth more generally, a number of global developments are exerting an unusually large influence on the U.S. economy. Our near-term forecast for Brent oil prices, shown in panel 3, moved up about $10 per barrel since the time of the January Tealbook, as sharp declines in rig counts reinforced expectations that oil production would decelerate. Since we put the March Tealbook to bed, spot Brent oil prices have fallen back toward their January lows (not shown) as market participants focused on growing inventories. All told, these prices remain very low, boosting prospects for economic growth here and abroad and, as shown in panel 4, depressing already low headline inflation rates.

We have inflation moving back up as the pass-through of previous declines in oil prices wane. In principle, central banks should see through such transitory dips in inflation. But concerns that falling inflation would destabilize inflation expectations have led several central bank to ease policy in recent months, including the Bank of Japan and the ECB. The ECB's decisions, in turn, have prompted a rush of rate cuts—including to below zero—in neighboring countries seeking to avoid appreciation of their currencies. Low prices for oil and other commodities have led the central banks of several commodity exporters, such as Canada and Australia, to provide greater monetary accommodation. Finally, a number of emerging market countries, notably China, loosened policy in response to varying combinations of weak data and falling inflation.

Panel 5 provides a crude summary measure of foreign monetary policy actions in recent years. For 37 countries, any monetary policy action—be it a rate change, change in reserve requirements, or asset purchases—is assigned a plus-one (+1) for a tightening and a minus-one (-1) for a loosening. These are then aggregated across countries, and the cumulative policy changes are displayed over time. By this admittedly crude measure, from late 2011 through 2013, foreign monetary conditions became steadily more accommodative, then they leveled off for a spell but, since last summer, have become still easier.

Monetary easing abroad exerts a number of influences on the U.S. economy. First, and perhaps most prominently, it pushes up the dollar, which would tend to contract U.S. exports and production. As shown in panel 6, the combination of continued relatively robust readings on the U.S. economy, mounting anticipations of Fed liftoff, and actions by foreign central banks have pushed the broad real dollar exchange rate—the black line—up some 4 percent since the time of the January Tealbook. Going forward, we have come to believe that a continuing market focus on prospective divergences in the prospects for monetary policy here and abroad, combined with ongoing anxieties about foreign economies, will push the dollar up further over the rest of this year. Our hope is that by capitulating to the trend of recent months and actually predicting additional appreciation, we will cause the dollar to finally top out and start moving downward. But, assuming our forecast actually materializes, the broad real dollar, measured over the duration of the forecast period, will average 6¼ percent above its level in the January Tealbook. This is a historically outsized revision to our projection. Even so, I will agree in advance that, in view of current market dynamics, there is a plausible risk that the dollar may rise considerably higher than we are predicting.

While, as David will discuss, the higher dollar exerts appreciable drag on the U.S. economic outlook, foreign monetary easing has positive spillovers to the United States through two other channels: It raises demand abroad, thus boosting our exports, and it lowers U.S. bond yields, thus boosting our domestic demand. To focus a bit more on this latter channel, panel 7 shows that major economy yields have long been well correlated, and the rundown in these yields since the beginning of 2014 is no exception. A note circulated to the Committee last week reviews some of the reasons for the simultaneous decline. First, yields here and abroad may be responding to common factors, such as fears of secular stagnation or heightened demand for safe assets in response to recent regulatory initiatives. Second, investors may worry that weakness abroad may directly restrain the U.S. economy, leading to lower growth, inflation, and thus bond yields. Third, anxiety about tail risks abroad—Greek exit or a hard landing in China, as well as anxieties about the global outlook more generally—may be fueling safe-haven demand for U.S. Treasury securities and depressing our term premiums. Finally, and looping back to the beginning of this discussion, lower interest rates abroad may be encouraging investors to switch to higher-yielding U.S. assets, thus depressing our term premiums through portfolio-balance channels.

These explanations for the low level of U.S. yields may all be valid to some extent, but they have different implications for the future path of yields, the dollar, and monetary policy. If term premiums and yields are low because of portfolio-balance spillovers from accommodative foreign monetary policies, those effects are likely to depress U.S. yields for several years; all else being equal, unless a further rise in the dollar fully offsets the stimulus from these lower yields, the Fed's policy rate may have to rise faster to achieve the desired tightening of U.S. financial conditions. Conversely, if low yields reflect worries about the foreign outlook and those worries turn out to be well founded, Federal Reserve policy may need to be looser in response. Finally, a more complicated and ambiguous case is posed if our relatively benign baseline forecast for the global economy materializes and risk events pass quietly: Longer-term yields in the United States and elsewhere may rise quickly as risk premiums unwind, which would call for easier Federal Reserve policy, but sentiment might improve and the dollar could fall, which would call for tighter policy. In light of our uncertainties regarding the relative strength of the factors pushing down U.S. yields at present, we will be watching global financial markets very carefully for clues about future developments. David will now continue our presentation.

MR. WILCOX.[5] I'll be referring to the exhibit creatively titled "Material for the U.S. Outlook."

At long last, I'm finally going to take a leaf out of all of your books and declare that our forecast hasn't changed all that much since either January or December. Part of the reason I'm going to say that is that, as I'll show, it happens to be more or less partly true. The small revisions that we've made to the domestic outlook lately mostly reflect the surprising extent of the appreciation of the dollar and the plunge in oil prices. The stronger dollar causes us to trim a little out of our forecast for the growth of real GDP over the next few years, while the steeper net drop in oil prices than we'd expected as of the December meeting put a bigger dent in near-term topline PCE inflation; that said, core PCE inflation has been running below forecast, too. While we haven't yet seen fit to alter our baseline forecast for the longer-term trajectory of inflation, we are keeping a close eye on a few shreds of evidence suggesting that longer-term inflation expectations may have crept down some in recent years.

Turning to the specifics: The labor market seems to have been on a stronger course than we anticipated in January. Average monthly job gains as measured in the establishment survey have been running about 50,000 per month stronger than we had expected. Although the unemployment rate in February was one-tenth higher than we projected, the employment-to-population ratio—which we think is giving a better fix on labor market slack at present—came in a few basis points higher than we had forecast as a result of slightly better-than-expected labor force participation.

On the other hand, the news outside the labor market has not been as favorable. For one, the recent indicators of GDP have been disappointing on the whole. A good chunk of the shortfall relative to expectations has been in net exports. But given the appreciation of the dollar, we are more cautious than we normally would be about writing that development off as transitory. The most recent news about consumer spending has been mixed, with the QSS pointing to another bump up in medical care spending in the fourth quarter. But the weak path of retail sales now estimated for the past three months is a little puzzling, at best. Moreover, yesterday's industrial production release was pretty drab, with manufacturing production estimated to have posted another small decline in February, and the figures for December and January were revised down. All told, manufacturing IP now looks to be on track for zero growth in the first quarter. This morning's data on housing starts and permits were pretty bleak on their face, with single-family starts and permits both posting large declines in February—considerably underperforming relative to our expectations that they would roughly tread water in the near term. Adverse weather is the easy explanation, and, indeed, it probably helps to explain some of the recent weakness in a range of these indicators, but we had been watching our weather metrics carefully and had not anticipated very substantial effects. As shown by the black dot in panel 2, we now estimate real GDP growth in the first quarter of 1¼ percent, and that was prior to the news on housing starts and permits. Folding in that news from the

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

housing market, we'd take another tenth or so out of that estimate, and similarly for the second quarter. To be sure, the confidence interval around our estimate, even for the quarter just concluding, is astonishingly wide, but I would hasten to point out that the risk is two-sided.

Altogether, the labor market looks to have been at least as strong as we had anticipated, and perhaps a little stronger, while the near-term GDP picture has been disappointing. In the Tealbook, we reconciled these two developments by marking down structural productivity in history by enough to leave our estimate of the output gap roughly unrevised in the current quarter.

Panel 3 gives you a broader perspective on the issue of slack by providing updated estimates of three different measures of resource utilization gaps that we follow. The dotted blue line shows the judgmental estimate that is reflected in the Tealbook baseline. The red line shows the production function version of the output gap as estimated in EDO, one of the DSGE models that we maintain at the Board. Finally, the black line—labeled FRB/US—plots an estimate of slack that combines the information from a variety of production, income, labor market, and price indicators, while explicitly allowing for measurement error. The Tealbook and EDO models' point estimates suggest that resource utilization has nearly recovered to its sustainable position, while the FRB/US measure suggests that it's already there.

Reverting to panel 1, you may be a little puzzled to see the unemployment rate revised up by such a slight amount, in view of our more-guarded outlook for the path of real output. The reason for the small revision to the unemployment rate is that we extrapolated forward the slower pace of structural productivity growth to the tune of 0.1 percentage point per year. At the margin, this revised assumption will allow a given amount of real GDP growth to generate a slightly greater amount of labor market improvement and thus is designed to better center the baseline forecast in light of the persistent misses on the unemployment rate that we've had during the past couple of years. If we had left our supply-side assumptions unchanged in this projection, the unemployment rate would have revised up another 0.2 percentage point or so over the medium term.

I should also briefly mention our deliberations over two other assumptions that we use to calibrate the longer-term forecast. First, we revised down our estimate of the long-term equilibrium funds rate by ¼ percentage point. As was reflected in the discussion we provided in the Tealbook, the confidence intervals surrounding this parameter are a mile wide, but we view the lower rate as better balancing the risks in light of our judgment that probably not all of the extraordinarily low level of long-term rates around the globe reflects low term premiums, and that lower equilibrium interest rates may have been playing a larger role in driving the downtrend in recent years than we previously thought.

We also debated whether to lower our estimate of the natural rate of unemployment from its current level of 5¼ percent, which is the same level that we think prevailed just prior to the Great Recession. At least two factors militated toward making such a downward revision. First, younger workers tend to have higher unemployment rates, and since the eve of the financial crisis and recession, the share of these workers in the labor force has declined. Second, workers at the margin of moving onto disability rolls also tend to have higher unemployment rates, and the number of individuals reporting themselves as out of the labor force because of a disability has increased significantly since 2007. However, moving to assume that the natural rate is lower now than we think it was before the recession felt distinctly uncomfortable, especially in view of the historically large increase in permanent job losers, the fact that the long-term unemployed still make up an unusually large share of overall unemployment, and the suggestive evidence that matching in the labor market may still not be as efficient as it was before the crisis. Furthermore, in light of how flat we think the Phillips curve is, wage and price inflation are doomed not to be very informative in this regard. Finally, we think we've probably had some tendency in the past to adjust our estimate of the natural rate to hew too closely to movements in the actual rate of unemployment. In the end, after many hours of debate, we left our assumption unchanged at 5.2 percent, though with no pretense of having settled the issue.

Panels 4 and 5 summarize the inflation outlook. As shown in panel 4, the recent upturn in crude oil prices that Steve discussed led us to temper the decline in headline PCE inflation that we are projecting for the current quarter, relative to our January projection. However, as you can see from panel 5, core PCE inflation has come in softer than we expected in January. Most of this miss was attributable to lower-than-expected medical services and core goods prices; because we don't expect medical services prices to continue to surprise to the downside and we continue to expect that goods price inflation will pick up as import prices accelerate, we did not carry forward the downward surprise to core inflation beyond the near term.

Over the remainder of the medium term, the inflation forecast is essentially the same as in recent Tealbooks, featuring a slow upward creep back toward your 2 percent objective.

The staff's medium-term inflation forecast is predicated on the assumption that longer-term inflation expectations are well anchored—an assumption that we have maintained in the latest projection. Given the central role of inflation expectations in our analytical framework, we have been keeping our eyes peeled for evidence that those expectations might be starting to come unmoored, either on the upside or on the downside. Panel 6 presents some data from the Survey of Professional Forecasters that we found a little disquieting in that regard. The black line shows the SPF's median 10-year average expected inflation rate for headline PCE price inflation. This measure, like the Michigan survey's long-term expected inflation measure, has remained pretty flat in recent years. However, as shown by the red line, the SPF long-term CPI projection has moved down more noticeably in recent years and most recently has dipped to 2.1 percent, its lowest level ever. Thus far, we are not inclined to view this development as persuasive evidence that longer-term inflation expectations are starting to deteriorate. First, the most recent decline appears to reflect the change in the composition of the survey panel; holding the panel's composition constant, the first-quarter median response for the CPI forecast would have remained at 2.2 percent. Second, a measure that focuses on CPI expectations 6 to 10 years ahead has declined less over the past few years; we would expect that respondents' projections over this horizon would probably give us a better read on what they view as inflation's longer-term anchor. Third, this discussion is putting a fine point on small changes in the expectations of professional forecasters, who are not, after all, the people setting wages and prices throughout the economy. But, by the same token, we are wary of taking too much comfort from the stability in the PCE responses because it could be that the professional forecasters are reluctant to be seen as betting quite so overtly against your 2 percent objective. All told, we will certainly be keeping a close eye on these and other measures of inflation expectations going forward. Don will continue.

MR. KIM.[6] I will be referring to the packet labeled "Material for Briefing on the Summary of Economic Projections."

Exhibit 1 shows the broad trajectories of your forecasts under your individual assessments of appropriate monetary policy. The top panel shows that most of you project that real GDP will grow somewhat faster in 2015 and 2016 than over the longer run, and at or near its longer-run rate in 2017. Most of you project that the unemployment rate, shown in the second panel, will continue to decline through 2016, and all of you project that, by the fourth quarter of 2017, the unemployment rate will be at or below your individual judgments of the longer-run normal rate of unemployment. As shown in the third panel, headline PCE inflation is projected to decline this year but rise notably next year; all but four of you project that headline inflation will be equal to or within 0.1 percentage point of its goal by the end of 2017, and only one participant projects that inflation will deviate by more than 0.2 percentage point. Much of the movement in headline inflation from 2014 to 2015 and from 2015 to 2016 reflects swings in food and energy prices, inasmuch as the final panel indicates only a slight decline in core PCE inflation this year and a gradual rise over the remainder of the forecast period.

Exhibit 2 compares your current projections with those in the December Summary of Economic Projections and the March Tealbook. As noted in the top panel, most of you marked down your forecasts of real GDP growth over the forecast period. Many of you cited the appreciation of the dollar and recent weakness in spending data as reasons for those revisions. Even so, as shown in the second panel, the central tendencies of your forecasts for the unemployment rate shifted down by roughly 0.1 percentage point throughout the forecast period, with many of you noting the greater-than-expected decline in the unemployment rate in recent months. More than half of you also lowered your projections for the longer-run normal rate of unemployment, with the central tendency about 0.2 percentage point lower at 5.0 to 5.2 percent. Consequently, only one of you now projects that the unemployment rate will go below its longer-run normal level by more than 0.2 percentage point, down from six in December. As the bottom panels indicate, all of you marked down your

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

projections for headline and core PCE inflation this year, and about half of you revised down your projection of core PCE inflation in 2016 by 0.2 percentage point or more, citing soft inflation data in recent months and declines in commodity and import prices.

The Tealbook forecasts for economic growth and inflation are near the bottom of your central tendencies over the projection period, while the staff's projections for the unemployment rate are about at the upper end of your central tendencies over the projection period.

Exhibit 3 provides an overview of your assessments of the quarter in which you currently judge that the first increase in the target range for the federal funds rate will be appropriate and of the economic conditions you anticipate at that time. As shown in the top panel, a majority of you view the second or third quarter of 2015 as the most likely time of liftoff. More than half of you have pushed back your likely time of liftoff by one quarter since December, with many citing the fact that inflation continues to run well below target. The bottom-left panel plots your views on the unemployment rate and core inflation at the time of liftoff. As shown in the plot, your projections for the unemployment rate at the time of liftoff range mostly between 5.2 and 5.4 percent, while your core inflation projections are mostly clustered between 1.1 and 1.4 percent. Compared with the December scatterplot shown to the right, you now expect liftoff to occur when core inflation is about 0.4 percentage point lower and when the unemployment rate is about 0.2 percentage point lower than you envisioned in December. All but three of you project that the unemployment rate at the time of liftoff will still be above its longer-run normal level, and all but one of you project that core inflation at liftoff will be well below the Committee's longer-run objective for headline inflation of 2 percent. However, all of you project that the unemployment rate will move to or near its long-run level at the end of 2016, and all but one of you project that inflation will be much closer to 2 percent by the end of 2016 than at the time you project lifting off.

Exhibit 4 provides an overview of your assessments of the appropriate path for the federal funds rate at the end of each year of the forecast period and over the longer run. The median funds rate projection now stands at 0.63 percent at the end of 2015, 1.88 percent at the end of 2016, and 3.13 percent at the end of 2017. A sizable majority of you revised down your view of the appropriate federal funds rate throughout the forecast period, though, in many cases, by modest amounts. The median projections declined by 50 basis points in 2015, 62 basis points in 2016, and 50 basis points in 2017. Several of you expressed a preference for a more gradual removal of policy accommodation after liftoff than you had projected in December, citing uncertainties regarding the inflation outlook and the longer-run values of the unemployment rate and the equilibrium real rate; still-present headwinds, including the weaker global economic outlook; and uncertainty about the economy's response to policy normalization after a prolonged period with the policy rate at its effective lower bound. Seven of you also revised down your projection of the longer-run nominal federal funds rate, typically by 25 basis points. Though the median is unchanged, the central tendency narrowed from 3.5 to 4 percent in December to

3.5 to 3.75 percent now. A large majority of you project that, at the end of the year in which you first see the unemployment rate at or close to your estimate of its longer-run normal level and inflation at or close to 2 percent, the appropriate level of the federal funds rate will remain below your individual judgment of its longer-run level. This supports the last sentence in the draft FOMC statements, which says that "even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

As in December, all of you project levels of the federal funds rate over the next couple of years that are below the prescriptions of a noninertial Taylor (1999) rule given your projections for core inflation and other economic variables, indicating that you do not see the Taylor rule as likely to prescribe appropriate policy for the next few years. The medians of these prescriptions, plotted as red diamonds, and the central tendencies, plotted as whiskers, have shifted down since December. For 2015, the gap between your projections and the rule's prescriptions has narrowed slightly, on average, primarily reflecting the rule's response to the downward revision in your core inflation projections; in 2016 and 2017, this gap is marginally wider, on average, than it was in December.

The final exhibit shows your assessments of the uncertainty and risks surrounding your economic projections. As shown in the figures to the left, most of you continue to judge the level of uncertainty about your individual projections of GDP growth, the unemployment rate, and inflation as broadly similar to the average level over the past 20 years. As shown in the panels to the right, most of you continue to see the risks to real GDP growth and the unemployment rate as broadly balanced, though one more of you now views risks to growth as weighted to the downside. As reported in the third and fourth panels on the right, eight of you now see risks to inflation as balanced, while another eight see those risks as weighted to the downside. Recent declines in commodity prices and the appreciation of the dollar were noted as factors that could place greater downward pressure on prices than currently embedded in your forecasts.

CHAIR YELLEN. Governor Tarullo.

MR. TARULLO. Thank you, Madam Chair. Steve, in your projections of the paths of real dollar indexes, what assumption have you made on Chinese foreign exchange policies?

MR. KAMIN. We're assuming that China's exchange rate is flat through the end of the year.

MR. TARULLO. Flat? Against the dollar?

MR. KAMIN. Flat against the dollar for the remainder of the year, and then, after that, they allow it to again start appreciating at a very slow, around 2 percent, pace.

MR. TARULLO. Relative to the dollar?

MR. KAMIN. Again, relative to the dollar. As you're thinking it through, the effect so far has been that even though they have actually allowed their renminbi to depreciate slightly against the dollar—very, very minimally, as Simon is using finger language to point out—over the past six months, because the dollar has been rising against most other currencies, the RMB also has been rising. Our view is that, at a minimum, they'll continue to depreciate it very slightly further, but our working assumption in our projection is to keep it flat until the end of the year.

MR. TARULLO. But if one believed that they were likely to adjust their policy so as to continue to have renminbi appreciation on a global trade-weighted basis, but to depreciate somewhat against the dollar, would that change, in a nontrivial way, the projections of real dollar indexes?

MR. KAMIN. Yes. Let's put it this way. They've already been doing appreciation, but if they basically wanted less broad, real trade-weighted appreciation than they have now been getting, then, if the dollar continued to rise at its previous pace, they would have to depreciate against the dollar more strongly in order to make that happen. Right now their trade-weighted RMB has appreciated very strongly because they're following the dollar up.

MR. POTTER. They've moved up their fix, and the trading band has widened. One choice would be to widen that trading band and just let the CNY trade at the top part of that. Remember, it's not a convertible currency.

MR. TARULLO. Right, exactly.

MR. KAMIN. If you were thinking that somehow they wanted to go back to a balancing trend, they're actually already doing that in a big way, but just not deliberately.

MR. TARULLO. Lael, do you want to follow up?

MS. BRAINARD. To the extent that they widen the band because it's already up at the top of the band and they slow, essentially, the rate of appreciation against the world, how much does that matter to us in terms of our trade, and how much does that affect our GDP forecast?

MR. KAMIN. It could be material because China accounts for about 20 percent of our trade-weighted dollar, and so a reasonably large change in the pace at which the RMB moves against the dollar would, indeed, have important implications for the overall value of the dollar. Now, I will say that the very small depreciation of the RMB against the dollar that they've been doing lately, as well as the relatively small appreciation of the RMB against the dollar that had been taking place in previous periods, are all very much second order compared with the dollar's movements against other currencies, like the euro and others. For plausible changes in the rate in which they would change the RMB's value against the dollar, it might not make much of a difference, but if they wanted to make some big changes, then it certainly could have material implications.

CHAIR YELLEN. Governor Fischer.

MR. FISCHER. Just trying to understand, I am never quite sure which way is up with dollar indexes. A 30 percent gap has opened up between the emerging market economies and the advanced foreign economies. What does that mean? That the advanced foreign economies have depreciated by 30 percent against the emerging market economies?

MR. KAMIN. Yes. Basically, the foreign industrial countries have depreciated against the dollar more than have the emerging market currencies. Therefore, the AFE currencies must have depreciated relative to the emerging market currencies.

MR. POTTER. Japan and the euro area have depreciated a lot in the past year.

MR. FISCHER. The emerging market economies, relative to us, still look more or less where they've been for the past five, six years?

MR. KAMIN. Well, harkening back to our earlier discussion, first of all, one of the reasons why the aggregate of EME currencies has not changed so much is because China is in the aggregate. China is about 20 percent of the trade-weighted dollar. EMEs are around, if memory serves, 55 percent of the trade-weighted dollar. China accounts for a big hunk of the EME aggregate, and, therefore, when you look at non-China EME currencies, they've moved much more. They've depreciated much more against the dollar than you would see just from that picture.

MR. FISCHER. Right. Then the other question was for David. David, I'm never quite sure when there's a move in the mean of some expectation. For example, for the average expected CPI inflation for the next 10 years from the Survey of Professional Forecasters was 3.3 percent in 1995, and it is now approaching 2 percent. You look at the rate of change, and one could look at the level. I'm not quite sure. What makes you look at the rate of change?

MR. WILCOX. Part of why we're looking at the profile of responses is because an important touchstone of our projection has been that inflation expectations are anchored. That's been our statement, full stop. We've maintained that assumption in this current projection, and we feel obligated to be vigilant—to be on the lookout for evidence that could call that into question. The CPI responses haven't yet caused us to throw in the towel on that touchstone we used to construct the expectation, but it's not going to take a lot more downward movement there to relent on that story or begin to qualify it more seriously than we have.

The level isn't particularly worrisome at this point, though I think one could have a vigorous conversation about that—well, so let's have that conversation for just a second. For these professional forecasters, suppose it's really the CPI forecast that matters for their clients' interests. Historically, a more normal spread between the CPI and the PCE index has been something more in the neighborhood of 30 basis points than 10. If you took that historical average spread from the 2.1 percent that they're currently reporting, you'd have something that's in the neighborhood of 1.8 percent for a longer-term PCE inflation expectation. In level terms, to go to your question, that wouldn't be particularly worrisome because that's where we, at the moment, have pegged our longer-term inflation expectations. But, as I suggested, any further downward movement from there would begin to give us some greater concern.

MR. FISCHER. Okay. Well, I suggest we follow this up when the meeting concludes because I have a feeling that we want to make progress.

MR. POTTER. Can I just say that in the survey that we do with dealers which asks explicitly for their assessment of the five-year, five-year-forward expectation—we're not seeing that much of a change. We've seen a little bit, and these are pretty similar people to those who submit to the Survey of Professional Forecasters.

MR. WILCOX. Indeed. We, too, have backed out the longer-term, the 6-to-10-year expectations from the SPF regarding inflation in the consumer price index, and in the SPF database, they too show less downward movement. There's always a question. What I don't want us to fall subject to is the proverb about the frog who gets boiled by the water whose temperature progressively moves up. It feels like the water temperature has just moved up from

72 degrees to a few degrees above that in terms of the evidence here around longer-term inflation expectations.

MR. FISCHER. Okay. Well, among the many things I've learned is, apparently frogs do jump out of the water as it's heated. [Laughter]

MR. WILCOX. Then I'll have to stop using that little aphorism.

CHAIR YELLEN. President Lockhart.

MR. LOCKHART. Thank you, Madam Chair. A lot seems to hinge in your thinking on inflation expectations, and one of the charts indicates a pretty high correlation of long-term inflation compensation to oil prices. I think we know that short-term surveys and consumer attitudes are affected by gasoline or, effectively, oil prices. I wanted to understand a little bit more what went into your forecast of oil prices and how much confidence you really have in it, because you're showing oil prices rebounding. I looked at it a little bit over the weekend, and there's some interplay in forward rates between the cost of storage and a prediction of future prices. There can be forward rates that are simply the cost of storage with very little prediction of future prices. There's a lot of noise in the market today on both sides of this question of whether oil prices are rising or whether at least WTI, because of U.S. inventories, is likely to fall. This is, I know, a little bit of a roundabout question, but can you talk a bit about your confidence in your oil price forecast here and how deeply we went into it?

MR. KAMIN. Sure. Just to answer your question, we're not very confident in our oil price projection, but let me explain how we constructed it. Actually, it is based on futures markets for oil. We basically take the futures curve for different categories of oil out several years, and that represents the basis for our forecast. Frankly, that's the best basis we can come up with because that futures curve represents market participants' best guess as to what will be those prevailing prices.

That was the approach that we basically used for decades. And moving into 2008 when oil prices were experiencing tremendous fluctuations, there was a lot of concern on the part of the Committee that our forecasts weren't very helpful in predicting the future. Our division did a full-court press to look at the forecast and ask how we could improve it. In the event, we decided that we couldn't improve it by very much. One thing we could do was take a look at market participants' outlook for the global economy, compare it with our own, and if there were any differences, we could adjust the futures curve for oil prices to take that into account. We regularly do that, but the effect on our forecast path is not great. Right now, we alter the path to raise it by 0.5 percent per year, which is very little if you take into account the fact that we may be predicting a little bit more exchange rate appreciation than the market, to take into account some differences between our appraisal of the global economic outlook and the markets'.

Basically, we're stuck with the futures curve, and the upward slope is predicated on a couple of very reasonable premises. One of them is that, over time, the low oil prices will reduce the incentive for production and production should decelerate. And we're certainly already seeing evidence of that in declining rig counts and in declining investment in the energy sector. Directionally, that's a very reasonable premise, and that should give you, eventually, some upward tilt to prices. Another premise that seems to underlie the upward curve is that, over time, the global economy should strengthen, and that, too, should lead to some increase in prices. Again, the direction seems reasonable. What's happened since January has been, first, the evidence of declining rig counts seemed so tangible that markets decided they were sure that, indeed, production was going to slow, and so oil prices rose and the whole futures curve rose.

Then more recently, as markets took note of soaring inventory levels, and as concerns emerged that these inventories might actually exceed the storage capacity available to put aside this oil, thus basically leading in a figurative sense an overflow of oil onto the market, those oil prices have come back down.

Those are reasonable explanations, and that leaves us, again, with our upward tilt for oil prices, but do we have a lot of conviction that for sure that's going to transpire? No. There have been a lot of analyses of how low oil prices could go, analyses looking at different fields in terms of what are the operating costs for those fields. Those analyses suggest that oil prices could go down to $40 per barrel before you see shutdowns significant enough to bring oil prices back up. We do have a lot of uncertainty. It seems perfectly reasonable that, over the longer term, the oil prices should start trending upward.

MR. POTTER. There is tremendous uncertainty. I think that's the crucial part.

CHAIR YELLEN. President Evans.

MR. EVANS. Thank you, Madam Chair. David, I took note of your very careful discussion about a number of choices that you made in putting the projection together, and I want to take you back to a choice that you made some time ago having to do with the 2014 first-quarter GDP growth rate. The reason for this is, as I looked at the table from the SEPs that I mentioned this morning—and it's also evident in your exhibit 3—that at liftoff pretty much everybody's core inflation rate is 1.3, 1.2, or 1.1 percent. There's one that's 1.4. Well, there are two, but those are participants who have liftoff in 2016. That's somebody else, myself and somebody else.

MR. KOCHERLAKOTA. Voldemort.

MR. EVANS. I don't remember the rules here. But when I look at the likely rationale for this, it seems to be that everybody has low unemployment rates, there's been strong employment growth, and the economy is going well. And I look at this and see the Phillips curve is alive and well here. That is, the inflation forecasting power coming out of that relationship seems to be why people have so much confidence. The size of gap seems to be important in this regard, and you mention that in your figure 3 on output gap estimates. I want to go back to the GDP estimate for the first quarter of 2014 because you made the choice that the bad number was all potential. That's a tough judgment, I understand that, and I was reminded of that when I looked at the staff's decomposition of potential GDP: You've got 1.6 percent for 2011 and 2013, half a point for 2014, and for 2015, it's 1.6. I wonder if you were instead just treating 2014:Q1 as a missing observation—never even saw that number and used monthly data to forecast it—some Kalman filter might put something in between there. I think the implications of this choice are modestly important because those gaps would be more negative if we had that. Could you discuss again your thinking on that?

MR. WILCOX. Bill, does this fall into your supply-side portfolio?

MR. EVANS. I tried to mention this at the outset of the question so that you could think about it while I was talking. [Laughter]. I try to be helpful.

MR. WASCHER. I think the basic answer is, we continue to consider 2014:Q1 GDP growth as anomalously weak, and we are treating it as measurement error. Because we don't want to let that measurement error affect our estimate of the gap, we also build that into potential output. That may or may not be the right assumption.

MR. EVANS. It is very unusual to put a 100 percent weight on a hypothesis like that, though, isn't it?

MR. WASCHER. We put a lot of weight on that explanation.

MR. EVANS. Now I heard the discussion about the choice you made about the natural rate, that after careful consideration it might be not the right time to move it down to 5 from 5¼ percent. But if you made the judgment in the first quarter of 2014 that there was more of an output gap than looking at unemployment, you might kind of go, "Well, a lower natural rate would be more in line with a larger gap, too." I am just asking, upon further reflection, if you go back, do you still have the same confidence in that?

MR. WASCHER. Well, I am not sure we ever had a lot of confidence in it, but we have maintained that assumption about the anomalous drop in GDP.

MR. EVANS. But the output gap estimate in figure 3 looks a little more rosy in part because of that choice, right?

MR. WILCOX. That judgment informs the contour of the Tealbook estimate of the gap, but it does not inform the contour of the FRB/US gap, nor of EDO. Those are purely mechanical, model-based efforts to distill the data. Now, it doesn't mean that they are not suffused with uncertainty.

MR. EVANS. That is helpful. Right.

MR. WILCOX. But they are not contaminated by our judgment about the best treatment of the anomalous behavior of GDP in the first quarter of 2014. Let me also reiterate the basis for that judgment, which was that GDP growth is currently estimated to have declined.

MR. WASCHER. Two percent.

MR. WILCOX. Against that backdrop, what we saw was a still significantly improving labor market with payroll employment increasing by nearly 200,000 jobs per month, which is considerably faster than the demographic requirement to absorb the increase in the labor force.

The unemployment rate was coming down. You may not feel our pain, but we did. I didn't know how to understand the world through that period if it were the case that we maintained an assumption that potential GDP growth was increasing at something like 1¾ percent, which by the way is where we think the "uncontaminated" estimate of potential GDP really is. We put the measurement in there, as Bill described, but as a matter of pragmatism and convenience, not as a matter of conviction.

MR. EVANS. Okay. Thank you. I appreciate that.

CHAIR YELLEN. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. I have a question for Steve. How unusual is dollar appreciation of this magnitude over this period of time? How concerned should we be about it in terms of the implications for the economic growth outlook, in your opinion?

MR. KAMIN. In terms of the big picture, there have been two much larger long swings in the dollar since we floated in the 1970s—one of them in the early-to-mid 1980s, and then more recently in the late 1990s, peaking in 2002 and coming down. Both of those were in the neighborhood of the steepness of what we have seen recently, but obviously they went on much further. We did take note of the fact that our upward revision to the average level of the dollar going forward was very large—more than 6 percent on a real basis. We looked at our data going back to the global financial crisis, around early 2008, to see whether we had made other revisions that size. This 6¼ percent that we just did was the largest. But there were a few in the 5 percent range, during the run-up of the dollar during the crisis, but basically we are in very unusual outlier territory here.

VICE CHAIRMAN DUDLEY. It might be useful to do a little bit of a case study analysis, because the 1980s was a very different episode. That was when we had very expansive fiscal policy in the United States, which drove up U.S. real rates really high, causing capital to flow here to push up the dollar. I view this as a very different episode, because U.S. fiscal policy is pretty neutral, and we're getting so much firming of the dollar. I guess I am a concerned citizen.

MR. KAMIN. I take your point, and my colleagues and I have certainly started to think a little bit more about what might be the case if we really are at the—not really the beginning now, but let's say the earlier stages of another what I will call "dollar super cycle." Now, what is true, of course, is that the most recent dollar super cycle in the late 1990s was actually very much a feature of our strength. But that may not be true this time, although to some extent it is. Anyway, we are going to continue that analysis, looking at those earlier episodes to see what clues they might have for the future. Although we are, at this point, by no means committed to the view that indeed the dollar is going to continue to go up, we are cognizant of the risks.

VICE CHAIRMAN DUDLEY. Thank you.

CHAIR YELLEN. Okay. Why don't we begin our round, and start with President Williams.

MR. WILLIAMS. Thank you, Madam Chair. My business contacts remain very optimistic, with reports of underlying consumer strength and anticipated double-digit growth in retail sales. In contrast, the recent national spending data look lackluster relative to expectations. I think much of this disappointment appears to reflect transitory factors, notably the harsh winter weather in the East, the Midwest, and the South. Now, we have been trying our best to offset this drag in the West with day after day of perfect weather. I have traveled across the District and found only a few exceptions. The Sierra ski resorts are short of snow, and Honolulu was a few degrees cooler than usual. [Laughter] Okay. I am going to pay for that. That's all right. Of course, we will run out of water soon, but that is a discussion for another day.

We did have our own transitory setback to business activity from labor disruptions at the ports along the West Coast. This resulted in losses for time-sensitive cargo, including perishable foods and seasonal retail goods. However, with workers back on the docks, and a tentative labor agreement likely to be ratified, any hiccup in GDP growth should be modest.

Some of the disappointment in the recent spending data also seems to reflect that expectations were set somewhat too high, particularly for the economy's sustainable benchmark for economic growth. This is evident in the Tealbook, which has lowered the average growth rate of potential output in the second half of last year and the first half of this year, by almost half a percentage point since our previous meeting. And, to a lesser extent, I have also revised down my expectation regarding the growth rate of potential output. Continued weak productivity growth and stagnant labor force participation, as we will discuss in a minute, remain hurdles for faster sustained potential growth.

Since December, with a slower underlying pace of potential, I have also revised down my forecast for average real GDP growth over this year and next year by a couple of tenths to 2½ percent. My modal medium-term projections for unemployment and inflation, however, are little revised, as is my assumption of a June funds rate liftoff. I should note that I now project that the unemployment rate temporarily dips slightly below 5 percent as highly accommodative monetary policy seeks to overcome the inflationary headwinds from a stronger dollar and lower commodity prices and to accelerate the attainment of our 2 percent inflation goal. In fact, I actually have overall PCE inflation a smidge above 2 percent in 2007, reflecting a rise in real oil prices in that year.

My assessments of the appropriate time for liftoff in the path of the funds rate over this year and next year are quite close to the prescriptions in both the difference rule and optimal-control policy reported in Tealbook, Book B. Research by myself and others has highlighted the good performance of difference rules, like that reported in the Tealbook, in particular the robustness to uncertainty about the natural rates of unemployment and interest, a topic particularly relevant today. In fact, given that my projection for the period ahead sees modestly higher inflation and a touch lower unemployment than the Tealbook baseline, my projected path is somewhat more accommodative than implied by these two benchmarks.

My medium-term outlook is relatively little changed, despite a fairly dramatic shift in financial conditions over the past few months. Quantitative easing by the ECB has helped push up the dollar and lower longer-term interest rates here and abroad. As described in the box in the Tealbook, depending on the relative size of these effects, the ECB's QE program either calls for no change or even less accommodation in the optimal path for the federal funds rate. Of course, if foreign economic growth does surprise to the downside, the U.S. growth outlook will deteriorate. While a negative shock from Europe remains an appreciable downside risk, despite the ECB's actions, we face potential upside risks as well. Notably, household formation has recently jumped, which could portend that a long-awaited recovery in single-family housing construction may finally get going this year. Overall, I view the risks to the outlook as broadly balanced.

In contrast with the recent spending news, the employment data have been amazingly good. Besides creating jobs hand over fist, the unemployment rate has fallen more than

1 percentage point over the past year, and I expect it to decline to under 5 percent by the end of this year, falling below my estimate of the natural rate of 5.2 percent. Other measures of labor market underutilization have also made significant progress. Involuntary part-time employment has fallen, job vacancies are piling up, and households that believe jobs are hard to get are balanced by those believing jobs are plentiful. In view of the surprisingly broad base of sustained improvement in labor markets we have been seeing, there is a very good chance that my unemployment rate forecast will prove to be pessimistic. For example, let me do a little simple math here. The labor market improves over the next 12 months at the same pace that we have seen over the past few years. Just assuming the same average pace we saw the past 24 months continues for 12 more months, the resulting U-3 unemployment rate will fall below 4½ percent, and the U-6 measure of underemployment will be closer to historical normal levels by spring of next year.

The one labor statistic that hasn't made obvious improvement is the labor force participation rate. Like the Tealbook, I expect only very modest cyclical recovery in labor force participation going forward. As I have argued before, much of the large drop in participation that has occurred since 2007 reflects trends that predate the Great Recession. And new research by Bob Hall and a member of my staff investigates this issue from the perspective of how an individual's participation rate varies with income.

The focus is on the so-called prime-age individuals who are 25 to 54 years old—a category I am getting a little bit tired of—and might be expected to show the greatest cyclical rebound in participation. Let me say it again. Basically, we are focusing just on 25- to 54-year-olds and looking at what has happened to their participation over the past couple of decades. What they find is that virtually all of the decline in prime-age participation since the start of the

Great Recession can be attributed to the decline associated with individuals in households whose incomes are above the median. It is the higher-income households that have had the drop in participation, not the lower income. This finding suggests that an improving labor market and greater job availability may not drive these higher-income individuals back into the labor force. Other more secular factors appear to be at work, especially because these income-based trends appear to have begun actually back in around 2000 or 2001. Altogether, this analysis implies that only a very modest recovery in labor force participation can be expected as the economy improves.

Finally, turning to inflation, the recent stronger dollar and lower oil prices have pushed headline inflation down, and, to a lesser extent, have had the same effect on core inflation. Despite the recent soft readings, my core inflation projection is essentially unchanged for the second half of this year and through 2017. In this projection, the disinflationary impulse arising from the energy price shock is confined to the first half of this year, and the effects of the continuing dollar appreciation are offset by a lower unemployment rate trajectory. Therefore, I still expect that we will achieve our 2 percent inflation objective by the end of next year. Thank you.

CHAIR YELLEN. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Madam Chair. In this cycle of contacts in my District, roles were reversed somewhat compared with earlier periods. In earlier periods, we noted improving data and presented an optimistic outlook, and our directors and contacts sometimes responded, “We’re not seeing it yet.” This time around, in contrast, we presented a current picture of mixed and even conflicting data and an outlook that, while in no way pessimistic, had lots of elements of uncertainty. Our contacts, for the most part, remained upbeat. Our directors and contacts report that demand continues to improve at a steady pace. Importantly, many contacts seem disposed to back up that outlook with investment spending and higher labor compensation. A not insignificant number of firms say they intend to ramp up capital spending, and a significant share characterize their investment growth as expansion oriented. The Federal Reserve Bank of Atlanta's GDP-tracking estimate suggests a very soft first-quarter growth rate. Admittedly, a lot of first-quarter data are still to be published, but, at this point, what we call our "nowcast" model is showing real GDP growth significantly below 1 percent. Our directors expressed doubt about our muted-growth story. One reason for the upbeat tone is improving margins. Firms indicate that they are treating the drop in commodity prices, including energy costs, as an opportunity to boost margins at least temporarily. Any pass-through to their customers is expected to occur only gradually over the year and in response to competitive pressures.

We were somewhat surprised by comments of our directors and contacts running businesses of national scope regarding February weather. A number of contacts said work disruptions this year have been as bad as or worse than last year. In these reports, the weather effects on economic activity were not limited to the Northeast. In the retail sector, while most firms have not yet seen the benefit of lower gasoline prices in consumer spending, one low-end retailer in the dollar segment did report a sales boost. Most others anticipate improved sales as a result of falling gasoline prices as the weather improves. The government sector in some areas is described as now feeling the effect of lower energy prices in falling revenues.

In our interviews this cycle, we asked about wage pressure. We heard more reports of growing wage pressure with some of that pressure in lower-skill job categories. The Wal-Mart announcement has a number of employers planning for increases in lower-wage employee categories. The often mentioned difficulty in finding qualified applicants is now extending beyond the usual list of hard-to-fill positions. Labor turnover was also reported to be on the rise. In our region, layoffs in the energy exploration sector have helped some businesses fill skilled-trade positions, particularly welders.

Turning to the national economy and my take on the incoming data, I've marked down once again my near-term economic growth, unemployment, and inflation forecasts, based on the tone of the data, but I've left the basic narrative of my forecast unchanged. I have real GDP growth about a half of a percentage point above the Tealbook projection over the next three years. Otherwise my outlook looks much the same as that of the Tealbook. I have not yet fully bought into the downshift reflected in this meeting's Tealbook outlook. In internal discussions in our Bank over the past two years, my staff and I have employed a simplifying device to describe the path of the economy. We have argued that the economy is in a 3 percent world, or a 2 percent world that prevailed from the start of the recovery to mid-2013. That's been the basis of our economic narrative. The staff preparing the Tealbook seems to have concluded the economy is back in that 2 percent world for the forecast horizon. The Tealbook forecast is now underpinned by slightly lower longer-term growth potential that is, in turn, reflective of lower productivity growth. The staff seems to expect a fundamentally slower economy over the medium term.

As I said, I'm not there yet. However, I have changed my assessment of the forecast risk and now have the risks to economic growth and inflation tilted to the downside. I find the disharmonious character of the current economic growth and inflation data versus the payroll employment trend to be concerning. I'm continuing to put a lot of faith in the transitory factors explanation for readings on economic growth and inflation. With a potentially historic policy decision pending, this is a particularly tough time to read the underlying trends, and I'll put this thought in more tactical terms in the policy round. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Madam Chair. Discussions with business leaders in my District focused on two distinctive features of the economy this winter: snow and the West Coast port strike. While the amount of snow that closed the U.S. government barely warrants a visit by the snow plow in Boston [laughter], the many feet of snow in successive storms accompanied by extremely cold weather have been quite disruptive. In fact, commuter rail service into Boston is still badly disrupted after more than a month. Various Boston museums reported visits in February were down between 25 and 50 percent relative to last year. Tourist sites, restaurants, and retailers all reported significant declines, with some making analogies to the drop that occurred after September 11, 2001. On a more positive note, crime was down significantly in February because quick getaways are not possible when roads and sidewalks have three feet of snow on them. [Laughter] Many businesses that rely on complex supply chains, particularly light manufacturing and suppliers to aerospace, reported that the West Coast strikes had caused significant slowdowns as a result of shortages of parts, either at their company or from other parts suppliers. In sum, the effect on the first quarter from these factors may be somewhat higher than anticipated in the Tealbook.

Looking beyond the first quarter, I had been expecting real GDP growth to be well above potential this year. With the dollar continuing to appreciate and weigh on net exports, I am now anticipating growth only modestly above its potential rate, slowing the decline in the unemployment rate. I expect the slowdown to be reinforced by more workers returning to the labor force. Consequently, our forecast envisions a more gradual approach toward my current estimate of the natural rate of unemployment at 5 percent. In light of the lack of wage pressure to date, I could easily believe that the natural rate of unemployment is below 5 percent, and I will revisit this estimate if we continue to see very modest wage and salary increases as labor markets, I hope, continue to improve.

On the inflation front, most private forecasters and many of our own SEP submissions have been anticipating a gradual return to 2 percent inflation. In fact, forecasters have repeatedly assumed that we would be close to 2 percent PCE inflation within two years, an expectation that has consistently been foiled by the data. But, undeterred, most forecasters have simply moved the assumption forward for another try with the next forecast round. This pattern of recurring forecast errors makes me less confident that models that rely on the strong assumption that well-anchored expectations will drive inflation to 2 percent are capturing current inflation dynamics. These serially correlated errors should make us less confident of the models and cause us to place more weight on the incoming wage and price data and less weight on models, especially when the incoming data do not conform to the forecast generated by our models.

As has been the case for some years, the most recent inflation data do not indicate that we are likely to quickly return to our inflation target. At our December meeting, the range for core PCE inflation forecasts for the 2015 SEP submissions was 1½ to 2.2 percent. However, the incoming price data indicate that even the lowest forecast in the range for December will likely be too high. The Tealbook has lowered its forecast for 2015 Q4-to-Q4 core PCE inflation from 1½ percent to 1.3 percent, and I have lowered mine to 1.2 percent. While some may dismiss recent low-inflation readings as largely reflecting the indirect effects of lower oil prices seeping into core inflation, my staff's work on oil's effect on core prices finds this effect to be, similar to the Tealbook, quite small. Similarly, my staff finds only a small effect for the indirect effect of non-oil import prices. In addition, market indicators of expected inflation outcomes should make us less confident that we are returning to 2 percent inflation over the next two years. Breakeven inflation rates remain quite low, and inflation probabilities derived from inflation caps and floors have recently implied a substantial increase in the probability that inflation remains below 1½ percent over the next 10 years.

I do not expect that by June we will have enough data to make us reasonably confident that we are returning to our inflation target over the next two years. As a result, the appropriate policy assumption in the Federal Reserve Bank of Boston's SEP submission entails liftoff in September, and I remain uncertain about how much evidence of increasing inflation will be available even by then. In addition, even with a liftoff delayed until September, I expect only a gradual increase in interest rates. In part, this reflects my expectation that progress on inflation will likely be slow. It also reflects that I've reduced my estimate of the longer-run real federal funds rate to 1½ percent. This, in turn, reflects the continued disappointing productivity numbers that, in part, account for the significant labor market tightening despite only lackluster real GDP growth by historical standards.

Finally, among the risks that concern me are the continued weakness in China and the possibility of more Greek tragedy that stresses the European economy, each of which could cause a negative surprise that policy at the zero lower bound is poorly situated to address. As we get to the middle of the year, we may have a better sense of the likelihood that these risks materialize, and pose a greater potential drag on the U.S. economy. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Lacker.

MR. LACKER. Thank you, Madam Chair. On balance, our regional information continues to indicate broad improvement in overall economic activity. Anecdotal reports received from the service sector have been quite positive for a few months now. An executive of a sizable retail chain has seen a distinct improvement in consumer spending behavior since last fall. Early registrations and orders for next month's High Point furniture market are up notably from last year. And a pickle manufacturer in North Carolina reported a surprisingly busy winter and noted the construction was under way for a new production line. And, yes, this is the Mount Olive pickle company located at the corner of Cucumber and Vine in Mt. Olive, North Carolina, in case you were wondering. [Laughter] The preliminary results of our monthly survey of service-producing firms leaves the diffusion index at 12, a level that continues to indicate expansion. The preliminary March reading on our manufacturing index, however, is negative 10, which indicates overall contraction. Written survey responses and other anecdotal reports suggest that some of the weakness can be attributed to weakening exports and some to snow and ice in February.

Both our manufacturing and service-sector surveys are signaling a more widespread pickup in wages. I was pleased to note the appearance of the Fifth District service-sector wage index in the alternative scenario box in the Tealbook and that it has proven to be significantly correlated with compensation per hour, which the author argues should be our preferred measure of labor compensation. Our service-sector wage index has been quite elevated of late. It was plus 23 last month, and the preliminary number for March is plus 14. Those levels would signal broader wage increases than have been indicated by the average hourly earnings series, and that's consistent with the increasingly frequent reports we hear lately from our contacts of wage pressures. For example, according to a staffing firm in South Carolina, "Quality candidates have choices and are being made multiple offers. Our clients are beginning to understand this and are moving forward with generally higher wages." That comment is relatively typical.

Turning to national conditions, I noted with great interest that the Tealbook's GDP forecast has converged to mine. For 2015, we're both projecting 2.2 percent growth and we're not far apart for 2016 either. My own forecast for 2015 is little changed from the previous projection. In fact, it has been basically stuck at 2.2 percent for nearly two years, but there's obviously a lot of data to come yet for 2015.

The critical aspect of the outlook, I believe, is the fairly robust trend in consumer spending, recent retail sales readings notwithstanding. The consumer spending trend appears to be attributable to the strong labor market, improving income prospects, and rising real wealth, and should be sufficient to keep GDP growth above trend going forward. Other components of GDP are a mixed bag. A sharp decline this year in oil and gas drilling and slow growth in other categories of construction will damp nonresidential construction spending. Net exports will also be a drag on top-line growth. On the other hand, despite recent choppiness, solid business investment in equipment and intangibles will likely boost top-line growth. For housing, I don't expect it to affect overall growth one way or another. Productivity I view as unlikely to accelerate significantly relative to recent trends. I think the modest GDP growth in my and the Tealbook's projection is still large enough to generate continued firming in labor market conditions.

On the inflation front, prices have been held down lately by two clearly temporary factors: low oil prices and the strengthening dollar. I don't expect much, if any, further decline in crude oil prices, and I share the Tealbook's assessment that the foreign exchange value of the dollar is likely to stabilize this year, although there's some obvious risks around that forecast. Meanwhile, measures of inflation expectations remain well anchored, and so I am confident now that, barring further adverse shocks, both headline and core inflation will move to 2 percent once these two temporary influences are behind us. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Okay. I suggest we take a break. Now, the only question is, how long a break?

MR. FISCHER. There's a rule that no coffee break should last less than 10 minutes.

CHAIR YELLEN. Why don't we say 10 minutes?

[Coffee break]

CHAIR YELLEN. Let's continue with President Mester.

MS. MESTER. Thank you, Madam Chair. The Fourth District economy continues to expand at a moderate pace, and the diffusion index of business contacts reporting better versus worse conditions remained at 18 percent. Some sectors reporting worse conditions were likely affected by historic low temperatures. In sharp contrast to the weather, which has been decidedly cold, developers tell us that the multifamily housing sector remains hot. Low oil and natural gas prices have challenged firms engaged in energy development or extraction, as well as their suppliers like steel producers. Our directors with ties to the energy sector tell us that some investment is likely being postponed until next year rather than eliminated. Beyond the energy sector, low energy prices may be starting to have a positive effect. Auto manufacturers and dealers continue to be very optimistic. Even though the number of autos sold has declined a bit in the past few months, contacts report that consumers are buying more expensive vehicles, so revenues are up. Manufacturers, especially those who have more domestic exposure, are upbeat.

Conditions in District labor markets are uniformly positive and continue to improve. The unemployment rate has fallen to nearly 5 percent. In March, 45 percent of our survey respondents reported an increase in recent staffing levels, up from 30 percent in January and last

October. The increases in staffing were broad based across sectors. So far, wage pressure has been limited to occupations in which there have been labor shortages for some time.

Prices for finished goods remains stable, even as input costs fall. Some firms appear to have pricing power. A major manufacturer of construction materials reported that although material prices have declined and further reductions are anticipated, the firm has now lowered prices for its own customers. Fuel surcharges put on by freight carriers when energy prices rose have not been reset lower, although some contacts report they have made the request.

Turning to the national economy, I believe underlying economic fundamentals remain sound. While I have made a few changes to my near-term outlook based on recent data, my modal outlook for economic growth, unemployment, and inflation has changed little since our January meeting, or since our most recent round of economic projections in December. Some of the most recent spending data have been on the soft side, but that is likely due to temporary factors like the very cold winter. Analysis by my staff using heating degree days suggests that extreme weather is likely to shave about ¾ percentage point from first-quarter GDP growth. I think we should be cautious about reading too much into the most recent numbers, and I take less signal from them for the outlook than the Tealbook appears to. I continue to project GDP growth to be about 3 percent this year and next. Factors supporting above-trend growth include highly accommodative monetary policy, improving household and business balance sheets and confidence, labor market strength, and lower oil prices. These factors will outweigh the effect of relatively weak global economic growth on U.S. exports.

By a broad set of indicators, labor market conditions are strong and continue to improve. Monthly job gains have averaged more than 280,000 over the past three months. The unemployment rate and other measures of underemployment continue to fall, and the job openings rate is at a cyclical high. We are nearing our goal of maximum employment. With output growth above trend, I expect continued job gains and reductions in unemployment and underemployment. I project that by the end of this year the unemployment rate will fall to 5.2 percent, which is below my 5½ percent estimate of the longer-run rate.

Like the Board staff, I considered lowering my estimate of the longer-run rate, but I also didn't find the case for doing so compelling. First, the estimate coming out of the Federal Reserve Bank of Cleveland staff's model of labor market flows points to a 5½ percent natural rate of unemployment. Second, some indicators suggest we may be beginning to see some strengthening in wage growth. Third, the error band around any estimate of the natural rate is very large. Of course, I will revisit this issue. If the unemployment rate falls more sharply than I currently anticipate and wage growth remains modest, I may need to adjust down my estimate of the longer-run unemployment rate.

I do anticipate that continued economic growth and labor market improvement will be accompanied by a pickup in nominal wage growth. But a failure of wages to accelerate could reflect structural factors, such as the aging of the population, which can't be addressed by monetary policy. I also note that wage growth does not typically lead price inflation. So with respect to either part of our mandate, I do not view faster wage growth as a precondition for liftoff.

Headline inflation continues to come in below our 2 percent goal, reflecting the sharp drop in oil prices as well as declines in import prices. So far, there hasn't been much pass-through to core measures of inflation, which have been relatively stable. The Federal Reserve Bank of Cleveland's median CPI measure, which helps predict headline inflation over the medium term, has remained near 2¼ percent since April of last year. In my view, inflation expectations remain anchored. There has been only a little change in the survey measures. Other measures, including the Federal Reserve Bank of Cleveland's 10-year expected inflation rate, have moved down a bit, but they remain within recent ranges. While little of the variation in longer-term inflation expectations can be explained by typical movements in energy prices, research by the Federal Reserve Bank of Cleveland staff indicates that the sharp drop in energy prices can account entirely for the recent decline in the Cleveland staff's expected inflation measures. Even though the firming in inflation compensation measures could be viewed as a good sign, I continue to take less signal about expectations from these measures. Those recent changes may be reflecting changes in liquidity premiums.

As oil prices stabilize, with economic growth above trend and inflation expectations stable, I project that inflation will gradually return to our 2 percent goal by late 2016 or early 2017. The stability of the survey measures of longer-run inflation helps inform my projection. Research suggests that these measures are more useful for forecasting inflation than market-based measures. Within the Cleveland staff's forecasting model, anchoring inflation around a survey forecast of longer-run inflation performs much better in terms of historical forecast accuracy than anchoring it around measures of expected inflation based, in part or in whole, on financial market measures, including the Cleveland staff's 10-year expected inflation. Thus, I am reasonably confident that inflation will gradually return to the FOMC's goal by the end of 2016 or early 2017. Of course, it is good to remember that it is very difficult to forecast inflation with any precision. Reasonable confidence should not require high confidence.

As indicated in the table provided with the request for SEP submissions, historical average projection errors across a range of private-sector and government forecasts indicate that the 70 percent confidence interval around a forecast of CPI inflation two years out is about plus or minus 1 percentage point. The Cleveland staff's analysis of a range of forecasting models indicates that current uncertainty around headline inflation forecasts is somewhere between "normal" and "somewhat elevated" compared with the norms of the past 20 years. There is no reason to think we will be more accurate in forecasting inflation this time, nor should we require that.

My projection is dependent on a policy rate path that has liftoff occurring in June with a gradual rise in rates thereafter, similar to a path suggested by a Taylor (1999) rule with inertia. Liftoff is one quarter later than in my December projection, reflecting the fact that inflation between one and two years ahead now reaches 2 percent one quarter later. I am hoping that we will change our policy statement tomorrow so that my projected liftoff date is not inconsistent with our forward guidance. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Bullard.

MR. BULLARD. Thank you, Madam Chair. Eighth District developments since the previous meeting seem to be consistent with continued economic expansion. According to the St. Louis Fed's quarterly survey of contacts, about two-thirds expect local economic conditions to be "better" or "somewhat better" in 2015 than in 2014. This is a slight increase in optimism compared with our November survey. Preliminary employment data for the most recent reporting period indicate that employment in the District grew at a modest pace. The unemployment rate in the District has continued to decline and stands at 5.8 percent, somewhat above the national rate.

Price pressures seemingly remain modest. In particular, surveyed businesses stress slower growth in nonlabor costs. Wage pressures, on the other hand, have modestly strengthened. More than half of our business contacts expect to increase wages during the second quarter of 2015. Similar to something President Lockhart mentioned, we think Wal-Mart may be acting like a Stackelberg leader in its recent decision to raise the entry-level wages of their workers. Some contacts, along with broader commentary, suggest that Wal-Mart's move will be matched by other large, big-box retailers as well as smaller businesses competing in that particular labor market pool.

Several contacts mentioned that poor weather and disruptions at West Coast ports had adversely affected their business or industry. In general, though, we see this year's weather disruptions as less significant than last year's. We see the weather stories consistent with the weaker-than-expected February U.S. retail sales report. Contacts at large technology and logistics firms noted some softness in volumes in the first quarter, although they gave no indication that this is part of an evolving shift to a flatter growth path over the near term. In particular, a logistics contact observed that activity in March was notably weaker than February because of weather, but that they remained comfortable with current volume trends.

Large manufacturing firms that have an international presence were more pessimistic, noting a slowdown in activity. The drop in oil prices has clearly cut into oil and gas equipment business volumes, and the stronger dollar continues to affect sales to overseas buyers. In addition, households may still be holding back because of uncertainty about the strength of the global economy. Foreign exchange hedging strategies seem to be mixed among large multinationals. On the positive side, several contacts expect that positive effects of lower oil prices on the U.S. economy will begin to show up later this year and into early 2016.

Nationally, a disturbing disconnect has developed between labor markets and the real economy over the past six months. Job growth has been quite strong, but the growth of the real economy has slowed from roughly a 4¾ percent pace over the second and third quarters of 2014 to what we estimate to be a 2¼ percent pace over the past two quarters, including the current quarter. Except for labor markets, we think data flows have been weaker than expected, on net, this year. We believe that the slowdown is temporary, and that economic growth over the final three quarters of 2015 will average a bit more than 3 percent. Above-trend growth will keep job growth brisk and push the unemployment rate below 5 percent in the second half of 2015.

Unlike the Board staff, I doubt whether the dollar's strength will eviscerate real GDP growth over the near term. One chart I have been staring at recently, provided by my staff, looks at the correlation between the four-quarter change in the real trade-weighted value of the dollar and the one-year-later four-quarter change in real GDP growth. The correlation is close to zero from 1983 to the present. Also, with regard to the dollar, we would note that the current value of the real broad trade-weighted exchange value of the dollar is about 4.5 percent below its long-run median value of 1983 to the present. More generally, I don't think there are good empirical or theoretical models of the response of real variables to exchange rate movements that are of sufficient quality to be a driving factor in U.S. monetary policy.

We also believe that the plunge in oil prices over the past nine months temporarily softened medium-term market-based measures of inflation expectations. I see this as a bit of a temporary mispricing in TIPS markets. If the U.S. economy rebounds to faster economic growth over the remainder of this year, as I expect, and other major central banks are successful in boosting growth, then crude oil prices may remain at current levels or even begin trending upward. In this scenario, we think market-based measures of inflation expectations will firm, and that actual inflation will follow this upward trend.

Labor market conditions remain a bright spot in the outlook as job growth exceeded expectations once again in February, and the unemployment rate fell more than we expected.

We did not think it was credible to project the U.S. unemployment rate remaining above 5 percent this year, given the current pace of improvement in labor market conditions. Accordingly, as just mentioned, we have 4.8 percent by the end of this year. In the two most recent cyclical expansions, unemployment dropped to 3.8 percent in the late 1990s and 4.4 percent in the 2000s. We think something similar may occur during the current cycle. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Evans.

MR. EVANS. Thank you, Madam Chair. In line with a lot of the recent spending data, many of my directors and other business contacts indicated some slowing in the growth of their businesses. For instance, our director from Manpower said U.S. demand for temporary workers has been soft so far this year. Our trucking director reported that business has slowed nationally, and the steelmakers we talked to have seen prices fall and inventories increase. However, just about everybody remained upbeat about the outlook for economic growth going forward. They attributed the recent softening to weather or just the usual variation we might expect to see in a healthy economy. My conversation with Ford was pretty typical. The company suspected that weather was a big part of the decline in February sales. It actually upgraded its 2015 forecast a touch and modestly increased production plans for the second quarter. Its biggest note of caution was over the weak yen, which was providing a bit of a pricing advantage to its Japanese competitors. That type of comment is not unusual. The lower dollar also appears to be helping in Europe, which that director from Manpower again said was an area in which demand was picking up, and in which business was doing quite well.

My own outlook for the real economy hasn't changed a great deal since our previous meeting. Economic growth has obviously been a bit softer in the first quarter, but that softness seems likely to be transitory. I expect growth for this year and next to be around 2¾ percent. That's actually a little slower than I was thinking at the previous meeting. In addition to the recent weaker data, the continued strengthening of the dollar has caused us to trim our outlook a wee bit. Still, economic growth should be strong enough to bring unemployment down to around 5 percent by the end of 2016, even with the participation rate moving closer to trend. I don't see an unemployment rate of 5 percent as overshooting full employment. Five percent is what I had written down in my SEP for the natural rate of unemployment. In view of the changing composition of the labor force, that seems conservative. It could be a touch lower. That would be consistent with the anemic wage growth and low inflationary pressures we've seen for several years. Wage growth is not impressive, even in parts of the economy like manufacturing, which seem to be doing very well, and the workweek is at a post–World War II high.

In terms of the inflation outlook, I think it is still very hard to be confident that we're headed back to our target in anything like an acceptable period of time. Like others, my SEP submission for core inflation is lower than last time not only in the near term, but also a touch lower further out in the forecast period. I see inflation only slowly crawling back up to 2 percent sometime in 2018 or later. Importantly, the data on core inflation have continued to be soft, and we probably haven't yet seen the full effects of the stronger dollar. We really ought to keep in mind that the dollar's appreciation is already imparting some restrictiveness that is somewhat like a monetary policy tightening, and, as I already mentioned, wage growth is far below where it should be if we were hitting our inflation target.

I certainly think that if the labor market continues to improve the way it has, we will eventually see higher inflation, but we need to be appropriately humble about our ability to forecast inflation. The degree of slack in the labor force is quite uncertain, and the response of inflation to slack is, to put it mildly, uncertain. Indeed, in evaluating inflation forecasting methodologies, it's not that easy to beat a random walk. The recent level of core inflation is usually a pretty good indicator of where inflation will be over the next one to two years. I think that means that to be confident inflation is headed back to target, we need to see some firming in the actual wage and inflation data, and we should also see some improvement in inflation breakevens. Their small retracement in recent weeks is welcome, but market measures of inflation compensation continue to be well below the level we would anticipate if inflation was expected to approach our target in the medium term.

To conclude, I think we are well on our way to achieving the employment part of our mandate in a reasonable amount of time, but my outlook for inflation is nowhere near satisfactory. When thinking about policy liftoff and taking a risk-management view, I just can't see the argument for hurrying. We need to manage the downside risk to inflation expectations and the risk to our credibility if we prematurely exit. That means we really ought to have a reasonable degree of confidence that inflation is moving up to target before actively tightening financial conditions. For me, I just can't see how we can credibly say we have that degree of confidence in the current inflation environment. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. First Vice President Holcomb.

MS. HOLCOMB. Thank you, Madam Chair. Federal Reserve Bank of Dallas researchers have uncovered a new economic phenomenon. They call it the "Fisher effect." No, this is not the tendency for nominal interest rates to co-vary with inflation. It is the evident tendency for the relative health of the 11th District economy to rise and fall depending on whether Richard Fisher is at the helm of the Federal Reserve Bank of Dallas. For those of you that have endured Richard's upbeat economic reports over the past 10 years, this may be an opportunity for you to indulge in some *schadenfreude*. [Laughter] Now, if you think that's not a proper Texas term, I would point out that a large part of central Texas was settled by German immigrants. I do think that you will understand my conclusion that he has timed his departure so that he would not have to give this report today.

This year, for the very first time since Richard took office in Dallas back in 2005, we are expecting Texas job growth to lag behind national job growth. We are still not expecting recession. President Fisher explained at the previous meeting a number of factors that are significantly different than in the 1980s that lead us to think that the effect will be different than in the 1980s, so I'm not going to go through those. However, our forecast for Texas job growth has been lowered by 0.5 percentage point since the Committee met in January, from 1.5 to 2.5 percent, down to 1 to 2 percent, based on the deterioration in our Texas leading index. That's a decline from the 3.4 percent growth we enjoyed during 2014 and will bring us below national job growth.

I think you may have heard that everything is bigger in Texas, and recent trends in the 11th District economy are an exaggerated version of recent trends in the U.S. economy as a whole. Thus, we've seen a particularly sharp slowing of growth in our manufacturing sector, driven by downturns in exports and the energy sector. But our service sector is holding up, and our unemployment rate has, so far, continued to fall. Specifically, our Texas manufacturing diffusion index was basically zero in both January and February, indicating that manufacturing activity was flat, whereas our service-sector index was in the low teens, indicating moderate growth. Texas exports fell in January and are now down 13 percent in real terms from their August 2014 peak. Still, the unemployment rate hit 4.4 percent in January, its lowest reading in seven years. As the energy sector has cooled, upward pressure on wages has eased somewhat. Housing and real estate activity more broadly have held steady. Auto dealers report strong sales.

Looking ahead, worrisome signs include the further appreciation of the dollar, ongoing declines in well permits, an uptick in initial jobless claims, and anecdotal reports that Houston-area office growth is slowing at a time when Houston accounts for 16 percent of all office space under construction in the United States. Area bankers report few negative effects from lower energy prices so far. However, their worry level will ratchet upward if prices don't begin to recover within the next six to nine months.

Energy industry contacts in the region are pessimistic. They expect a roughly 30 percent decline in capital expenditures this year. The decline would have been sharper except for the fact that a growing number of companies are deferring the completion of horizontally drilled wells. They are drilling the well, but postponing the fracking. As a result, there is the potential for production to increase quickly should oil prices rise. Despite the falling rig count and growing number of uncompleted wells, U.S. crude production has continued to grow and has done so at a faster-than-expected rate. This won't last. Production from horizontally drilled wells falls off quickly by roughly 30 percent in the first year, and the falling rig count must eventually affect the number of wells in production. The Department of Energy predicts that output in two major shale areas will decline in April, and that U.S. production overall will decline by close to 2 percent in the third quarter. Industry contacts are nervous that oil storage capacity in Cushing, Oklahoma, will be exhausted before then, however, which would put downward pressure on West Texas Intermediate.

A key point here is that the Brent and WTI crude oil prices have notably diverged because of the U.S. oil export ban. As of a couple of days ago, the Brent price is up 23 percent, to $57 a barrel, since the January Tealbook was released. The WTI price is essentially unchanged. It's the Brent price that determines the gasoline, heating oil, and other refined product prices paid by U.S. households. It's the WTI price that determines the investment and hiring decisions of U.S. energy producers. Because of Brent's rise and WTI's stagnation, the energy picture looks worse from the U.S. energy consumer's perspective without looking any better from the perspective of U.S. energy producers.

At the national level, the real GDP growth projections I've submitted on behalf of the Federal Reserve Bank of Dallas have been revised downward slightly from December, reflecting a more realistic view of likely growth in the working-age population and the belief that most of the declines we've seen in labor force participation are unlikely to be reversed. Our unemployment projections are unchanged from those we submitted in December. As compared with the Tealbook, we have slightly faster 2015 GDP growth, which leads to a slightly more rapid reduction in the unemployment rate, but we see the outlook for the real economy under appropriate policy as otherwise quite similar to the Tealbook baseline forecast.

The stronger dollar and lower price of oil had a larger effect on both headline and conventional core inflation than we had anticipated, so my near-term inflation projections are somewhat lower than those submitted by President Fisher for the previous quarter. But we continue to believe that longer-term inflation expectations are well anchored at a rate consistent with the Committee's inflation objective. As you very likely know, we use trimmed mean PCE inflation as the centerpiece of our inflation-forecasting efforts. As a result, we see inflation rising further and faster than does the Tealbook.

Finally, our staff remains convinced that increases in the unemployment rate are difficult to contain once they begin, so that the risks to mis-estimating slack are asymmetric. It is more risky to overestimate slack than to underestimate it. That asymmetry, in combination with our relatively optimistic view of medium-term inflation and near-term unemployment prospects, argues for a more rapid transition to a neutral policy stance than is assumed in the Tealbook baseline forecast. Thank you.

CHAIR YELLEN. Thank you. First Vice President Prichard.

MR. PRICHARD. Thank you, Madam Chair. As in the rest of the nation, economic activity in the Third District has moderated of late. This is especially true in manufacturing and housing. However, our service sector continues to exhibit considerable strength, and employment growth is solid overall. For example, the current general activity index in our Manufacturing Business Outlook Survey has dropped from its lofty late-fall levels to readings that are below its nonrecessionary average. Approximately as many respondents are now indicating a decline in activity as are indicating increasing activity. The indexes of current new orders and shipments have both dropped significantly since the end of last year. Unsurprisingly, with the decline in energy prices, both the indexes for prices paid and received are as low as they have been since April 2013. Future expectations have retrenched a bit as well and are now at the national level for an expansion. A somewhat brighter note is seen in the index for future employment, which remains well above its nonrecessionary average, a range in which it has resided now for the past two years.

The other sector of weakness in our region is residential investment. Single-family permits have been roughly flat for the past two years and show little sign of any improvement. Multifamily contracts, which have been growing quite robustly over the past year through November, declined quite noticeably in December and January, although they remain at high levels. Further, house appreciation has been much tamer in the region than in the nation, with house prices declining in Delaware and barely growing in Pennsylvania.

On a brighter note, the value for contracts for commercial buildings have surged, with two new high-rise towers having broken ground in Philadelphia and a third about to start. Also, the service sector continues to expand, as indicated by a bounceback in our Nonmanufacturing Business Outlook Survey diffusion index from 8.8 in January to 51 in February. Strength was broad based in the survey, with strong performance in indexes for current sales, new orders, current employment, and future activity. Employment growth remains strong as well, and the unemployment rate for the District as a whole is slightly lower than that of the nation.

Thus, our District reflects fairly well what is transpiring nationally: strong labor markets, relatively solid consumption growth, a falloff in manufacturing business activity, and a lack of any significant improvement in residential investment.

With that as background, my forecast of the economy is a bit stronger than the one in the Tealbook and pretty much in line with the SPF median forecast. I foresee 2.6 percent real GDP growth in the first half of this year and strengthening to 3 percent overall in the second half, implying GDP growth of 2.8 percent for the year as a whole. Subsequently, GDP growth gradually returns to a trend rate of 2.4 percent in 2017. That trajectory of real activity sees the unemployment rate declining to 5.2 percent by the end of the year, then to 5.1 percent by the end of 2016 and 5.0 in 2017. Thus, I see the unemployment rate as falling significantly below my 5.2 percent estimate of its natural rate. Inflation slowly returns to the FOMC's objective over my forecast, with the headline rate projected at 0.8 percent for the whole of this year after an energy-induced 0 percent in the first half. In 2016, inflation accelerates to 1.8 percent and settles to

2.0 percent in 2017. For core PCE inflation, for the years 2015, 2016, and 2017, my corresponding numbers are 1.4, 1.7, and 1.9 percent.

Appropriate monetary policy envisions a start to normalization in June of this year, with a gradual tightening of policy throughout the forecast horizon. I anticipate a federal funds rate of 0.88 percent at the end of this year, 2.1 percent by the end of 2016, and 3.63 percent in 2017, which is close to my long-run value of the funds rate of 3.75 percent. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President George.

MS. GEORGE. Thank you, Madam Chair. The 10th District economy continues to expand at a moderate pace with low unemployment, although the energy and agriculture sectors in the region have weakened. District contacts report sharp declines in drilling activity and planned capital expenditures. At the same time, drilling has increasingly focused on core areas, leading to greater production efficiencies and slight increases in overall production. Crude oil stocks continue to build, and, at the current rate Cushing, Oklahoma, could reach storage capacity in late April or May. For District states, particularly Oklahoma, Wyoming, and New Mexico, slower energy activity is negatively affecting state revenues. In the agriculture sector, farm income is expected to decline considerably in 2015, but farmland values have generally remained steady. Weaker profit margins and reduced cash flow have led to a significant rise in farmers' short-term financing needs and related bank lending.

For the national economy, I continue to expect above-trend growth over the medium term, although I marked down my estimate for near-term GDP growth largely because of weaker recent indicators of business spending. I also revised down my near-term inflation forecast, although I continue to see the current weakness as reflecting the temporary effects of lower energy prices and the stronger dollar.

Over the medium term, I expect the economy to grow at a moderate pace, supported mainly by consumer spending. Although many consumers stayed home during February's unusually heavy snowstorms, I expect they will head back to the stores in the months ahead as more moderate weather returns, with spending supported by savings from lower gas prices and ongoing increases in employment income and wealth.

With payroll growth averaging 230,000 jobs per month over the past two years, I continue to expect stronger wage growth over the medium term. My staff has noted that employment growth usually does not translate immediately into higher wage growth. The contemporaneous correlation between growth in average hourly earnings and employment growth is almost zero, but the correlation between wage growth and employment growth from about two years prior is much higher, with a correlation coefficient of 0.7. Indeed, some evidence of rising nominal wage growth is already apparent in the data. Wage growth among job switchers and job stayers indicates that both groups saw wages accelerate in the fourth quarter. Looking ahead, a further rise in the quits rate should support stronger wage growth as job switchers command considerably higher wages than those who stay.

The Tealbook's alternative view on wages is similar to work done by my staff, which suggests compositional changes in the workforce could be masking underlying wage pressures, particularly as measured by average hourly earnings. As the labor market tightens, firms are likely hiring less-experienced workers, paying them relatively low wages, and, as a result, dragging down average wages. Looking at measures of compensation that account for such compositional changes points to greater wage pressure than averages suggest. For example, the employment cost index shows a modest acceleration in compensation over the past year, and median expected income growth from the University of Michigan consumer sentiment survey has moved up this year from low levels last year.

Turning to inflation, I expect low inflation to persist in the face of low energy prices and a strengthening dollar. While longer-term market-based measures have recently dropped, they are above their lows from earlier in the year, and survey-based measures have remained anchored near our 2 percent objective. Thank you.

CHAIR YELLEN. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Madam Chair. In the intermeeting period, we talked to a wide range of contacts in the Ninth District about compensation pressures. Overall, the unemployment rate in the District is now below 4 percent, markedly below where it was in late 2006. Indeed, in the twin cities of Minneapolis-Saint Paul, which has more than one-third of the economic activity in the District, the unemployment rate is close to 3 percent. Nonetheless, other than in a few specific occupations and locales, compensation pressures remain, at best, moderate in the District, with wage increases typically reported to be in the 2 to 3 percent range.

Why are wage pressures so constrained? Labor leaders we talked to attributed the relatively low compensation pressures to increased post-recession risk aversion on the part of workers. Consistent with the implications of bargaining theory, they report that this risk aversion reduces the bargaining power of workers relative to firms. For their part, business leaders reported being flush with liquidity, but they saw many other ways to use those resources, like capital expenditure, rather than paying workers. We saw these stories from both sides of the table as largely consistent with each other. Other than in a few specialties, businesses continue to be able to find the workers that they want without paying them a lot.

Let me turn to the national economy. In terms of prices, as in December, my inflation outlook remains subdued. Under the monetary policy stance assumed in Tealbook, Book A, I don't see inflation returning to 2 percent until late 2018. The behavior of market-based measures of inflation expectations continues to be a matter of significant concern. The five-year, five-year-forward measures remain near historical lows. We also closely track the two-year, three-year measures, and these, too, are near historical lows. In my view, participants in these markets appear to be putting nontrivial weight on an event in which economic activity and prices are both unduly low because the central bank is unwilling or unable to provide appropriate accommodation. This is a signal that low inflation and the low-inflation outlook has reduced the credibility of the inflation target.

Turning to the real side of the economy, my outlook for economic growth has weakened somewhat since December. I now expect that the economy will grow about 2.7 percent in 2015. This growth should be sufficiently fast to deliver a further modest decline in the unemployment rate by the end of the year. I do expect this decline in the unemployment rate will be associated with an increase in labor input as measured by per capita employment and per capita hours. We may also start to see some upward pressure on labor compensation. But, as I just noted, nominal wage growth, and compensation growth more generally, remain very subdued, even in the relatively healthy labor market of the Ninth District.

Overall, I expect the gratifying improvement in labor market outcomes that we saw in 2014 to continue. It is important, though, to keep this improvement in perspective: 2014 was one good year, following four disappointing years in the labor market. In the context of a very subdued inflation outlook, I believe that we should be doing what we can to deliver more years like 2014. We should not be trying to use our tools to choke off the pace of the relatively nascent recovery of the labor market. Reflecting my outlook for prices and employment, my appropriate policy rate path involves deferring liftoff until late 2016. But I will leave a full discussion of that until tomorrow, Madam Chair.

CHAIR YELLEN. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. I have become a bit more worried about the outlook for economic growth, for several reasons. First, as many have noted, a broad array of indicators have shown less forward momentum right now in terms of economic activity, with real GDP estimates for Q1 and Q2 coming down significantly. Some are taking comfort from the strong recent payroll employment growth trends, and that is a positive. But I think we actually have a significant conundrum right now. Payroll growth looks to be unsustainably strong in relation to the underlying trend of GDP growth. So the question I would ask is, why couldn't payroll employment growth falter in response to weaker-than-expected demand rather than demand growth rise in line with recent payroll trends? I was a bit surprised that the Tealbook both revised down its Q2 real GDP growth estimates and revised up its expected payroll gains in Q2. I expect the conundrum to be resolved by some convergence between economic growth and payroll employment growth. But I don't have much confidence about which side is going to bear the brunt of the adjustment.

Second, I think there are some reasons to be more pessimistic about the outlook for economic growth over the medium term. One issue we have already talked about is the consequence of the dollar's persistent strength, which I believe is only just beginning to be felt. At the previous meeting I said that the dollar's strength was an important risk to the outlook, and the dollar has appreciated significantly further since that time. This issue seems to be shifting from a risk to a reality. I would encourage the staff to consider in the Tealbook a more extreme scenario with respect to the dollar. I note that right now a much stronger dollar is not one of the alternative scenarios in this meeting's Tealbook—and that may be an important omission. As Steve Kamin mentioned, the dollar has already moved quite far. On a broad trade-weighted basis, the U.S. dollar is up about nearly 15 percent over its level last summer.

We don't really understand how negative interest rates and QE are interacting in Europe and what implications these have for capital flows and currency valuation. It may be that European QE shows up in much greater euro currency weakness. During my trip to Basel 10 days ago, there was considerable discussion about the possibility that there is a strong nonlinearity in terms of investor behavior when the choice shifts from positive to negative interest rates. Apparently, investors will go quite far to avoid negative rates, extending duration or shifting to assets with positive yields in other currencies such as the dollar. In fact, we have seen this aversion to negative yields in terms of our own behavior. The Desk has recommended extending the duration of our foreign exchange reserve investments to mitigate the effect of negative short-term interest rates.

The other concern I have about the outlook for economic growth is the consequence of lower oil prices for U.S. oil and gas investment. Here, I think there is a possibility of much more weakness to come. For several reasons, my expectation is that oil and gas investment will fall much further. First, U.S. crude oil production and inventories continue to rise. As we have seen over the past few days, this is putting renewed downward pressure on oil prices, especially on West Texas Intermediate. It is true that the rig count has been cut, but the consequences have, so far, been very small, in part because the industry is continuing to become more efficient not only in the cost and speed of drilling each well, but also in how much oil they get from each well. Part of this efficiency is due to better technology and knowledge, and some of this is just greater concentration on the best prospects. The history of natural gas drill counts is informative, I think, because, if you remember, natural gas prices have come down much sooner. The natural gas drill count was 1,606 in September 2008. It is 268 currently. Yet natural gas production in the United States continues to increase, and prices, despite a very cold winter, remain very low.

Second, as others have noted, there is some risk that if production continues to outstrip demand, the United States will run out of storage capacity, remembering the fact that the United States prohibits the export of crude oil. If this was the case, we could expect the WTI–Brent spread, currently around $10 a barrel, to widen even further. Of course, if global storage capacity began to run out as well, we could see Brent oil prices falling further, too.

On inflation, I don't see much that is surprising. Core services prices are rising about 2 percent, but core goods prices are falling. This should persist for some time, as the dollar strength continues to show through. Inflation compensation measures have been bouncing around, seemingly tracking the movement in oil prices, and surveys of inflation expectations remain broadly stable. Nominal wage growth has, perhaps, moved up ever so slightly, but it is still pretty low relative to what one would expect to be consistent with our 2 percent inflation objective. I think the Tealbook forecast is generally a reasonable one with respect to inflation. The headline and core PCE indexes will fall a bit further over the next few months on a year-over-year basis before bottoming out, we hope, sometime later this year.

With respect to New York's SEP submission, a couple of points are worth noting. With economic growth slowing, future growth prospects uncertain, and inflation muted, we pushed back our point estimate for the timing of liftoff to September from June. June is still possible, but I would have to see some evidence of a further tightening of labor markets and decent prospects for economic growth, assuming that inflation was still very muted. We slightly flattened the short-term rate trajectory in 2016 and 2017 to reflect the effect of the dollar's strength on both economic growth and inflation. We pushed down our medium-term unemployment rate trajectory slightly so that the unemployment rate now dips slightly below our 5 percent estimate of the natural rate. This would seem like a desirable outcome because it would help pull the long-term unemployed back into the labor market, which would raise the productive capacity of the United States, and it would also help push inflation back faster toward our 2 percent objective.

Finally, I would like to raise an issue that I think warrants greater attention: the very low level of bond term premiums. I think this topic is worth greater exploration because it represents an important source of uncertainty and risk with respect to the economic outlook, monetary policy, and financial stability. Consider two very different narratives. In the first narrative, the bond term premiums stay very low as QE continues in Europe and Japan. In that case, "all else being equal" would imply the need for a more rapid tightening of the U.S. monetary policy. In the second case, imagine that bond term premiums snap back to more normal levels. That would imply a less steep path for short-term rates here in the United States, but it would also raise financial-stability risks. In the "stay low" scenario, that has implications for pension funds and financial intermediaries like insurance companies that offer products with minimum guaranteed returns. It can also lead to a "search for yield" behavior to riskier assets and long durations. Conversely, in the "snapback" scenario, the financial-stability risk would arise if bond yields moved up abruptly. I think this is a wild card in the economic outlook that we are going to have to think about as we go forward over the next few months. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Fischer.

MR. FISCHER. Thank you, Madam Chair. We face two significant puzzles in understanding the current macroeconomic situation. The first is that labor market conditions have been improving impressively. Hiring has been strong. The unemployment rate is getting close to SEP estimates of the natural rate, while both actual and expected GDP growth have been a good deal less impressive. The second is that despite the relatively low rate of unemployment, inflation, even core inflation, expected a year ahead shows few signs of raising its head.

Now, by definition, the first puzzle—the difference between GDP growth and employment growth—can be explained by the behavior of productivity, but that just pushes the problem to another question, which is, can we explain the behavior of productivity? That's difficult. It could be a GDP data problem, one that would lessen as successive GDP data estimates are presented, but I suspect that even the final data will continue to show that productivity growth has fallen dramatically. This could reflect the mix of economic growth, with employment gains being more weighted than usual to low-tech and low-productivity service jobs. Whatever the source, we should bear in mind the Herbert Stein wisdom that the difference between a growth rate of 1 percent and a growth rate of 2 percent is 100 percent. This means that the productivity slowdown is a major long-term problem for the United States, but in terms of our target variables, it's not directly relevant to our immediate policy concerns, which relate to inflation and unemployment.

In the Tealbook, the staff has responded to the latest discrepancy between spending and labor market data by lowering their estimate of structural productivity growth. The staff's view is that when there appears to be inconsistency between national income and labor market data, the labor market data are generally more reliable. However, part of the problem may be, as has often been said around the table, that we need to look beyond U-3 to understand labor market developments, perhaps even more than the staff does in the Tealbook. U-3 was almost certainly not a complete measure of slack in earlier stages of the recovery, but several anomalies are gradually being worked out, be it the long-term unemployment rate or the percentage of those working part time for economic reasons. Further, the quits rate has jumped over the past six months.

The currently low participation rate is the most important aspect of the employment picture that could give us an extra margin of employment as the economy moves ahead, but the bulk of the decline from a 67 percent to a 62 percent participation rate is explained by demographic factors. Another possibility is that the natural rate of unemployment has been declining to a number that begins with 4, so that the reduction in the unemployment rate has not been as great a reduction in slack as we've thought hitherto. In this case, the unemployment rate will continue to decline if we continue to grow reasonably, but it's unlikely that it will continue for long to decline at the rate it has over the past two years. That means that we're getting closer to full resource utilization.

On the inflation front, we can be reasonably confident that we'll see an increase in inflation before too long. Of course, the headline inflation figures will be aided by a turnaround in oil prices, or at least by a decline in the rate at which oil prices might continue falling. The effect of the appreciation of the dollar on domestic prices will stop after the dollar stops appreciating, but that date is harder to forecast because of the well-known overshooting phenomenon. Nonetheless, the staff's projection that core import prices will resume increasing late this year is plausible. The staff's forecast that core inflation will reach 1.6 percent in 2016 means that we may be close to our target inflation rate by the end of next year. The fan charts on page 74 of Tealbook, Book A, suggest that the probability of core inflation being at 2 percent or more by the end of 2016 is somewhere around 35 to 40 percent.

I have two more topics before concluding. First, why are real wages not rising as we approach the natural rate of unemployment? Well, they might be, as the box on page 24 of Tealbook, Book A, and evidence from outside the Fed suggests. And some of the reports we've heard today also suggest that. In addition, real wages may be rising only slowly because productivity growth has been low, or, as mentioned a second ago, the natural rate might be lower than we recognize.

Second, what about the headwinds? Some of the headwinds may be turning into tailwinds. Most important of those is that there is far less pessimism and even some optimism about European economic growth than there was only a few months ago, and similarly for Japanese growth. There are also the promising fragments of information we've received during the briefings from the presidents of the Reserve Banks, including that on household formation, which is very interesting. But some headwinds remain. The most important among them is the appreciation of the dollar, the slowdown in Chinese economic growth, and the possibility of a Greek exit from the euro area. I am reasonably confident that inflation will continue moving back to its 2 percent objective over the medium term, and that the unemployment rate is getting closer to the natural rate, but more on that and the other factors relevant to our policy decisions tomorrow. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Madam Chair. Up until quite recently, I thought I was going to devote the bulk of my remarks today to various labor market issues—downward nominal wage rigidity, the shape of the Phillips curve, and the like. There'll probably be plenty of time to return to those issues in April. So instead I wanted to comment, like President Dudley, on some reasons, perhaps, for a bit of caution right now. Over the course of the past couple of weeks, I've been struck by two things: one, the degree to which actual as well as likely international developments are increasing downside risks; and, two, the little burst of domestic data suggesting that there may be some pause in what heretofore has been a basically improving economic situation.

Beginning with the external risks, which we have been discussing regularly in recent meetings, I believe we've seen basically unchanged risk associated with the extent of China's growth slowdown and with geopolitical tensions on a number of Russia's borders. I don't think those have changed very much one way or the other in the intermeeting period. I do think—as several of you, most recently Stan, have noted—that chances of a Greek exit from the euro zone have been rising even since the four-month extension. The seeming inability of the Greek government to navigate between domestic and international expectations has brought discussions almost to a standstill. And there have been more than a few hints that at least some other euro-zone countries believe a Greek exit would actually be beneficial for the euro zone over the medium term by removing it as a distraction and allowing them to attend to ongoing structural issues and relationships. As Steve Kamin noted in his briefing, there is still a fairly widespread view that a Greek exit would be manageable and would not have contagion consequences in peripheral, much less all of, Europe. But I think I'll have to acknowledge that that may not be the case. In fact, if it turns out that there are consequences, the fact that everybody has been assuming there are no consequences might make the reaction even stronger because people have not been hedging against that eventuality.

An additional international issue—which is, I think, beginning to loom a bit larger—is the situation in Brazil. To date, Brazil's problems have been associated with commodity price declines, the rise in the dollar, and domestic political turmoil. All of those carry at least some risk of spilling over into the international financial sector if, as appears at least possible, large Brazilian companies have difficulty servicing their external debts—in particular, obviously, dollar-denominated external debts. Brazil is not a small emerging market, so if tensions and problems do begin to rise there, we may see some spillover in other parts of Latin America.

Speaking of a strong dollar, we now, as Vice Chairman Dudley has just noted, may be seeing its having shifted from a downside risk to a reality of a drag on economic growth. The disappointing numbers on industrial production and manufacturing probably reflect that most directly. I think it's important to note that the significance of the strengthening of the dollar does depend substantially on the reasons why that strengthening is taking place and the background economic context for the strengthening. When in the 1990s the dollar was strengthening, it was against the backdrop of really quite strong U.S. growth—including productivity growth, GDP growth, and employment growth—and it was almost as if dollar assets were sucking in investment funds from all over the world. People wanted to be in the U.S. stock market. They wanted to be making foreign direct investments in the United States. Today the strength of the dollar is arising largely from, you might say, relative U.S. strength, but it's basically due to QE in Europe and in Japan and other manifestations of what is really weakness internationally. Under these circumstances, the implications of a stronger dollar are not so favorable at all.

I think that there are at least three reasons to expect that the dollar strengthening may continue, and that it may continue to a greater extent than is incorporated into the Tealbook forecast. First, it's not uncommon for sharp changes in exchange rates to continue well beyond what even reassessed fundamentals would have suggested. There are momentum trades in which people just get caught up in the direction of bets, and they sometimes overshoot. Second, as I was alluding to with Brazil, under conditions of the dollar strengthening, those abroad who hold dollar-denominated debts sometimes find it more difficult to roll those debts over. Thus, they're required to go out and get dollars by selling domestic resources, which, of course, strengthens the dollar. Third—and this goes back to China—as my little colloquy with Steve Kamin during the staff briefing suggested, I think it's quite likely that China is going to change its exchange rate policies in reaction to a sustained dollar appreciation, and that they will change the band so the renminbi continues to appreciate on a global trade-weighted basis but will depreciate against the dollar. That, I believe, is going to actually be a stronger response to the degree that the dollar itself continues to appreciate. For all of those reasons, I think it's more than a small possibility that dollar strengthening continues beyond what's projected in the Tealbook. So that's the international side, and I count the dollar as mostly an externally driven phenomenon for these purposes.

Unlike the past couple of months, when the dollar's strength seemed to be the only significant warning sign for the domestic economy, a recent string of data at least gives some grounds for pause about how we're doing domestically as well. And I would say that, since that very strong jobs report earlier in the month, just about every number has been disappointing. David Wilcox, I believe, mentioned the retail sales numbers, which probably ought to apply a discount factor based on weather, although, as President Bullard said, almost nobody thinks the weather nationally was quite as bad as it was last year. Regarding household spending expectations—now, this is survey based, to be sure, and so it's probably deserving to be discounted—it's worth noting that they have fallen to their lowest levels of the past couple of years. Housing starts and permits were disappointing, as reported this morning. Business fixed investment is still sluggish, although here it may be that the decline in energy-related investment may be masking some overall improvement. Finally, I noted that the shipments diffusion index for nondefense capital goods is down close to its lowest level since the crisis. Now, this is a pretty volatile series, but it is an interesting window, again, into the expectations of business as to economic growth over the next couple of years.

Taken alone and maybe even taken together, each of these pieces of data may turn out to be more noise than trend. But, against the backdrop of global disinflation and the various downside global risks, it's at least possible that the decent, though still unspectacular, momentum of the past year may have slowed some. I think that's probably something that's going to be of more consequence to us over the next couple of meetings if, as I assume, we're going to remove "patient" from the statement beginning tomorrow. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Powell.

MR. POWELL. Thank you, Madam Chair. As far as the overall development of the economy since the January meeting is concerned, we've had two stronger-than-expected employment reports balanced—and probably more than balanced—by a run of weaker data that suggests a modest weakening, let's call it, including the February retail sales; the weak manufacturing reading; producer prices; and a weakening in consumer sentiment, as shown in the Michigan survey. The dollar has increased well beyond expectations, with net exports now forecast to subtract 1 full percentage point from this year's GDP, and there's a risk that, as we move or seem to move toward liftoff, the dollar will continue to strengthen. On the other hand, the picture in Europe seems to me at least a little bit brighter. Lower oil prices and the weaker euro are providing a lift to sentiment in Europe, and, to the extent that that narrative plays out, in time it should limit further upward moves of the dollar, at least relative to the euro. Oil prices rose after the January meeting but have now essentially returned to their lows, particularly for WTI. There's good reason to think that that will continue as we come close to running out of storage in the United States.

Overall, I continue to see the picture as a positive one, although slightly weaker. Low oil prices will support consumer confidence and spending, and they'll also hold down inflation, perhaps for a little while longer than we expect. I think we will see continued strong job growth, which is based on stronger business confidence, and that will also support consumer spending. I believe the dollar is going to be a significant headwind and threatens to be an even bigger one.

On inflation, it has been interesting to watch the co-movement of rates, the dollar, breakevens, and the price of oil in the intermeeting period and before that. Of course, the spot price of oil tells us nothing about inflation 5 to 10 years ahead, which does tell me that the longer-term breakevens need to be taken with a grain of salt. The pattern supports the view expressed in one of the memos that a lot of the movement of long-term rates—and breakevens, in particular—has been driven by global events and global flows, which probably don't have important long-term implications for inflation expectations. That's not to express great confidence in the situation regarding inflation, but just to say I don't think there's a big signal in breakevens. And I admit that's far from certain and will need careful monitoring.

I have a couple of points on my SEP submissions. I did lower my estimate of the natural rate of unemployment to 5 percent. I did reduce my estimate of the longer-run neutral federal funds rate to 3½ percent. My GDP forecast is very much in line with the Tealbook, but I think there's a reasonable likelihood that unemployment will decline more than the Tealbook forecast, given the GDP and payroll forecasts. So I have actually forecast that the headline unemployment rate will decline all the way to 4.9 percent this year, conditional on the GDP and payroll numbers. It's worth pointing out that payroll numbers in the second half of this year are about 210,000 per month, which is certainly lower than the level of recent history and—as President George, I think, pointed out—lower than the level of the past 24 months.

To conclude, as a modal case, I do see inflation returning to 2 percent as the unemployment rate declines to around 5 percent. I'm reasonably confident that we will see an increase in inflation later this year, but I would emphasize that it's actually, to me, very notable how much uncertainty there is around the inflation creation process as well as the natural rate of unemployment, both of which are tremendously important in the short term. In fact, I would say that I found some real attraction in the alternative scenario that the staff offered at our Board meeting on Monday. In that scenario—this echoes what Governor Fischer was talking about—the natural rate declines further to 4¼ percent; productivity and economic growth are a little bit higher; and inflation is a little bit lower, thanks to the wider unemployment gap. Now, that's not just a more pleasant way to align the output and unemployment gaps. It is certainly that. But it also strikes me as not at all wildly implausible. So I think that, as we get closer to full employment, the level and character of these supply-side constraints become ever more important.

To wrap up, I see the main risk to the economy coming from events abroad, particularly strength in the dollar and an exit of Greece from the euro, which might be managed well enough to avoid a catastrophe—at least for the euro system, if not for Greece. But, in the meantime, it would almost certainly be a material setback for the recovery in Europe and for our economy. So I think those risks underscore the need to be sure that we aren't normalizing into a weakening economy, and I'll have more to say on that tomorrow. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Brainard.

MS. BRAINARD. Thank you, Madam Chair. Since we last met, we've seen further divergence in the two legs of our dual mandate. Employment has shown further strong gains, while inflation has softened further away from the 2 percent target. My outlook for the economy has darkened somewhat, in light of the strong headwinds from the continued appreciation of the dollar and lackluster domestic spending.

The news received from the labor market has been positive and continues to suggest that the economy is moving closer to our goal. Since we last met, the data for January and February and the revisions to previous months paint a noticeably stronger picture of employment growth. In particular, payroll growth is now reported to have averaged 280,000 in the second half of last year and appears to have maintained that pace into the current quarter. Since December, measures of labor utilization have all improved: The unemployment rate has edged lower, the participation rate has moved up, and the number of employed working part time for economic reasons has declined.

At the same time, the news on inflation suggests that it remains stubbornly low relative to our 2 percent target. The recent declines in headline PCE inflation over the past several months are largely due to previous large declines in crude oil prices. Once those price movements bottom out, we might expect to see headline prices moving fairly close to the underlying rate of core inflation, but the underlying rate of core inflation is also quite low, according to the recent data. The 12-month change in core PCE prices in January was 1.3 percent, similar to the rate a year ago, and higher-frequency measures are even lower. In that regard, I note that even the three-month change in the Federal Reserve Bank of Dallas trimmed mean rate was only 0.7 percent.

Obviously, one possible way to reconcile the disconnect between employment and wage and price developments is that the natural rate of unemployment may be lower than many observers have been assuming, and that the participation rate gap may be greater. In particular, that inflation and wages have increased little or not at all over a time when resources, by many measures, have moved much closer to full utilization suggests we may be further away from full employment. Consistent with that hypothesis, a shift in the demographic profile of our workforce would be in keeping with a reduction in the natural rate, and there may be some structural aftereffects of the financial crisis that also support that story.

In recent months, we've seen some crosscurrents among the components of aggregate demand domestically. On the positive end of the spectrum, consumer spending appears to have increased robustly at the end of last year. Although auto and retail sales softened in February—perhaps in part because of adverse weather—strong job growth, the effect of lower oil prices on real incomes, and increased confidence all point in the direction of supporting consumer spending. But the other components of domestic aggregate demand appear quite tepid. Residential investment remains very weak, as shown by the most recent data on housing starts. Of course, we all keep holding out hope that low levels of homeownership and some hopeful signs on household formation still point toward the possibility that pent-up demand will start to materialize. Business fixed investment looks to increase only modestly this year, particularly with lower oil prices pushing down drilling investment. And, of course, government spending, while not subtracting from economic growth, is also not likely to add much.

Against this, net exports are exerting a material drag on GDP growth. The broad nominal dollar has appreciated more than 15 percent since June of last year, and with that appreciation has come a sharp reduction in the contribution of net exports. In fact, we haven't seen as strong a negative effect from dollar appreciation and a decline in net exports for more than a decade. In the Tealbook projections, net exports take away 1 percentage point from real GDP growth this year and next. Thus, the direction of aggregate spending over the next year may largely reflect the outcome of a "tug of war" between domestic consumer spending and net exports. The hopeful scenario is that faster consumer spending will outweigh the downward pull of an appreciating dollar and that resource utilization will continue to increase.

But there are risks, I think, on both sides. On the upside, the advent of quantitative easing in Europe may finally lead to a convincing recovery, a noticeable increase in inflation and inflation expectations, and a stabilization or even some reversal of recent gains in the dollar. In fact, the effect of QE on asset prices in Europe is promising. One could even imagine that, further out in the medium term, faster foreign economic growth leads to reversals in both energy prices and previous gains in the dollar. Such a confluence of events could push inflation higher, with the attendant implications for monetary policy. On the downside, however, the effect of quantitative easing on European domestic demand may be somewhat attenuated due to the very bankcentric nature of the financial system in the euro area. Furthermore, many interest rates in the euro zone are now negative, and there's considerable uncertainty about the effect of negative interest rates on activity, particularly as they fall further. This greater uncertainty, together with the ongoing uncertainty about the outcome of difficult negotiations between Greece and its creditors, suggests sizable downside risks.

It is also striking that the dollar appreciated substantially further on the commencement of asset purchases in the euro area, even though the markets had already been largely exposed to all of the details surrounding the implementation of quantitative easing. This, together with a continued large gap in longer-term interest rates between the United States and other advanced foreign economies—as well as the potential for China to adjust its currency—suggests that the upward movements in the dollar could well continue and be larger and more persistent, even, than in the Tealbook baseline. This could act as a significant headwind for economic activity and put further downward pressure on inflation—both indirectly, through lower resource utilization, and directly, through its effects on core import prices. The staff's judgmental estimate is that a 10 percent appreciation of the dollar reduces core import prices by 3 percentage points and PCE prices by 0.3 percentage point over the course of a year or so. But there's considerable uncertainty regarding the magnitude of import price pass-through. And plausible empirical estimates, as well as the staff's SIGMA model, suggest that the effect could be much larger.

These risks make it considerably less likely we will see evidence by June that will enable us to feel reasonably confident inflation is moving back to its target, a theme I think we will return to tomorrow in our discussion of monetary policy. Thank you, Madam Chair.

CHAIR YELLEN. Thank you very much, and my thanks to everyone for another interesting round of observations on the economic outlook. As usual, I will try to summarize briefly some of the main themes in the go-round, and then I'd like to add some remarks of my own.

Starting with the labor market, I think everyone agrees that labor market conditions are continuing to improve. We see broad evidence of that in a range of indicators as well as in anecdotal reports. It is, of course, a very welcome development. Most important, payroll gains have speeded up over the past three months in spite of harsh winter weather in much of the country. The unemployment rate has been moving down, and broader measures of labor underutilization, such as U-6, have declined by similar amounts. Labor force participation has moved sideways. But, as some of you noted, the fact that it's held steady rather than declining further in line with demographic trends represents an improvement of sorts. And some of you mentioned that surveys of job market perceptions remain strong. In spite of the decline in the unemployment rate, all but two of you, based on your SEPs, continue to think that some slack remains in the labor market. Interestingly, quite a few of you revised down your estimates of the longer-run normal unemployment rate this round.

Wage developments garnered a good deal of discussion. Measures such as average hourly earnings, hourly compensation, and the ECI all continue to show sluggish nominal gains of around 2 percent or so, well below levels that could ultimately be consistent with 2 percent inflation and trend productivity growth. But, as discussed in the Tealbook box—and a number of you mentioned this—business surveys are finding that wage increases among firms are becoming larger and more prevalent, and that result seems to be consistent with many reports that you're hearing from your business contacts. That evidence suggests that a pickup in nominal wage growth may be under way, although there were also comments suggesting that the pickup in wage growth is still not broad based and is confined to some specific sectors.

Turning to developments in the broader economy, I heard general agreement that the current readings on overall activity have, on balance, moderated since the January meeting, and a number of indicators have come in quite a bit softer than expected. Some of you noted that prospects for GDP growth over the rest of the year and beyond now look a little less favorable than in December partly because of dollar appreciation, but also some of you have lowered your estimates of trend growth. I think most of you, though, continue to view the outlook as still sufficiently favorable to support continued improvement in the labor market.

Many of you cited consumer spending as a bright spot for the economy, reflecting low gas prices, rising employment and wealth, and other factors. But there is the caveat that we've had three disappointing retail sales reports. A number of you mentioned harsh winter weather, and that could be a factor. In other areas, though, we are seeing weakness. The recovery in the housing market remains quite sluggish. A number of you mentioned that nonresidential business investment seems as though it's weakening further, in large part reflecting lower oil prices and reduced drilling activity, and some of you noted that this is something that could intensify over time.

Many of you commented on the likely influence of the marked dollar appreciation we've seen, the fact that it's already affecting foreign trade, and the possibility that the dollar could continue to appreciate further from present levels. Export growth appears to have slowed markedly, and the appreciated dollar is likely to have a persistent effect. On the other side, some of you mentioned slightly stronger economic growth in places like Europe, in part due to the ECB actions. On the other hand, there was a lot of concern about downside risks from developments in the global economy, including ongoing risks related to China and Russia; renewed and perhaps intensified risks relating to Greece; and mention of Brazil and other countries for which a strong dollar could affect corporations that have borrowed in dollars, and from which we could see defaults and spillovers.

On the inflation front, incoming data was roughly as the staff expected. I think we all anticipate that inflation will run well below our 2 percent goal in the near term because of earlier declines in energy prices and decreases in core import prices. But most of you don't see incoming data as materially affecting the longer-run outlook. Overall, I heard general agreement that inflation is likely to move back toward 2 percent over the next few years as the effects of low energy prices and dollar appreciation fade and as the labor market continues to improve.

A number of you expressed confidence in your outlook that inflation will return to 2 percent. However, a number of you also expressed some doubt about that as well as a lack of confidence in this forecast. Some of you, in expressing doubts, pointed to price and wage developments and the fact that core inflation is moving down. In addition, a number of you commented on the fact that, even though survey-based measures of long-run inflation expectations have largely remained stable, it is concerning, at least to some of you, that market-based measures of inflation compensation, after a short-lived rise, have declined more or less back to the level we saw at the previous meeting. Exactly what's going on there is hard to determine. It's a little bit perplexing that there seems to be such a strong correlation of this measure of inflation compensation with oil prices and the dollar. Nevertheless, for some of you, it is a significant concern and points toward a possible loss of credibility of the Committee in meeting its inflation commitments.

Let me stop there. Would anyone like to comment on that summary? [No response] Then, if I might, I'd like to add some comments of my own.

Like everyone else, I see solid evidence that the labor market is improving, and that we're drawing closer to normal conditions. But, like many of you, I, too, think we still have a ways to go. Like quite a few of you, I also estimate that the natural rate of unemployment is at 5 percent. I note that the Beveridge curve has yet to shift all of the way back to its pre-crisis position. Even so, I see that the evidence overall is relatively thin that the natural rate is higher now than it was prior to the financial crisis.

While I recognize that there are alternative explanations for continued subdued growth in wages, I take that as some evidence of a good bit of remaining slack. In addition, labor market slack is showing up in forms that are not included in U-3, particularly involuntary part-time employment and depressed labor force participation. The spread between the broadest measure of labor market underutilization, the U-6 rate, and the conventional unemployment rate is currently 1¾ percentage points higher than the average spread in the years preceding the recession. So even when the unemployment rate reaches its normal longer-run level, the labor market will still be putting downward pressure on inflation until this spread is returned to normal.

Turning to the outlook for economic growth, I'm reasonably optimistic that real GDP will expand sufficiently fast this year to enable further progress toward our maximum employment goal, but not all of the indicators are favorable. My optimism about the near-term outlook for real activity rests in large part on factors like rising employment, low gas prices, expanding household wealth, and a marked improvement in consumer confidence. I'm cautiously optimistic that these same factors, coupled with low mortgage rates and demographic pressures, will enable a somewhat faster pace of recovery in the housing market. But I am concerned that other factors, particularly the dollar appreciation and weak activity abroad, will constrain overall GDP growth and net exports. I, too, am concerned that the tone of recent spending and production indicators has been weaker than I expected, and I am worried about the disappointing string of retail sales reports.

On the inflation front, I continue to expect inflation to move up gradually to 2 percent over the next few years as the labor market tightens. The core price data have come in roughly as I expected, at least after adjusting for the one-time effect of the surprise in ACA reimbursements. And survey-based measures of expected inflation have stayed stable, even though, as we discussed, market-based measures remain very low. As Simon Potter noted earlier, the correlation of recent movements in inflation compensation with recent shifts in oil prices suggests that the decline in inflation compensation may reflect some type of over-extrapolation by investors of what presumably are transitory effects of shifts in energy prices.

If we adopt alternative B, one criterion for an initial tightening is that we need to be reasonably confident that inflation will move back to 2 percent over the medium term. For the remainder of this year, my guess is that it will be hard to point to data demonstrating that inflation is actually moving up toward our objective. Measured on a 12-month basis, both core and headline inflation will very likely be running below 1½ percent all year. That means that if we decide to start tightening later this year, a development that I think is likely, we will have to justify our inflation forecasts using indirect evidence, historical experience, and economic theory.

The argument from history and economic theory seems straightforward. Experience here and abroad teaches us that, as resource utilization tightens, eventually inflation will begin to rise. To me, this seems like a simple matter of demand and supply. So the more labor and product markets tighten, the more confident I'll become in the inflation outlook. Because of the lags in monetary policy, the current high degree of monetary accommodation, and the speed at which the unemployment rate is coming down, it would, to my mind, be imprudent to wait until inflation is much closer to 2 percent to begin to normalize policy. I consider this a strong argument for an initial tightening with inflation still at low levels, and it's one that I plan to make. But I also recognize and am concerned that, at least in recent years, the empirical relationship between slack and inflation has been quite weak.

The argument from indirect evidence will be more complicated. One important thing to point to, I hope, will be the continued stability of survey measures of expected inflation, and I would certainly welcome seeing a backup in market-based measures of inflation compensation that would improve my confidence. I'll also feel more confident in the inflation outlook if any downward movements we see in core inflation can be relatively easily attributed to movements in energy prices and the dollar, which I expect to be transitory. Thus far, as the nicely done box in the Tealbook on the topic discussed, it looks as though the pass-through of energy prices to core inflation has been quite small. The appreciation of the dollar is holding down import prices, and that's already showing up in goods prices such as those for apparel, which has a relatively high import content. However, price increases for items with low import content, such as non-energy services, have been little changed over the past year. This pattern has two implications for our communications. First, we can probably point to these data and stable inflation expectations as evidence that we don't face a growing persistent deflation problem. Second, if the dollar doesn't keep rising, then we should see inflation in these import-intensive categories moving back up over time.

With respect to the behavior of wages, many observers are arguing that we should hold off tightening as long as nominal wage gains remain low, because that's prima facie evidence that considerable slack remains in the economy. Some have gone further and urged that we hold off tightening until real wages are growing more in line with trend productivity, something many models view as a basic equilibrium condition. Although, in common with the Tealbook projection, I expect nominal wage growth to move up over time, I intend to resist establishing faster wage growth as a prerequisite for an initial tightening, for several reasons. First, we don't know what trend productivity growth is or will be, so we cannot be sure what the equilibrium rate of real wage growth should be. Second, real wage gains have been falling short of estimates of trend productivity growth for at least the past 15 years for reasons that are not fully understood but are presumably exogenous with regard to monetary policy, and these may continue into the future. Third, downward nominal wage rigidity may have given rise to pent-up real wage cuts that could restrain wage growth for some time to come. And, finally, the evidence that nominal wages are a useful predictor for future price inflation simply isn't very strong.

My final point is that, as we all know, liftoff is only the first step toward policy normalization, and I plan to emphasize in my own communications that even after liftoff, policy is likely to remain very accommodative for quite some time.

Let me stop there and inquire about your preference: We could ask Thomas to give his briefing for the monetary policy round, if you have patience for a bit longer, or we could defer until tomorrow morning.

VARIOUS PARTICIPANTS. Defer.

CHAIR YELLEN. Defer?

MR. KOCHERLAKOTA. I'm glad to see the patience in the group. [Laughter]

MR. WILLIAMS. How come we don't have patience?

CHAIR YELLEN. Okay. We'll defer, and we will also take up, first thing in the morning, the resolution on quarter-end term RRP testing. We're starting at 9:00 a.m. tomorrow.

MR. LAUBACH. The resolution has already been voted on. We'll take up the minutes part.

CHAIR YELLEN. Yes. That's right.

[Meeting recessed]

March 18 Session

CHAIR YELLEN. Okay, folks, let's get going. We're going to start this morning by revisiting the proposed March minutes language on the additional points concerning normalization, and I'm going to turn this over to Thomas.

> MR. LAUBACH.[7] Thank you, Madam Chair. You have in front of you a handout titled "Revised Proposed March Minutes Language," which represents our best effort at threading the needle. First, you see there two changes in red—namely, a change from "will" to "intends to," which participants already agreed to yesterday. Then two changes are noted in the final bullet. That sentence is still in there. It includes the "fairly soon" language, but it does add that "the Committee expects that it will be appropriate to reduce the capacity of the facility fairly soon," which indicates that there would be an assessment on the part of the Committee. We also propose to strike the word "available" since, actually, the term "available capacity" had not been used earlier in these bullets. The beginning of that final bullet speaks about aggregate capacity, and it seemed to be simpler to just talk about capacity here.

CHAIR YELLEN. Thank you. Are there any comments? [No response] Okay. Then I'd like to ask for a show of hands among all participants. I'm going to take a straw poll here to find out who supports this language being added to our normalization principles. Can you raise your hand if you're supportive? [Show of hands] Okay. And is there anyone who is not? [No response] Okay. Well, it looks as though we have unanimous support. Thank you, all, for cooperating on this. Let's now move to our policy round, and Thomas will begin it with his briefing.

> MR. LAUBACH.[8] Thank you, Madam Chair. Before I launch into my briefing, I just wanted to point out that you also have in front of you a handout titled "Updated SEP Information." There were two changes to projections between Don's presentation yesterday and this handout. One participant lowered their federal funds rate at the end of 2015 by 25 basis points, so one of the dots at the end of 2015 shifted down by 25 basis points. And one participant reduced the unemployment rate projection for the end of 2015 by 0.1 percentage point. That changes, actually, the range of the unemployment rate projections by the end of 2015. What you have in front of you are the exhibits as they will be shown at the press conference and as they will be made available to the public at 2:00 p.m. So the dot plot no longer shows the

[7] The materials used by Mr. Laubach are appended to this transcript (appendix 7).
[8] The materials used by Mr. Laubach are appended to this transcript (appendixes 8 and 9).

medians and central tendencies of the Taylor rule prescriptions that Don showed yesterday.

That provides me also with a segue into my briefing, and I would like to direct you to the material that was distributed yesterday, "Material for Briefing on Monetary Policy Alternatives." I should mention that the material that you find on exhibit 1 does not reflect these two changes that I just pointed out, but they would affect the results that I'm showing in this exhibit only by a very small amount.

As Don Kim noted in his briefing, many of you made downward revisions to your projected federal funds rate paths. The upper-left panel of your first exhibit presents, in somewhat different form, the same information that Don showed in the fourth exhibit of his briefing, the one that included the median dots and central tendencies of the Taylor rule prescriptions. In particular, I first calculate for each of you the values for the federal funds rate at the end of 2015, 2016, and 2017 that a noninertial Taylor (1999) rule, shown to the right, would prescribe based on your individual estimates of the longer-run normal unemployment rate and your projections for core PCE inflation and the unemployment rate through 2017. So the symbols in the Taylor rule shown to the right—the symbol π denotes four-quarter core PCE inflation, and the letter u stands for the unemployment rate. In these calculations, I use your estimates of the longer-run real federal funds rate as intercepts, the r^*_{LR}. I then subtract these prescriptions from your actual projections for the federal funds rate. The median difference between your projections and the rule's prescriptions is close to minus 1½ percentage points in 2015 and 2016, as shown by the blue dots to the left; by 2017, it narrows to about minus ½ percentage point. The differences in 2015 are, on average, slightly smaller than they were in your December projections, and in 2016 and 2017, they are slightly larger.

Given these sizable differences, it might appear that your policy projections imply a high degree of policy accommodation, perhaps reflecting considerations such as an assessment that risks to the macroeconomic outlook remain asymmetric as long as the federal funds rate is at the lower bound. But are these shortfalls relative to the Taylor (1999) benchmark a good measure of the degree of monetary accommodation implied by your projections? To answer this question, I use a version of a textbook, as it's called, IS equation, shown in the middle panel, which relates the unemployment gap (u minus u^*), as a measure of the cyclical position of the economy, to the real rate gap, defined as the deviation of the real federal funds rate (r) from a time-varying equilibrium level (r^*). As shown by the equation, this equilibrium real rate has the property that, if the actual real rate was kept at its equilibrium level, over time the unemployment gap would close. Thus, in this set-up, the equilibrium real rate is a medium-run concept that varies over time, capturing persistent shifts in the position of the IS curve.

I estimate the coefficients on the lagged unemployment gap and the lagged real rate gap in this equation using historical data for the fourth quarter of each year so as to be consistent with the data that you provide in your SEPs. I use the staff's historical estimates for u^* and estimates for r^* taken from the model that President

Williams and I developed some years ago. With these coefficients in hand, I then insert each participant's projected values for the unemployment rate and the real federal funds rate, as well as his or her estimate of the longer-run normal unemployment rate, and solve the equation for the implied value of the time-varying *r** at the end of each year.

These implied values are shown in the lower-left panel. The median is close to zero in both 2015 and 2016 and rises to a little above ½ percent by 2017, still well below the longer-run median estimate of 1¾ percent. These temporarily low levels of the implied equilibrium real rate reflect the fact that your projected paths for the real federal funds rate run well below your longer-run normal values. In such circumstances, the IS equation, shown in the middle panel, would predict substantially faster declines in the unemployment rate than shown in your projections if *r** was at its longer-run value. To reconcile your unemployment rate projections with your real rate projections, it must be the case that *r** remains depressed for some time. Put differently, the fact that most of you expect the unemployment rate to remain close to your estimates of its longer-run normal value over coming years implies that the real rate *gap* cannot be particularly large.

This analysis suggests that the differences relative to the Taylor (1999) benchmark with the longer-run *r** value as the intercept may be somewhat misleading as an indication of policy accommodation. In the lower-right panel, I repeat the Taylor rule calculation shown in the upper-left panel after replacing your longer-run normal value for the real federal funds rate with the time-varying *r** values. The median difference between your projected federal funds rates and those prescribed by this version of the Taylor (1999) rule is close to zero at the end of both 2015 and 2016 and about ¼ percentage point in 2017, substantially narrower than the ones shown in the upper-left panel.

The bullets in the upper panel of exhibit 2 mention a few caveats to this analysis. The results are conditional on the specification of the IS equation. A different model of the transmission of real interest rates to real activity might produce different estimates of the equilibrium real interest rate. Moreover, this simple model does not provide insight into the structural factors that underlie the estimated changes in *r**. That said, it seems plausible that, as several of you suggest in your SEP narratives, lingering effects of the financial crisis and considerable restraint from economic and financial developments abroad may play some role.

Let me now turn to today's policy decision and the draft alternative statements. First, I want to thank everyone for responding to our earlier drafts with valuable feedback. Judging from those communications, the key judgment that you face today is how to replace the "patient" language with new forward guidance that maintains the option to raise the target range for the federal funds rate at any meeting, beginning in June, and describes broad conditions under which you will determine that liftoff is warranted.

Rather than go through each alternative statement separately, I want to focus on how the alternatives address the issues that appear to be central to your decision today. First, the revised statement will provide an update of your assessment of the current inflation situation and your confidence in the outlook for inflation. As indicated in the middle panel, all three of the statements report that inflation has declined further below the Committee's longer-run objective and is anticipated to "remain near its recent low level" in the near term. However, the alternatives offer different options for characterizing recent movements in inflation compensation and express varying degrees of confidence in the outlook for inflation. Alternative B notes that market-based measures of inflation compensation remain low, but that survey-based measures remain stable. Alternative B also retains the earlier expectation that inflation will "rise gradually toward 2 percent over the medium term." Alternative C states that measures of inflation compensation have increased, and that inflation "will" reach the 2 percent objective. It also notes that survey-based measures remain stable. In contrast, alternative A expresses clear concern that inflation will return only "very gradually" to the Committee's 2 percent objective and could remain below it "for a protracted period." Moreover, alternative A emphasizes that measures of inflation compensation "remain well below levels observed last summer." I should also point out that, given the drop in crude oil prices in recent days, the alternative B in front of you deletes the reference to "earlier" in describing energy price declines in paragraph 1.

Moving to the forward guidance, the issue before you is how to revise the guidance in order to both communicate more specifically the data dependence of a decision to increase the target range for the federal funds rate and shape expectations regarding the likely timing of liftoff. Regarding labor market conditions, your SEP submissions indicate that most of you anticipate further improvement and expect that the unemployment rate will have declined another couple of tenths by the time that liftoff will be warranted. Thus, your expectations for progress toward the maximum employment goal are broadly represented across the forward guidance in all three draft alternatives. The alternatives differ on the characterization of inflation prospects that would warrant a liftoff decision. Alternative B indicates that you would want to be more, or at least not less, confident that inflation will return to your 2 percent objective over the medium term. Alternative C suggests that you are already sufficiently confident to signal liftoff soon. And alternative A states that you would need to see clear evidence that inflation was moving up to 2 percent.

Looking at how the three alternatives may shape expectations for the timing of liftoff, alternative B states that, in addition to further improvement in the labor market, the Committee will need to be "reasonably confident" that inflation will move back to its 2 percent objective "over the medium term," and thus provides flexibility to make ongoing data-dependent assessments of economic conditions. The data dependence is reinforced with the addition of the sentence stating that the change does not indicate that the timing of the first increase in the federal funds rate has been decided. Moreover, in order to bridge the forward guidance from the presumed time dependence associated with the "patient" language, alternative B specifically says that an April liftoff is unlikely. According to your SEP submissions, at present, about half of you see the appropriate timing of the first increase in the target for the federal funds rate as early as June, while the other half expects that the decision will not be made until later this year. As Simon noted in his briefing, market expectations are broadly similar.

Some of you may be sufficiently confident about the outlook for both the labor market and inflation to want to boost the odds of liftoff in June by substituting "in a couple of meetings" for "patient," as in alternative C. Finally, others may want to express more firmly the Committee's commitment to its inflation objective, as in alternative A, extending the decision to be patient "until inflation is clearly moving up toward 2 percent" and asserting that the Committee would "use its tools as necessary" to reach that objective in two or three years—signals that likely would push forward the expected timing of liftoff.

Thank you, Madam Chair. That concludes my prepared remarks, and I'll be glad to take any questions.

CHAIR YELLEN. Thank you. Are there questions? President Evans.

MR. EVANS. Thank you, Madam Chair. Thomas, that was a very interesting analysis, which led me to think about a couple of things. One, you mentioned the shortfalls in relation to the Taylor (1999) rule benchmark, asking whether they are a good measure of monetary policy accommodation. Is there any empirical work that you did with this that might indicate, when you see residuals of this magnitude, whether they are often followed by stronger inflation or stronger growth over the time series that you used? I'd find that interesting to know, in light of our increased inflation expectations, whether that's in line with history.

MR. LAUBACH. I haven't specifically looked into that particular issue: "What if you had run the Taylor rule with a constant intercept? At times that followed when you saw large deviations from that, would you have seen subsequently high inflation?" I haven't looked into that. That's an interesting idea.

MR. EVANS. Okay. Could I ask you a question about interpreting the lower-left chart on assessing individual members' *r**? Am I right that the takeaway here is, the dots that are higher could be thought of as participants who are more confident the Wicksellian rate of interest is higher, but the participants who have the negative ones have more concerns that that's not the case? Is that the way to interpret that?

MR. LAUBACH. I think the higher dots are primarily driven by a combination of higher paths for the federal funds rate and continued declines in the unemployment rate. As you can tell from the equation in the middle, it is essentially that, from the change in the unemployment gap, you take signal about how accommodative policy was. So if a participant has a relatively high projection of the real federal funds rate and, on top of that, sees the unemployment rate declining further, that must be a participant who has a relatively high estimate of the equilibrium real rate.

MR. EVANS. Okay. Lastly, in the statement, in the first paragraph of alt-B, you talk about market-based measures of inflation compensation. There's been a lot of changes in the description here, and now it's just "remain low." Yesterday, in my own comments, I said that it was modestly comforting that those had risen. Is that still the case, or where does that stand relative to our January meeting?

MR. LAUBACH. I've been looking at the five-year, five-year-ahead breakevens. From the first day of the January meeting, they increased about 20 basis points and have since retraced 15 of those 20. So right now, they're up, on net, 5 or 6 basis points.

MR. EVANS. Not a complete round trip. Okay. Thank you.

CHAIR YELLEN. President Williams.

MR. WILLIAMS. Yes, I also have a question on paragraph 1 in alternative B, and it's about, again, the change in the language in the blue and red. In the sentence that says "Household spending is rising moderately," it refers to "earlier declines in energy prices have boosted household purchasing power." Later in the paragraph, it says "Inflation has declined further . . . , largely reflecting declines," and the word "earlier" is crossed out. I was wondering if there's actually a reason to have "earlier" in one place and not the other. Is there something we're trying to communicate with that? It just seemed funny there, or maybe I'm misreading it.

MR. LAUBACH. No, obviously not. I think the statement in the inflation sentence was more trying to indicate very recent movements in energy prices based on the idea that they feed into headline inflation relatively quickly. It is our assessment that, actually, the boost to household spending is showing up only over time. Now, the sentence does refer to household purchasing power. I'm not quite sure how quickly that feeds through.

MR. WILLIAMS. If I can break right now from the rules on making a comment on language, I think symmetry would suggest not having "earlier" in either case and just saying "declines"—unless we're trying to say something.

MR. FISCHER. I think they relate to different things. What could make them consistent is simply that households take a while to react.

MR. WILCOX. This could also reflect the staff taking a while to react. [Laughter] It might be about 48 hours out of date, before energy prices came back down.

MR. LAUBACH. So would you prefer to go, actually, back to the old language and just say "recent," or would you drop "earlier"?

MR. WILLIAMS. I would just say "declines" in both cases because I think they're factually true.

MR. WILCOX. I think the issue is less material now, with oil prices back down at their basement level.

MR. KAMIN. Now what is true is that, in some sense, oil prices were declining nearly monotonically through late January.

VICE CHAIRMAN DUDLEY. Then they bounced.

MR. KAMIN. Then they went up and back down. So they have, netting out over the intermeeting period, flattened out. In that sense, the "earlier" could be correct, but it might be easier just to delete it.

CHAIR YELLEN. Cross it out.

MR. KAMIN. Both times.

CHAIR YELLEN. Yes. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Madam Chair. I would just point out to the Committee that "earlier" also appears in paragraph 2, in the penultimate sentence.

VICE CHAIRMAN DUDLEY. Yes, I would take it out in both places. Wasn't that your suggestion?

MR. WILLIAMS. Yes.

MR. KOCHERLAKOTA. Yes, I think it would conform with President Williams's suggestion to take it out there as well.

CHAIR YELLEN. Okay. On this point, is there anyone who would object to crossing out "earlier" in both places? [No response] Okay. Let's do that. Further questions? President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Madam Chair. I wanted to follow up on the staff's presentation yesterday about the recent correlation between oil price movements and five-year, five-year-forward breakevens. I looked at a longer stretch of data than the staff presented to us, and it didn't seem as though that correlation was as strong in previous years. So I was wondering what thoughts the staff had on the reason for the tight correlation over the past few months.

VICE CHAIRMAN DUDLEY. It's a bit of a mystery, isn't it?

MR. KAMIN. We talked about this a little bit this week in our Board meeting, and we agreed that we didn't have any great ideas or any conclusive evidence. Because it's clearly the case that near-term movements in oil prices should not have implications for inflation 5 to 10 years down the road, we did talk about the possibility that they must be proxying for something else, such as, perhaps, anxieties or uncertainties about the global outlook. And you could imagine that the uncertainties about the global outlook are pushing down the inflation compensation. You could also imagine investors looking at these declines and basically reading through to inflation compensation. The fact that those correlations have become more evident over the past half year or so is suggestive of that hypothesis because it has been in the past half year that there has been mounting anxiety about the global outlook. But, beyond that, we don't have a lot, and we're going to continue to investigate.

CHAIR YELLEN. Two-hander? Question?

VICE CHAIRMAN DUDLEY. Yes. Just to add to that, it also could be a bit of an anomaly of the market itself in the sense that, when oil prices drop, TIPS traders have negative carry. You remember that the five-by-five is a construct; it's constructed from the TIPS markets. So to the extent that the TIPS market reacts in any way in terms of the liquidity premium and other factors, this could show through and not have any signal whatsoever about true expectations of inflation on a five-by-five-year-forward basis.

CHAIR YELLEN. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Madam Chair. To reflect on what Vice Chairman Dudley just said, there's some element of that, I think, in the TIPS markets. I believe you'll see less of that in the zero-coupon inflation swap market, and there you still see that over the past six months, these lower-frequency movements are still material. One idea that occurred to me is that the fall in oil prices means that headline inflation is going to be even lower below target for longer, and those lower realizations of headline inflation for longer periods of time could create more concerns about unanchoring.

MR. LACKER. Madam Chair.

CHAIR YELLEN. President Lacker.

MR. LACKER. I thought the carry effect affected the 5- and the 10-year TIPS the same, so it washes out. But is there some asymmetry?

VICE CHAIRMAN DUDLEY. It affects it all. But remember, this is a market with traders who have positions, and they're responding to the profitability of holding inventory or not holding inventory. Bond mutual fund flows are going to also drive the relative yields. So the market may not be perfectly efficient. That's all I'm saying.

MR. LACKER. We'll debate efficiency some other time.

VICE CHAIRMAN DUDLEY. I think we'll be debating that forever, Jeff.

MR. KOCHERLAKOTA. Vice Chairman Dudley has just waved a red flag for President Lacker. [Laughter]

CHAIR YELLEN. President Bullard.

MR. BULLARD. Thank you, Madam Chair. I want to go back to exhibit 1 and the analysis of the SEP. As I understand the argument, if we just go by Taylor (1999), the Committee looks pretty dovish, according to the first figure. And you might be able to rationalize that if you think r^* is moving around.

Now, one thing I would say about that is, Taylor (1999) was rationalized based on an application to past U.S. data, and the argument was that it fit the data pretty well and we got pretty good outcomes. There are even models that might rationalize Taylor (1999) as an optimal monetary policy rule. If you say, "Okay, now we're going to substitute in the time-varying *r**," we lose that rationalization, and we're not sure if that's really a good monetary policy rule or not. So I think it might warrant further research. If that's what you think is happening around the Committee and around monetary policy generally, it might warrant further research to ask, "Would it have been a good idea historically to follow the variations in *r** the way it's being described here in the bottom panel?"

MR. LAUBACH. I think I exercise truth in advertising by admitting that part of the sausage is the Laubach-Williams estimate of *r**. That estimate just shows a very unusual movement in recent years. So maybe one way of reconciling these two things is that, actually, prior to the crisis, you would not have observed such large gaps, and because these gaps are really much more pronounced now, it looks as though this time-varying measure of *r** has declined so sharply. Maybe that's why, in studies that used earlier evidence indicating you didn't have such sharp deviations of *r** from a longer-run average, this effect wasn't so pronounced.

MR. BULLARD. Yes. I think one response to that is, you could look at cross-country evidence and start tracking instances in other countries in which *r** did vary, and you could see whether this is a good idea or not.

MR. LAUBACH. Yes.

CHAIR YELLEN. President Lacker.

MR. LACKER. Thank you, Madam Chair. You've obviously done a fair amount of work for this. When I was looking at this exhibit yesterday afternoon, I saw the first two panels and thought to myself, "Okay, you're comparing what Taylor (1999) with our submissions the right-hand side would predict for interest rates with what we actually put in for the interest rate, and that Taylor (1999) is a fixed *r**." I'm thinking, "Okay, well, the difference must be that we have time-varying *r**'s that are particular to each of us. And if you just put that in there, you can make all of these dots go right on that zero line. You can take all of the discrepancy and put it into the time-varying *r** for each one of us." But you did more work than that. That seemed really simple compared with what you did with this equation and so on. So I'm wondering, what am I missing here? What did all of this other analysis add to the picture? Apparently, I'm not learning all you've intended to teach us about this.

MR. LAUBACH. I think one way to interpret the bottom two panels is that, actually, what I do in the left-hand panel takes no information from the Taylor rule at all. Look at the bottom left—your *r** estimates. Those come out of the IS equation shown in the middle. That doesn't include anything from the Taylor rule.

MR. LACKER. This is our *r**?

MR. LAUBACH. Exactly. This is your *r** that I backed out from the equation shown in the middle. Sorry, I should be careful here. I'm using your projections, and I'm backing out something that I do not necessarily want to attribute to you. You may not agree with it, but that's the calculation.

MR. LACKER. Well, it's a mixture of me, you, and John. [Laughter] Okay, so then what's there is from the IS curve.

MR. LAUBACH. The key thing is, I'm essentially arriving from two different points at a fairly similar conclusion. One is, I could simply look at the upper-left panel and say, "Okay, let me just take these differences that are shown there relative to the rule's prescription as the amount by which I need to reduce your longer-run *r** to get your short-run *r**." But that's not what I'm doing. What I'm doing is, I'm using this middle equation, which knows nothing about the Taylor rule, and I'm deriving from that, based on this IS equation relationship, what the implied r^*'s are. Lo and behold, when you then move to the lower-right panel, that actually does line up relatively closely to what you had in mind to do. So you are arriving at similar answers from two completely separate thought processes.

MR. LACKER. And these Laubach-Williams estimates of r^* don't use the Taylor rule?

MR. LAUBACH. No.

MR. LACKER. What does this tell us about a policy? It seems r^* is sort of small for all of us.

MR. LAUBACH. Yes. It essentially means that, on balance, your projections seem to be consistent with a view that the IS curve still has some ways to move out to its longer-run normal position.

MR. LACKER. Okay. So we get the same answer two different ways.

MR. LAUBACH. Yes.

MR. LACKER. Great. Okay. Thanks.

CHAIR YELLEN. Any further questions? Governor Brainard.

MS. BRAINARD. I'm guessing that you want to start moving on to the statement, and that you've got a press conference coming up. Just one thing: This is more something to be noted, because I think it's factually accurate, than a suggestion to change the statement. But now that we are focused on current forces that are driving inflation, I would just say that core import prices are also relevant in that sentence. I understand that we're not taking that on board this month, but, clearly, core is also low relative to where we would expect it to be, and core import prices are obviously a factor there.

CHAIR YELLEN. I'm sorry. Where are you proposing this?

MS. BRAINARD. I'm not proposing it, because I don't want to create a lot of additional wordsmithing. But in the sentence that says "Inflation has declined further . . . , largely reflecting declines in energy prices"—previously it was focused on earlier declines in energy prices—in terms of coincident forces that are a factor, obviously core import prices are also pushing inflation down.

CHAIR YELLEN. But you're not proposing to change it?

MS. BRAINARD. I don't want to spend another half-hour, knowing that you'd like to continue moving along.

CHAIR YELLEN. Okay. Thank you. If I could just start our round off with a couple of comments. I think the economy has made considerable progress toward our objective of maximum employment. And, because of the likely eventual implications of that progress for the inflation outlook, I believe it serves us well to remove "patient" from our policy statement at this time. Doing so will provide us with the flexibility to raise the federal funds rate at any meeting after April, with the actual timing dependent on how the economy evolves. I don't view the removal of "patient" as a signal that liftoff in June is particularly likely. In my press conference, I intend to make it clear that the modification of our forward guidance doesn't mean that we've determined the timing of liftoff, and that such timing will depend on the Committee's assessment of incoming information.

In particular, I plan to indicate that the Committee will not necessarily raise rates in June. That said, I also want to be clear that a June liftoff cannot be ruled out. Between now and the June FOMC meeting, we will receive three more employment reports. Like most of you, I see room for further improvement in labor market conditions, and I expect the rate of decline in the unemployment rate to slow some in the months ahead. But it is possible we could see a continuing rapid decline in the unemployment rate, which could be approaching 5 percent by the time of the June meeting.

On the other hand, readings on inflation are likely to remain uncomfortably low. At the time of the June meeting, the latest inflation readings will be for April. The staff projects that the 12-month change in total PCE prices will be just 0.2 percent in April, and that for core PCE prices will be just 1.2 percent. And the trend may not be our friend, in that inflation may well soften further for a few more months, especially if the dollar continues to appreciate as we get closer to the beginning of the normalization process.

As I noted in the economic go-round, I have tried to avoid establishing any simple criterion for achieving reasonable confidence that inflation will move up to 2 percent. I have thus far emphasized—and I intend to continue emphasizing—that we do not have to see an increase in core inflation or an increase in nominal wage growth that would achieve the confidence that's needed for us to move, and that we intend to consider a broad range of data and evidence in arriving at that judgment. Further labor market improvement on its own will work to improve my confidence in the forecast that inflation will move back up to 2 percent. But if core inflation, nominal wage growth, or measures of inflation expectations move the wrong way, I think we may find a decision to commence tightening quite challenging. These uncertainties about the outlook for inflation and the labor market are precisely why moving to a meeting-by-meeting footing in our policy deliberations is appropriate.

As a final point, I intend to acknowledge and communicate that, if the economy evolves in line with our forecast, increases in the federal funds rate over time are likely to be gradual. Indeed, in line with Thomas's analysis, if r^* is gradually rising as the headwinds that have held back the recovery continue to abate, a gradual rise in the federal funds rate is likely to be appropriate. Of course, it's also true that a gradual rise is required just to keep the level of monetary accommodation constant. We may not know if this is an accurate description of how the economy is operating until we see how it reacts to higher interest rates. So, as a result, I favor a cautious and deliberate approach to tightening policy. Let me stop there and begin our go-round with President Lacker.

MR. LACKER. Thank you, Madam Chair. I can support alternative B. It drops the word "patient" and thus keeps June on the table, which I think is essential, because if the data come in reasonably close to our forecast, I think we should raise rates in June. While I support the new forward-guidance language, it's important to be aware that it introduces some important internal tension into the statement. The new language states that the Committee anticipates raising rates "when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term." This seems to leave open the possibility that we are not now reasonably confident that inflation will move back to our objective. In contrast, the second paragraph states that we expect "inflation to rise gradually toward 2 percent over the medium term." In the broader context of that paragraph, I take this to mean that we are confident that our future policy actions will bring inflation back to 2 percent.

So our new forward-guidance language appears to be in conflict with the second paragraph, because it seems to suggest we're not confident about our future conduct of monetary policy. This is an awkward and potentially confusing implication to convey. One way to reconcile the two passages is to change the forward-guidance language to read "remains reasonably confident" instead of "is reasonably confident," implying that we are now confident. Another approach would be to interpret the "reasonably confident" language as conditional on raising rates—in other words, to interpret the forward-guidance language as meaning to say that the Committee anticipates raising rates “when it has seen further improvement in the labor market and is reasonably confident that an increase in rates is consistent with inflation moving back to its 2 percent objective over the medium term.” Now, rewording the forward guidance this way would eliminate the apparent conflict with the second paragraph. The language there is about our confidence that our policy will get inflation back to 2 percent, while the language in paragraph 3 says that, to raise rates, we want to be reasonably confident that raising rates won’t prevent us from getting back to 2 percent.

I understand that, given the weeks and months of deliberations that have gone into crafting this language, this would be a late-in-the-game suggestion to make, so I’m not going to insist on this change. But I think that it’s worth being aware of this tension as we talk about policy in public going forward. In any event, this is something you might have to address in your press conference this afternoon, Madam Chair. And it’s something that, as I said, I think we should be continually aware of.

Looking ahead at how the data might come in between now and June, I believe it’s important to recognize that we could be reasonably confident about inflation then—as you said, Madam Chair—even if the monthly readings on core inflation continue to bounce around at a relatively low level. Certainly, we’d rather not see persistently soft core inflation, but our focus should be on the outlook for inflation, not on realized values. In particular, I don’t think we should convey that a substantial rise in reported core inflation is in some way a precondition for lifting off in June. Setting a high bar by waiting to see a vigorous rise in actual inflation ignores the long and variable lags that we know are associated with monetary policy, and it risks a return to the “go-stop” regime that made monetary policy a driving force behind real fluctuations.

As I noted at the outset, if conditions evolve close to expectations over the next few months, then I'm likely to argue for a rate increase in June. If so, I will do so based on the premise that we should set our monetary policy instrument so as to align the real short-term interest rate with the economy's underlying real fundamentals. What do we know about those fundamentals? Over the past three years, we've seen the following: Consumption has grown at an average annual rate of 2.5 percent, a number we last saw in the fall of 2007; the unemployment rate has fallen almost 3 percentage points, from 8.3 percent to 5.5 percent; and employment has grown at a 1.9 percent annual rate, a number we last saw in the spring of 2001.

Over the same time period, the short-term real interest rate has been below negative 1 percent. Our understanding of the relationship between the natural real rate, as it's called, and observable variables is admittedly imprecise. But I think both theory and experience tell us that a real interest rate of negative 1 percent is unlikely to be consistent with continuing low inflation in the face of the steady growth we've seen in the real economy. Granted, the natural real interest rate may have shifted down in recent years, but I'd note that attempts to quantify that decline, such as those based on the work of Laubach and Williams, did not generate anything like the current level of real rates. So I think a strong case can be made that our policy rate should be higher right now, and June represents the first opportunity to raise rates without contradicting our past forward guidance. Thank you.

CHAIR YELLEN. Thank you. President Kocherlakota.

MR. KOCHERLAKOTA. Thank you, Madam Chair. I support alternative A, with one change. At the end of paragraph 3, alternative A says that the FOMC will "use its tools as necessary to return inflation to 2 percent in two to three years." I would suggest rewording "two to three years" to be "one to two years." This is the definition of "medium term" that we used in past statements, and I don't see a reason why we would change it now.

I favor this modified version of alternative A because it promotes maximum employment and it promotes price stability. In terms of promoting maximum employment, I agree with the assessment of the Tealbook, Book B, that alternative A would be seen as an unexpected increase in monetary accommodation. That additional stimulus would generate extra demand for goods and services. The extra demand for goods and services would lead employment to grow more rapidly, induce employers to convert part-time jobs to full-time ones, and further increase job-finding rates for the nonemployed. I see all of these effects as being consistent with promoting maximum employment.

Of course, I could always cite these beneficial employment effects as a justification for adding monetary stimulus. As policymakers, we always need to weigh these benefits against the all-too-familiar potential costs of stimulus—the risks of unduly high inflation and financial instability. These costs seem very small at the current time. In terms of prices, the inflation outlook remains subdued. Like the Board's staff, I don't expect inflation to rise back to 2 percent for several years. In terms of financial stability, I see no risks that are material for the macroeconomy. As the Tealbook, Book B, observes, signs of excessive risk-taking are not widespread, and use of short-term financing instruments and indicators of leverage remain moderate.

I've described how the incremental risks to financial stability or inflation associated with further stimulus seem small to me. I should emphasize that, unlike the objective function posited in the Tealbook, Book B, my own objective function does not include losses associated with the unemployment rate falling below u^*. As an economist, it's unclear to me what kind of social waste would be generated by additional job creation, especially given current levels of employment and other labor market metrics. As a policymaker, I do not see this formulation in the FOMC's objective function as being consistent with our mandate to promote maximum employment.

So alternative A promotes maximum employment. Let me turn to how it promotes price stability. I interpret the heart of this mandate as keeping inflation expectations anchored at 2 percent. There are three relevant facts. The first fact is that PCE inflation has been below target for nearly three years. As well, with the exception of a brief period at the end of 2011, core PCE inflation has been below 2 percent for closer to seven years.

A second fact is, my inflation outlook, like that of the Board's staff, remains low. Under the monetary policy assumptions of the Tealbook, Book A, I do not foresee inflation returning to target in a sustainable way until 2018. My outlook, like that of the Board's staff, incorporates estimates of the slope of the Phillips curve from the past 20 years, which is quite flat. Others around the table have more confidence that the Phillips curve will revert to the steeper slope that was seen prior to that time period, and I guess that's obviously a difference in perspective that we might be able to receive more information about as we go forward.

The third fact is that there's been a market slide in market-based measures of longer-term inflation compensation, and they remain near historical lows. On this third fact, I want to note that I believe we can think about two different kinds of signals out there in terms of how anchored inflation expectations are. One signal is coming from the surveys, and one signal is coming from market-based measures. These are both noisy signals. The usual approaches to decision theory would not say that we should simply ignore one of those signals and just rely on the one that's remained constant to form our assessments. A more typical approach to decision theory would try to put weight on both signals and, with humility, conclude that there has been a change in the landscape over the past six months in terms of how anchored we should think inflation expectations are.

Taken together, all three of these facts—that realized inflation has been as low as it has been for as long as it has been; that the outlook remains so low, unless we have a steeper Phillips curve than we've seen in the past 20 years; and that market-based measures of longer-term inflation compensation have slid so low—suggest that the baseline monetary policy stance outlined in the Tealbook, Book A, is creating a significant risk of inflation expectations sliding permanently below 2 percent. And this risk is especially troubling in light of how hard it's been for other central banks to engineer increases in inflation expectations.

Now, I view this unanchoring of inflation expectations as intrinsically problematic in terms of the price-stability mandate. We should also keep in mind that a permanent slide of inflation expectations creates first-order losses in terms of the FOMC's performance with respect to the employment mandate. In a low-inflation scenario, the zero lower bound would bind more frequently, and the ability of the FOMC to buffer the economy against recessionary shocks would be degraded. So that binding constraint creates first-order losses, not second-order losses. This degradation would be especially severe if the long-run real natural rate of interest ends up being very low.

To sum up, Madam Chair, I recommend that the FOMC adopt alternative A because it promotes both maximum employment and price stability.

Let me say a couple of things about alternative B. In contrast, alternative B removes the word "patient" as a characterization of the FOMC's policy stance. I was very heartened to hear, Madam Chair, what you are planning to say in your press conference by way of modulating what might be conclusions reached by market participants and others about what we mean by removing the word "patient." Just based on the survey evidence that we saw from the New York Fed, keeping the word "patient" would reduce the perceived probability of a June liftoff, I think, to near zero. Removing the word "patient" pushes that perceived probability of a June liftoff upward to be closer to 40 percent. So just removing the word "patient," in and of itself, is a tightening of monetary policy. I'm opposed to such a move at this time. This tightening of policy will reduce the projected rate of employment growth and the projected rate of increase in the inflation rate toward 2 percent. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Evans.

MR. EVANS. Thank you, Madam Chair. I can support alternative B today as written. I recognize that you and the Committee are at the point when we want to actively entertain the possibility of lifting off beginning in June, and every meeting thereafter is a possibility. To achieve this flexibility for liftoff, it is important to dismantle all elements of our calendar-based guidance and rely simply on meeting-by-meeting conditional assessments. I can support removing "patient" today and replacing it with meaningful conditional guidance in the form of a statement that we won't raise rates until we have reasonable confidence that inflation will move back to its 2 percent target over the medium term. As long as "confidence" represents a meaningful economic threshold, I can support alternative B.

But let me discuss how I think about some of the nuances around this conditionality. Madam Chair, you made a number of excellent points yesterday and again this morning with respect to the inflation outlook at liftoff. In particular, you indicated it could be appropriate to lift off while inflation was still quite low, as long as theory and historical experience gave us confidence that a near-term acceleration must be around the corner. I will likely find such an assessment challenging to support, but it's not impossible. I'm not reasonably confident today.

What continues to worry me is that the Committee may not be seriously embracing the symmetry in our inflation objective. I made a special point of saying this at our January reaffirmation of our long-run strategy. In weighing the costs and benefits of further policy delay at each meeting, I think it is important that the Committee be willing to risk overshooting our 2 percent inflation objective. The increased risk of retreating back to the zero lower bound following a premature exit represents a significant cost to an early liftoff. Unless we accept a substantial chance of inflation overshooting our 2 percent target, we won't be properly balancing the costs and benefits at liftoff in line with our long-run strategy.

If, while inflation is still too low, we lift off early just to ensure that we don't cross our 2 percent inflation objective, that's an enormous problem for me. I personally think it would be overly conservative, in the Rogoff "conservative central banker" mode, to try to thread the needle to get to 2 percent while only staying all the while below 2 percent. I can't see how this would be consistent with a symmetric 2 percent inflation objective. In such a situation, if theory and experience are going to be our guide while inflation is still too low, I strongly believe we shouldn't lift off until theory and experience tell us that we risk having inflation accelerate to, say, 2½ percent or higher. Nothing in the Tealbook or our other forecasts suggests to me that this is close at hand. For me, that would be a stronger and more useful statement about our confidence in theory and experience as being our guides.

My view of appropriate monetary policy continues to be that liftoff should be delayed until the first quarter of 2016. This assessment recognizes the strength of the labor market and economic growth outlook, but it also recognizes that the inflation outlook is too low and highly uncertain. Moreover, I fear that an early liftoff could jeopardize the public's assessment of our credibility regarding our 2 percent symmetric inflation objective. We've spent six years below 2 percent, and we are projecting another two to four years to get back to 2 percent. We are not the ECB or the Bundesbank. We should not be trying our darndest to prevent any crossing of a 2 percent bright line. The stakes for our 2 percent inflation credibility are very large. If we don't get back to 2 percent before this cycle ends, no one will ever think we are serious about our 2 percent goal, except that it's a ceiling. That would be very costly for our future success.

On Friday, my colleagues Jonas Fisher, François Gourio, Spencer Krane, and I will be giving a Brookings paper that discusses the important asymmetry created by the zero lower bound when there's uncertainty about the level of the Wicksellian natural rate of interest. Thomas's figure on the range of participants' r^* assessment is one measure of this range of uncertainty. That's my interpretation of it at least. I don't want to downplay the excellent theoretical work of my colleagues—Jonas, François, and Spence—in our upcoming Brookings paper, but it is not that hard to show that optimal monetary policy under discretion in the workhorse New Keynesian models or older-style Keynesian models implies a strong motive to delay policy liftoff whenever risk and uncertainty increase and a binding and costly zero lower bound looms large. In this situation, there is a motive to build up a buffer stock of economic and inflation improvements in order to reduce the chance that negative shocks send policy back to the zero lower bound.

Having said all of this, I can agree to remove the "patient" language today and move to a meeting-by-meeting assessment. But we should avoid becoming unnecessarily impatient and recognize the major asymmetry and the losses we risk as a result of moving too early in June versus later, as in September or even December. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Mester.

MS. MESTER. Thank you, Madam Chair. I support alternative B today. Based on realized and projected progress toward our dual-mandate policy goals, I believe it's appropriate to make June and meetings thereafter viable options for liftoff. As Chair Yellen pointed out, we're going to have three employment reports before our June meeting, and, in light of the strength we've been seeing, it would be inappropriate at this point to shut down the possibility of a June liftoff. The "patient" language has served the Committee well as a transition. But I've become impatient with "patient," and I think it's time for our statement to lose its "patience," too.

Regarding the proposed forward guidance in alternative B, I can support it, but I'm not convinced it adds, much clarity. It would seem to open up questions about what particular labor market indicators and inflation developments the Committee wants to see before liftoff. So I was gratified to hear the Chair's plan for the press conference. I think that's well said. I don't believe we've come to that consensus. So I'm gratified that Chair Yellen is recognizing that in what she's planning to say at the press conference.

That said, I recognize that the proposed language is similar to language the Chair has used in her testimony. I actually would have a slight preference for it more closely echoing the language that the Chair has used before, because any difference might be viewed by the public as meaning something different and perhaps raising the bar for liftoff, which I don't think is the intention. But I'm confident that Chair Yellen can handle these types of questions in her press conference.

It would seem that the next communications challenge we face is how to convey the idea that we are data dependent, meaning that the first rate increase doesn't necessarily imply that we're on a path of rate increases at each meeting, nor does a pause necessarily signify that liftoff was the wrong thing to do. The Chair has mentioned this in her public statements, and I think it's worth emphasizing it as liftoff gets closer. Managing expectations about the post-liftoff policy rate path would seem to be a key factor in ensuring that liftoff itself is not disruptive. We're also going to need to wean market participants away from detailed forward guidance and move toward language that explains our policy rationale, but not necessarily the timing of every expected action we plan to take. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Lockhart.

MR. LOCKHART. Thank you, Madam Chair. I support the policy decision in alternative B. Regarding the statement, I interpret the forward-guidance language with the removal of "patient" as conveying that liftoff is approaching. April is highly unlikely, but the exact timing after April has not been determined. I think this is the appropriate message coming out of this meeting. This statement, if adopted, puts the Committee in a new decisionmaking and messaging phase. I'd urge the Committee to confer early about how we're going to manage through this phase. In my opinion, it's always advisable to think through our communications strategy one or two meetings ahead, under a couple of plausible scenarios. That is especially the case because of the situation the Committee could face in the next few meetings.

I'm concerned about how to reconcile the tensions between or among preserving decision optionality right up to a possible liftoff meeting; preparing markets by signaling in advance; and remaining disciplined regarding data dependency, having laid down a decision criterion of being reasonably confident. Are we going to help prepare markets by signaling high probability of a liftoff decision at least one meeting in advance? Or are we going to make the decision at a meeting based on the latest data and present that to the markets and public with little or no signaling?

My preferred approach is to give advance signals at a frequency of one meeting. If the Committee is inclined to follow the one-meeting-in-advance approach and it's 50–50 at the April meeting—and I think this is a plausible scenario—we would face a challenging communication situation. It seems to me that we would have to either lay out the reasoning behind a portrayal of June as still in play—and this was President Kocherlakota's point in his quite useful memo last week—or provide some information in April about what we would need to see that would tip the scales to liftoff in June. Assuming continuing strong labor market reports, the scales tipper would likely be price indications that make the Committee reasonably confident that the inflation outlook is satisfactory. I think it is highly unlikely that by April we will have price data in hand to support a verdict of reasonably confident. So, as I said, I think keeping June in play at the April meeting presents a communications challenge. The sooner we tackle the wording options for that scenario, the better, in my opinion.

I'd like to comment on the prospect of a liftoff decision in June. I am skeptical—call it healthy skepticism—we will actually see a clear turn in the inflation trends in the data available for the June meeting. I think it will be difficult to claim reasonable confidence in June, even with strong payroll jobs numbers through the May report. At the risk of being a little tedious, I'll again mention the data calendar. By the June meeting, we will have two further PCE reports, March and April, and one further CPI report, April. The CPI report for May comes out on June 18, the day after the meeting. We won't have any headline May price data at that meeting, although we will have the PPI and some other secondary indicators. So I'm being a literalist here regarding "reasonably confident." And I certainly think it's preferable to derive our reasonable confidence from key inflation data themselves.

The Chair outlined a framework for getting to reasonable confidence based on indirect evidence, historical experience, and theory. Reliance on these elements may require some verbal gymnastics in our communications if June is the meeting—just a cautionary statement. At this point, September seems to me far more comfortable as an alternative. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Madam Chair. I support alternative B as written. I do not expect to be reasonably confident that core PCE inflation is returning to our 2 percent inflation goal by June. Nonetheless, I support dropping "patient" at this meeting, because I believe that we should no longer be giving time-based guidance. Now that we are preparing to lift off from the zero lower bound, we should be more data dependent, and data can surprise us in either direction.

There is great uncertainty around key variables, although that uncertainty seems somewhat asymmetric to me. For example, I have lowered my estimate of the longer-run unemployment rate to 5 percent, but it may be lower still. It's hard to imagine that that is much higher. I've lowered my longer-run target for the federal funds rate, but it, too, may still be lower. While I expect inflation to return to 2 percent, we must acknowledge that there is evidence that financial market participants are becoming less confident of this. Few are worried about high-inflation outcomes. In light of how far short we are falling on our inflation target, it is appropriate that we probe to see if our estimates of these key variables are too high. We do not want to prevent returning to full employment by being too wedded to our uncertain estimates of variables and relationships that may have changed. While it may take some time to be reasonably sure, the accumulating evidence is certainly pointing in that direction. Making policy based on natural rate, potential growth, and equilibrium rate assumptions that are too high could deprive workers who are out of the labor force or part time for economic reasons of being fully and gainfully employed.

Finally, after missing our PCE inflation target on the low side for many years, we need to be sure to engineer liftoff only once we have truly attained reasonable confidence that we will hit the target within the forecast horizon. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. First Vice President Prichard.

MR. PRICHARD. Thank you, Madam Chair. I view the transitioning of the statement to more data-dependent language as a very positive development. I interpret the language in alternative B as leaving our options open for normalization to begin in June should the economy continue to improve and inflation evolve as some anticipate. If the recent softening in some of the data should spill over and persist or if the decline in inflation should not prove to be as transitory, then subsequent meetings would continue to present new opportunities for liftoff. But, in any event, alternative B allows for the very flexibility that is called for at this juncture. Thus, I support the language in alternative B as amended this morning. Thank you.

CHAIR YELLEN. Thank you. President Bullard.

MR. BULLARD. Thank you, Madam Chair. I also support alternative B for today. I think that the removal of "patient" creates optionality for the Committee going into the spring and summer. This is an appropriate step to take at this juncture.

My preference is to create a situation during the remainder of this year and beyond in which the Committee is willing and able to move at any meeting at which we have reasonably good data to point to on the U.S. economy. My sense is that if we make moves in response to data that are supportive of a move, the normalization process will go relatively smoothly. Conversely, if we try to force moves toward normalization on days when the data are not that supportive, such action will call into question the policy reaction function of the Committee and possibly lead to complications.

My general view is that our current policy settings are increasingly out of step with the reality of the U.S. economy. Our balance sheet remains at its peak level. Our policy rate remains at its lowest setting. These are, in effect, emergency policy settings. Meanwhile, the economy continues to improve, with the unemployment rate likely moving below 5 percent in the third quarter of this year. We can look at other measures of labor market performance, such as the labor market conditions index, but the correlation between those indexes and unemployment is around 0.95. The same is true for nonfarm payroll employment growth. I think our workhorse indicators of unemployment and nonfarm payrolls are telling us what we need to know about labor market improvement.

The goal for 2015 should be to make modest moves in the policy settings to position U.S. monetary policy more appropriately for the state of the economy in 2016 and beyond. Even when we come off the zero lower bound, policy will remain extremely accommodative. In particular, there will still be upward pressure on inflation coming from monetary policy. In fact, according to traditional analysis, there will be upward pressure on inflation coming from monetary policy at all times in the next several years as the normalization process proceeds. That will help move inflation back toward the Committee's 2 percent target. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Williams.

MR. WILLIAMS. Thank you, Madam Chair. I, too, support alternative B as amended. And I fully support your description of the economic outlook that you gave yesterday and your plans in terms of the press conference and thinking about policy.

The first paragraph of alternative B properly characterizes the various crosscurrents in the data—some softening in spending numbers and positive surprises in the labor market—and my own expectation remains that the unemployment rate will fall below its natural rate around the middle of this year. I also continue to view the dip in core inflation as transitory, especially in view of tentative signs that reduced slack is starting to boost wage growth. I therefore continue to view the risks to the outlook as balanced and little changed from our previous meeting. This outlook and risk assessment point toward making policy decisions on a meeting-by-meeting basis going forward, based on the data as they come in. Importantly, alternative B appropriately notes that the change in forward guidance does not have explicit implications for the timing of future policy changes.

I do want to comment on President Lacker's remark that there is some conflict in the language. I think there's absolutely no conflict in the language at all. It does not imply at all that we don't have confidence that inflation will return. It just says that, at the time of liftoff, what we're looking for is improvement in the labor market, and that we will have confidence. It doesn't suggest that that's a change or anything. It just says that those are the two conditions that we need to have in order to have liftoff. So I don't see a conflict or tension in the language. It appropriately captures our dual-mandate goals and the progress we're making on those.

Looking ahead, I agree with President Lockhart that we really should be thinking ahead to the future statement language. I've thought some about that and have some comments. My own view is, we don't want to be writing the statement in the meeting before, stating what we're going to do in the next meeting. I don't think that's the right approach. What we want is to have a statement that, through words, gives a probabilistic interpretation of how we see policy going forward. I agree that these decisions should be meeting by meeting, based on the data that we have at the time. In thinking about the future statements, I prefer a communications strategy that avoids specific commitments to future monetary policy actions. So I looked ahead to alternative C for possible thinking—again, for the future—about an approach. In one sense, a hint that perhaps we're getting closer to a rate increase would be provided by the language that says "In determining future adjustments of the target range for the federal funds rate," as opposed to "In determining how long to maintain" the funds rate. That's a way to lean a little bit toward the idea that an increase may be coming sooner.

That said, paragraph 3 in alt-B, the one that I think we'll be using today, is a really good and flexible structure for our future statements. We'll have to clear some scaffolding that we built around the sentences referring to the April meeting and the fact that we're changing the forward guidance. And I assume we'll eliminate those after this meeting. But once we clear that scaffolding around it, the language in alt-B, paragraph 3, gives that data dependence pretty clearly. It implies that we will be making decisions based on the incoming data and our objectives. In that regard, I really do think that's preferable to returning to a date-based guidance such as "in a couple of meetings." I believe that we want to avoid going back to date-based guidance in future statements, and that we really want this to be open-ended in the future. Thank you.

CHAIR YELLEN. Thank you. President George.

MS. GEORGE. Thank you, Madam Chair. I can support alternative B and the removal of "patient" from our forward guidance. Given the current state of the economy and my own outlook, I expect that it will be appropriate to lift off in June. I also expect that interpreting the new "reasonably confident" language will bring its own challenges to our policy decisions in meetings to come, as well as external communications. In that regard, I appreciate the Chair's proposed elaboration for today's press conference.

Beyond the language in this statement, though, I believe it's becoming increasingly important to say something about the path of interest rates after liftoff, as others have noted. The public's fixation on the timing of liftoff often is accompanied by concern about a steady move to the neutral rate. Given uncertainty about how the economy might respond to the initial removal of accommodation, a more gradual path may be prudent as we evaluate the effect of liftoff after a prolonged period of near-zero rates. Communicating the possibility of a more gradual path also could help dispel expectations that policy is poised to move on a preset course. So it may be appropriate to pause after liftoff, not only to see how the economy and financial markets respond, but also to reinforce that we are not marching steadily to the neutral rate at increments of 25 basis points at each meeting. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. First Vice President Holcomb.

MS. HOLCOMB. Thank you, Madam Chair. First, I'd like to thank the Board's staff for the effort that was taken in the Tealbook, Book B, to explore the policy implications of a nonlinear link between the unemployment rate and the rate of wage inflation. As you may know, the Dallas research staff has found evidence of such a link in both aggregate and regional data.

As I understand it, the question today boils down to whether to take June off the table for liftoff from the zero bound, put it on the table, or go one step further and signal the intention to raise rates in June. I think that liftoff in June is quite likely to be appropriate, but I see no reason to tie our hands, so I favor alternative B.

I see a June liftoff as likely to be appropriate not because of an immediate inflation threat or because we see our 2 percent inflation target as a ceiling. In looking to prolong this expansion, we think that the best approach is to ease off on policy accommodation relatively soon so that we don't need to take stronger and more risky action later. As President Fisher emphasized, the track record in withdrawing accommodation after we've already pushed past full employment is not good.

Perhaps one reason that "later and steep" may not work in practice is that the promise of "steep" isn't seen as credible. Because it isn't regarded as credible, people make financial bets that pay off only if low rates continue. Whether that is the explanation or not, we note that, in each of the three longest economic expansions in post–World War II economic history, the Federal Reserve began raising short-term interest rates while unemployment was at or above the natural rate and above the jobless rate we see today. Thank you.

CHAIR YELLEN. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Madam Chair. I support alternative B. At the previous meeting, I was uncertain that I'd be able to support the removal of the "patient" language at this meeting. At the same time, at this meeting, I've actually moved back my projected liftoff date until December.

How do I reconcile those two positions—that I'm actually now quite strongly supportive of removing "patient"? Well, there are basically three reasons. First, there's the background reason, which almost all of us agree with, that it is actually good to get this phrase out of the regular FOMC statement because, number one, it was intended to be a transitional phrase and, number two, it's another one of those phrases to which I think markets are attaching potentially excessive weight. So by removing it, we get rid of a lot of the speculation about it. The second reason is that I think the Chair has been very effective in her monetary policy testimony in shifting perceptions of what I have previously referred to as the "kitchen timer" phenomenon, which is to say that once "patient" is removed, the kitchen timer is flipped and we're on course to a two-meetings-later federal funds rate liftoff. The additional language in the statement reinforces that. Third, and somewhat contrary to some of you who are looking forward to a potential June liftoff, I actually believe the recent softening of economic news makes it less likely the markets will think that there's a kitchen timer phenomenon here—or, in Helen's terms, that the countdown has begun. There's some risk that it'll still be read that way, but that's a risk worth taking in order to achieve the benefit that I noted earlier. I don't see the case, as I said a moment ago, for liftoff any time soon, but it's healthy for us to be thinking actively about our monetary policy stance at each meeting.

Now, on the substance, we may be moving into a normalized procedural and institutional environment, but the conditions out there remain very unusual, with the aftermath of the financial crisis and the Great Recession and a variety of ongoing secular changes. So in thinking about the theory and history that are relevant, I'm not entirely sure what history is most instructive, given the number of things that have changed from more recent episodes of recessions and recoveries.

I do understand the abstract point that a return to full employment and continued recovery will, at some juncture, push inflation up, but I haven't yet heard the reasons why, at some particular point, we'll know that we have crossed that threshold and we should have reasonable confidence that that's the path that we're on. It will presumably be based on something specific that isn't present right now. We're all emphasizing our data dependence, and so I look forward in future meetings to hearing what specifics people have that make us think we should conclude that now we have that reasonable confidence. I presume that those of you who have been ready to move for some time don't need any more data, but, for those of us who have not, I think it is important to have that conversation and, specifically, to say, again, what has changed so that now we can have that kind of confidence that we didn't beforehand.

I will say that there are a couple of other background reasons why my instincts are for later rather than sooner. One is just a conversation to which I shouldn't attach enormous significance, I guess, but it did have an effect on me. Some weeks ago, I asked an economist who watches financial markets pretty closely what his explanation for the low level of inflation compensation was. He proceeded to give me several interesting technical explanations, and then he said, "I don't actually think that your inflation target is 2 percent. I think it's closer to 1.7 percent. So the amount of inflation compensation required is actually less than you seem to have been assuming." Now, that's one guy's view. But he's a straightforward, smart person who was just purporting to interpret what he was seeing in markets, and that did concern me. I'm also concerned with the issue that many in and out of this Committee have raised: While we've got a lot of ways to tighten, we don't really have that many ways to be accommodative, and so moving prematurely could risk putting ourselves into a circumstance in which we had a limited number of efficacious responses.

The final point I'd make, though, on the substance is that, although I pushed back liftoff, as I said, to December, in 2016 and 2017 I move back closer to the pack—that is, my rate of increase of the federal funds rate will be somewhat faster than the norm. It doesn't quite get me to the middle of the pack, but it gets me back into the pack. That reflects a view that we really should be sure and have a high degree of confidence. Maybe my implicit reaction function is a high rather than reasonable degree of confidence, but, once we get there, I think that it will probably be more appropriate to normalize more quickly.

In conclusion, I'd just say that I hope I am surprised in the coming months by the intensification of economic growth and maybe some wage growth and the diminution of downside risks. Short of that, I look forward to discussions in April and thereafter of the specifics that will help me, at least, come to the conclusion that the relevant corner has been turned, and that the level of confidence that we're moving back toward a 2 percent inflation target, while giving more opportunity for employment to grow, has been reached. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Fischer.

MR. FISCHER. Thank you, Madam Chair. As I said yesterday, I believe we're closing in on full employment, and I'm reasonably confident that inflation will move back to its 2 percent objective over the medium term, not least because I'm confident that this Committee will keep monetary policy sufficiently expansionary until we get there. So I support alternative B—that it's time to take "patient" out of the statement and to signal that it is not unlikely that we'll want to raise rates in June. At the same time, I support the language that says we've not determined when we will lift off, as it's easy to envisage circumstances that will make us prefer to wait until after June, because either the incoming data we've seen recently or unanticipated developments lead us to reconsider and wait to see how events unfold. So I think that those who are supporting alternative B, which seems to be generally accepted, are correct, and that that's the right way to proceed.

But I'd like to discuss a few issues that are worth mentioning because they're likely to be relevant to the debate we're going to have about timing over the next several months. First, there is the issue of the length of the lags with which monetary policy actions affect the real economy. Estimates of dynamic monetary policy multipliers imply that the decisions we make this year may not have their greatest effect until 2017. While we cannot now place much faith in the 2017 forecasts for the state of the economy, it's more likely than not that a smaller punch bowl will be wholly appropriate for the tight labor market and rising inflation that we may well face a year or two from now.

Second, we need a sense of proportion. Raising the federal funds rate ¼ percent is not akin to shifting monetary policy from accommodative to contractionary. Rather, we'll be moving from an ultraexpansionary monetary policy to an extremely expansionary monetary policy. We'll still have rates that are low enough to continue to support the recovery while beginning to normalize monetary policy, itself a relevant positive factor in making our decision. Moreover, if the economy turns out to have less momentum than we are—or at least I am—currently estimating or if we're hit with more negative shocks, we can lower the rate again. Indeed, we should all be looking forward to a time when rates might more regularly be expected to move in either direction.

Third, if I can just insert a brief comment relating to the discussion on forward guidance—namely, the interchange between Presidents Lockhart and Williams on forward guidance—I, too, believe we need to avoid date-based guidance. But, even more, I think we should avoid constraining ourselves going forward. We should do what we can to reveal to the markets the way we're thinking, but without committing ourselves to tying our hands going ahead. We could give forecasts. That's what's being done in many other countries. I don't think it was particularly helpful to have those forecasts, but what they do do is to make it clear as you look at them ex post that our knowledge about what we're going to do is quite limited. But we can find other ways of revealing that than publishing the forecasts.

Fourth, the choice of interest rate path is sometimes described as a choice between an early and gradual path and a later and steeper path. The main argument given for starting later has been that, all else being equal, the existence of the lower bound should make us wait at least a bit longer to raise rates than we would have otherwise. But that argument is always true, and, at every moment, you can say that. That choice means, on average, staying at the lower bound longer, which, to my mind, also has costs. What we have to do is to calibrate when the costs have exceeded the benefits. That's very difficult, but I think we're very close to that point or will be within, say, a couple of months or perhaps a bit more.

In addition, I do not believe, although I've heard it said repeatedly, that having to reverse course is the end of the world. Let me explain a factor that I think we overlook. If the situation becomes dire enough, we could once again use QE. But if the situation is sufficiently dire to move us from plus 25 basis points back to zero, it would have been very dire if we had stayed at zero, and we're going to have to respond in that case as well. So it's not that we get away from having to confront situations in which it will be very uncomfortable with being at the zero lower bound.

Finally, I'd like to add a detail about when to lift off. We're all familiar with the argument that we should lift off late because of the possibility that, by lifting off earlier, we'd face a higher probability of having to reverse course and return to the effective lower bound. The question is not whether we might have to reverse course. It is whether and when the expected gain from lifting off becomes positive. That means we have to weigh the costs of having to reverse course by the probability of having to do so.

I received but haven't, unfortunately, had time to read the paper by President Evans and his colleagues, but I did look at it. I'll instead talk about results that are in the memo submitted in January by de Groot, Gagnon, and Tetlow, whose title is "Stochastic Implications of Alternative Strategies for the Beginning of Policy Normalization." The memo has in it the following, among several other, conclusions: "The probability, under the [earlier and gradual] strategy, of returning to the [effective lower bound] within eight quarters is moderate, at 10 percent, and falls to only about 5 percent under the [later and steep] strategy; however, the chance of the prescribed federal funds rate climbing to at least 3 percent within a year of initial departure is negligible under the [earlier and gradual] strategy, and about 10 percent under the [later and steep] strategy." We've really got to look at the alternative paths and not at staying here or not. There are consequences to delaying, and we need to take them into account as well. I see considerable benefits to the gradual strategies because I think that will enable us to deal with later disturbances in a more moderate way if we have negative disturbances.

The issue of timing—of when the expected return from raising the interest rate is greater than the costs of not doing so—is a critical element in the calculation of when to lift off. It's a critical element, but it doesn't tell us when to lift off. The argument for not lifting off at any particular point remains the same. It almost goes without saying that that calculation and that decision will be at the center of our discussions over the coming FOMC meetings. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Powell.

MR. POWELL. Thank you, Madam Chair. I will support alternative B. The revised statement puts the Committee in a position to react to incoming data and events without any specific time commitment about the liftoff or path of rates. Independent of one's view of the appropriate date of liftoff, that is an important step on the path to normalization and one that I welcome.

In this SEP, I moved my estimate of the most likely liftoff date from June to September in light of the run of weaker data, the strength of the dollar, and the likely continued weakness in inflation readings. But, as several have noted, there will be three employment reports between now and the June meeting and a smaller number of inflation readings. If we continue to get very strong payroll numbers, declining unemployment, and at least modest inflation readings, I could be prepared to support liftoff in June, but I think it's more likely that the date will slip to September.

I'll say again that, to me, in the long run not much rides on whether the first rate increase happens in June or September. Far more important is that the Committee have a plan to deal with the range of possible data and events as well as a consistent and clear way of communicating that plan to the public. And the center of that plan as we go forward will be the test of continued improvement in the labor market and reasonable confidence that inflation will move back to the 2 percent medium-term objective. If the Committee does choose to lift off this year, which today seems to me both desirable and highly likely, there will be a need to explain how that decision is consistent with our 2 percent medium-term inflation objective. And that will not be easy—particularly if the dollar continues to strengthen and oil prices remain weak or even decline. I see this explanation as based on the thoughts that diminishing slack will eventually produce inflation, and that monetary policy works with long lags. The Chair persuasively outlined these points last evening and then again this morning. I think that case needs to be made consistently—and no doubt repeatedly—if we're to be seen as defending the 2 percent objective. There will also be a need to foreshadow liftoff at least one meeting ahead, perhaps by signaling that the Committee is gaining confidence that inflation will move back to the 2 percent objective over the medium term.

It's become a near cliché to say that the path of rates is more important than the date of liftoff, a statement that is obviously true in the long run but not that helpful in the short term when what we're trying to do is to choose the date of liftoff. But it is appropriate that the Committee now turn to thinking about, and communicating more about, the path of rates after liftoff. And I do think that, after liftoff, we can move rates up fairly gradually, particularly if inflation continues to be weak, as seems likely. We don't need to be in a hurry.

In my view, policy should remain highly accommodative for quite a while longer, and that is consistent with a gradual path of rate increases after liftoff. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Brainard.

MS. BRAINARD. Thank you, Madam Chair. I support alternative B. It represents a carefully balanced approach that's an appropriate response to the divergence we are seeing in the two legs of our dual mandate. While it seems likely that we will see further movement in the direction of maximum employment over the next two meetings, it also seems highly likely we could see lingering softness in inflation and no observed progress toward our inflation target. This is especially likely if the dollar continues to strengthen and core import prices soften further.

The recent momentum in the labor market suggests that resource utilization has continued to increase and may continue to do so going forward. Just how much slack remains in the economy is difficult to say, but there appears to be some slack along several margins, including unemployment, participation, and people who are working part time for economic reasons.

The outlook for inflation is more uncertain. We should expect over time that temporary factors holding down inflation, such as energy price declines and dollar appreciation, will fade, and that continued increases in resource utilization will begin to put upward pressure on wage and price inflation. But the fading of the so-called temporary factors may, in fact, take more time than we currently expect. In particular, the effects of the dollar may fade only slowly, and dollar appreciation may well have some distance to go, exerting a significant tightening effect. At the same time, we've seen little convincing evidence that tighter resource utilization is yet having a significant effect on prices and wages. And we can't dismiss the possibility that the lingering effects of the financial crisis may have some persistent effects on the relationship between resource utilization and inflation domestically. While the partial retracement of market-based inflation compensation measures gives some support to our hope that inflation expectations will hold steady, it's possible that they are softening in the face of stubbornly low inflation, which would be highly troubling. Thus, I think the risks around the outlook for inflation are slightly tilted to the downside.

I view it as highly significant that the removal of the word "patient" is accompanied by economic projections from the Committee that point to a later and more gradual path of policy firming. I hope this combination accurately conveys to the public the high degree of nuance in the discussion that we've had in this room. Let me be clear about how I interpret the removal of the word "patient." I view this statement as announcing the end of forward guidance—which is to say, the commitment to a stated policy rate path for some time into the future—and the return to data-dependent, meeting-by-meeting policy determination starting in June.

It's important that the public understand the end of forward guidance does not prejudge the outcome of any subsequent meeting. Rather, it creates optionality that the target rate could be moved without a commitment far in advance. It's also very important that the public understand there is nothing inevitable about either the pace or even the direction of policy moves following liftoff. In fact, the economic and price developments since we last met in January cause me to be more hesitant that we will see the appropriate conditions for liftoff in June. Nonetheless, I support the removal of the "patient" language to communicate clearly that we will be very closely attuned to the incoming data and will have the option of altering the policy rate path to respond to those data starting in June.

The policy reaction function in alternative B places great weight on our being reasonably confident that economic conditions and a monetary policy based on contemporaneous liftoff would be consistent with inflation moving back toward our 2 percent goal over the medium term. Assuming that core inflation remains soft relative to our target, the set of factors that might give me reasonable confidence that inflation is likely to move back toward our target are that employment growth continues at or near current rates; resource utilization gaps continue to close at about the same pace as over the previous year; measures of inflation expectations continue to firm; and we observe an inflection point in the forces that we now believe to be transitory that are weighing on core inflation—in particular, oil prices and core import prices associated with dollar strengthening. Although the confluence of these events is possible by June, I find it more likely that many of these conditions will not be met in June. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. First, I want to thank Thomas. I've had a headache about the Taylor rule for a long time, as you all know—in large part because of the slavish adherence to a constant real equilibrium rate of 2 percent, which I think has been contradicted by the actual performance of the economy over the past few years. So thank you. Your analysis is a welcome dose of aspirin. I appreciate it.

I support alternative B. Taking out the "patient" language makes sense, given that there are some scenarios, especially those in which the labor market tightens further and wage inflation climbs, in which we'd want to lift off in June. At the same time, the statement language, the Chair's earlier testimony, and, I expect, the statement at the press conference today should make it clear that removal of the "patient" language in no way indicates any commitment to moving in June. It just means that June is not off the table. I also like the fact that we'll no longer be boxed in meeting to meeting by our forward guidance. We've said that we're data dependent. Now, I think, the statement is finally consistent with that.

In terms of market reaction, I would expect a slightly adverse reaction from this change even though it's widely anticipated, because the deed is often worse than the expectation. That said, though, I think any effect should be modest, because the shift downward in the SEP's federal funds rate trajectory for 2015 will likely be interpreted by market participants as suggesting that the Committee is shifting more toward September, away from June.

As far as the statement language is concerned, I believe I'm like everyone else except President Lacker—I'm perfectly happy with the statement as it reads right now.

CHAIR YELLEN. Well, thank you, all, for a very rich discussion of the policy issues we face. With respect to the statement language, President Lacker made a suggestion for how to change it, but I did not hear any support for it around the table. So unless I see some sudden show of support, I think what I'd like to do is to put forward for a vote alternative B, as it was distributed, with simply the word "earlier" crossed out in two places. And I would note that Governor Brainard suggested saying something about import prices. I did want to simply mention that, in my press conference statement, I will say something about import prices holding down core inflation. So why don't we proceed with a vote on alternative B, with just the two instances of "earlier" crossed out.

MR. LUECKE. Very well. The vote will be on alternative B, as depicted on pages 6 and 7 of Thomas's handout, and on the directive on page 11 of that same handout.

Chair Yellen	Yes
Vice Chairman Dudley	Yes
Governor Brainard	Yes
President Evans	Yes
Governor Fischer	Yes
President Lacker	Yes
President Lockhart	Yes
Governor Powell	Yes
Governor Tarullo	Yes
President Williams	Yes

VICE CHAIRMAN DUDLEY. Ta-da. [Laughter]

CHAIR YELLEN. Excellent. Fantastic. Thank you, all. I need to tell you that the date of our next meeting is Tuesday and Wednesday, April 28 and 29. I believe box lunches are available in the anteroom now. If anyone is staying around until the press conference, there will be a TV in the Special Library. Thank you, all. I think we had a good meeting, and we'll proceed with moving forward to where we need to go.

END OF MEETING