Meeting of the Federal Open Market Committee on January 31–February 1, 2017

A joint meeting of the Federal Open Market Committee and the Board of Governors was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, January 31, 2017, at 1:00 p.m. and continued on Wednesday, February 1, 2017, 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
Patrick Harker
Robert S. Kaplan
Neel Kashkari
Jerome H. Powell
Daniel K. Tarullo

Marie Gooding, Jeffrey M. Lacker, Loretta J. Mester, Michael Strine,[1] and John C. Williams, Alternate Members of the Federal Open Market Committee

James Bullard, Esther L. George, and Eric Rosengren, Presidents of the Federal Reserve Banks of St. Louis, Kansas City, and Boston, respectively

Brian F. Madigan, Secretary
Matthew M. Luecke, Deputy Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Scott G. Alvarez, General Counsel
Michael Held, Deputy General Counsel
Steven B. Kamin, Economist
Thomas Laubach, Economist
David W. Wilcox, Economist

James A. Clouse, Thomas A. Connors, Michael Dotsey, Eric M. Engen, Evan F. Koenig, Jonathan P. McCarthy, Daniel G. Sullivan, William Wascher, and Beth Anne Wilson, Associate Economists

Simon Potter, Manager, System Open Market Account

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

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

[1] Attended Tuesday session only.

Matthew J. Eichner,[2] Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors; Michael S. Gibson,[3] Director, Division of Supervision and Regulation, Board of Governors; Andreas Lehnert, Director, Division of Financial Stability, Board of Governors

Michael T. Kiley, Deputy Director, Division of Financial Stability, Board of Governors; Stephen A. Meyer, Deputy Director, Division of Monetary Affairs, Board of Governors

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

Andrew Figura, Joseph W. Gruber, Ann McKeehan, and David Reifschneider, Special Advisers to the Board, Office of Board Members, Board of Governors

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

Antulio N. Bomfim, Ellen E. Meade, and Joyce K. Zickler, Senior Advisers, Division of Monetary Affairs, Board of Governors; Jeremy B. Rudd, Senior Adviser, Division of Research and Statistics, Board of Governors

Shaghil Ahmed,[2] Associate Director, Division of International Finance, Board of Governors; Jane E. Ihrig, Associate Director, Division of Monetary Affairs, Board of Governors

Min Wei, Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Glenn Follette, John M. Roberts, and Paul A. Smith,[2] Assistant Directors, Division of Research and Statistics, Board of Governors

Eric C. Engstrom, Adviser, Division of Monetary Affairs, and Adviser, Division of Research and Statistics, Board of Governors

Penelope A. Beattie,[2] Assistant to the Secretary, Office of the Secretary, Board of Governors

Dana L. Burnett, Section Chief, Division of Monetary Affairs, Board of Governors

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

Laurie DeMarco, Principal Economist, Division of International Finance, Board of Governors; Naomi Feldman, Principal Economist, Division of Research and Statistics, Board of Governors; Yuriy Kitsul and Zeynep Senyuz, Principal Economists, Division of Monetary Affairs, Board of Governors

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[2] Attended through the discussion of financial developments and open market operations.
[3] Attended Wednesday session only.

Anna Orlik, Senior Economist, Division of Monetary Affairs, Board of Governors

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

David Altig, Ron Feldman, and Christopher J. Waller, Executive Vice Presidents, Federal Reserve Banks of Atlanta, Minneapolis, and St. Louis, respectively

Troy Davig and John A. Weinberg, Senior Vice Presidents, Federal Reserve Banks of Kansas City and Richmond, respectively

Bruce Fallick, Giovanni Olivei, and Robert G. Valletta, Vice Presidents, Federal Reserve Banks of Cleveland, Boston, and San Francisco, respectively

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January 31–February 1, 2017

January 31 Session

CHAIR YELLEN. Let me call our proceedings to order. Welcome, everyone. As usual, today's meeting will be a joint meeting of the FOMC and the Board of Governors, and I need a motion to close the Board meeting.

MR. FISCHER. So moved.

CHAIR YELLEN. Thank you. And without objection.

I think as everyone recalls, President Lockhart will be stepping down from his position at the end of February. Consistent with tradition, he's elected not to attend this Committee meeting. But we will have the opportunity to honor him and express our best wishes at a reception in the Eccles Building atrium this evening. And, for today, I am pleased to note that First Vice President Marie Gooding, who has attended a number of FOMC meetings previously, will represent the Atlanta Bank today. Marie, welcome back.

Effective with today's meeting, Presidents Evans, Harker, Kaplan, and Kashkari will be members of the FOMC. This year will be the first on the Committee for Presidents Harker, Kaplan, and Kashkari, so a welcome is in order to them. And President Evans, you are an old hand as a Committee member. So you get a welcome back.

MR. EVANS. Thank you very much.

CHAIR YELLEN. Let's now proceed. This is our organizational meeting, and we have a number of items to get through. Our first agenda item is the "Election of Committee Officers." In following precedent, I will turn the floor over to another Committee member who will handle the nominations and elections for the positions of Chair and Vice Chair of the Committee. I'd like to recognize Governor Fischer.

MR. FISCHER. Thank you, Madam Chair. I'll be calling for two sets of nominations and votes, and first I'd like to ask for a nomination for Committee Chair.

MR. TARULLO. I nominate Janet Yellen.

MR. FISCHER. Is there a second?

VICE CHAIRMAN DUDLEY. Second.

MR. POWELL. I second that nomination.

MR. FISCHER. All right. Record a tie for second. [Laughter] Any other nominations or discussion? Without objection. And now I'd like to ask for a nomination for the position of Committee Vice Chair.

MR. TARULLO. I nominate William C. Dudley.

MR. FISCHER. Is there a second?

MR. POWELL. I second that nomination.

MR. FISCHER. You missed your chance.

VICE CHAIRMAN DUDLEY. I know.

MR. FISCHER. Are there any other nominations or discussion? Okay. Without objection.

CHAIR YELLEN. Okay. Next we have the election of staff officers by the Committee, and I'd like to ask Brian to read the list of nominees in just a second. I want to note first that President Kashkari plans to nominate an associate economist from the Minneapolis Bank later this year when his recently named research director officially joins the Bank. So, Brian, could you read the list?

MR. MADIGAN. Certainly. For Secretary, Brian Madigan; Deputy Secretary, Matthew Luecke; Assistant Secretaries, David Skidmore and Michelle Smith; General Counsel, Scott

Alvarez; Deputy General Counsel, Michael Held; Assistant General Counsel, Richard Ashton; Economists, Steven Kamin, Thomas Laubach, and David Wilcox; Associate Economists from the Board, James Clouse, Thomas Connors, Eric Engen, William Wascher, Beth Anne Wilson; and Associate Economists from the Banks, Michael Dotsey, Evan Koenig, Jonathan McCarthy, Daniel Sullivan.

CHAIR YELLEN. Do I have a motion to approve these nominations?

MR. FISCHER. So moved.

CHAIR YELLEN. Okay. Second?

VICE CHAIRMAN DUDLEY. Second.

CHAIR YELLEN. Thank you. Without objection. Okay. That takes us to agenda item 2, which is "Selection of a Federal Reserve Bank to Execute Transactions for the System Open Market Account." Do I have any volunteers or nominations? Stan, do you want to—

MR. FISCHER. Well, are we nominating New York for this?

CHAIR YELLEN. I have a feeling that New York might be willing to serve.

MR. WILCOX. Do we need somebody with cue cards?

VICE CHAIRMAN DUDLEY. New York would be willing to serve.

CHAIR YELLEN. Well, other nominees are possible, if you have other suggestions.

MR. FISCHER. No.

CHAIR YELLEN. Okay. We have a nomination for New York. Do I have a second?

MR. TARULLO. Second.

CHAIR YELLEN. Thank you. Without objection. And next we're going to turn to item 3. Let me turn this over to Vice Chairman Dudley. We need to select a manager and deputy manager of the System Open Market Account.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. I nominate Simon Potter to be the SOMA manager, and I nominate Lorie Logan to be the SOMA deputy manager.

CHAIR YELLEN. Okay. Do I have a second?

MR. FISCHER. Second.

CHAIR YELLEN. Okay. And without objection. Thanks. And, now, let me call on Simon to walk us through the adoption of the domestic open market operations and foreign currency operations.

MR. POTTER. Thank you, Madam Chair. I recommend that the Committee approve the existing Authorization for Domestic Open Market Operations, the Authorization for Foreign Currency Operations, and the Foreign Currency Directive without amendment.

I would like to highlight another item for the Committee's consideration. In January 2009, the Committee suspended the Guidelines for the Conduct of System Operations in Federal Agency Issues in light of the Federal Reserve's program to purchase agency debt and agency MBS. The SOMA contains a significant amount of agency debt and agency MBS, and it continues to conduct transactions in agency MBS securities as part of the reinvestment policy adopted by the Committee. Consequently, I recommend a continued suspension of these guidelines. No Committee vote is needed to continue the suspension.

CHAIR YELLEN. Are there comments or questions? [No response] Okay. Hearing none, we need a motion to approve these documents.

MR. FISCHER. So moved.

CHAIR YELLEN. Okay. Second?

VICE CHAIRMAN DUDLEY. Second.

CHAIR YELLEN. Without objection. Okay. That takes us up to agenda item 5, which pertains to the Program for Security of FOMC Information. As you know, the staff have proposed several relatively minor changes. Two of them would afford more flexibility in the classification or downgrading of FOMC information in certain circumstances. A third change would simply conform the program to a change made by the Committee last year to the foreign authorization regarding Federal Reserve staff who are authorized to discuss System foreign currency operations with the Treasury. Are there any questions about the program? [No response] If not, do I have a motion to approve the proposed changes to the program?

MR. FISCHER. So moved.

CHAIR YELLEN. Second?

MR. TARULLO. Second.

CHAIR YELLEN. Thank you. Without objection. Okay. Our sixth agenda item is on the Statement on Longer-Run Goals and Monetary Policy Strategy, also known as the consensus statement. We made important changes last year. But, this year, only one small, routine change is proposed—namely, the annual updating of the reference to the median of FOMC participants' estimates of the longer-run normal rate of unemployment. In this case, it's an update from 4.9 percent to 4.8 percent.

I should note that the first day of the semiannual monetary policy testimony this year will be February 14, which is before the release of the minutes of this meeting. The minutes will be released on February 22. So the updated consensus statement would be released, first, this year in the coming *Monetary Policy Report* and then would also be included in the minutes.

Now, this is an important document, and I suggest we proceed as we have in the past, first by taking a straw poll to ascertain the views of all Committee participants. By doing that, the minutes can record the strength of support for the statement. Then we're actually going to go around and vote and have the Committee members vote on the statement. So I'd like to start with the straw poll and ask participants to raise your hand if you support the statement. [Show of hands] Are there any opposed to the statement? [No response] Are there any abstentions? [No response] Okay. I think we can record that the statement commands unanimous support among the Committee participants. And now we need to actually have a formal vote, so I'm going to ask members only to raise your hand if you support the statement. [Show of hands] Any opposed? [No response] Okay. Thank you very much.

Let's see. That takes us to item 7, which is about revisions to the external communications policies. As you know, the subcommittee on communications provided a memo on this topic to the Committee in early December, took comments, and then circulated a final proposal on January 18.

I think most of us would agree that an earlier start to the blackout is compelling in order to align it with the first circulation to participants of draft policy alternatives. Starting blackout just before draft policy alternatives are distributed should help prevent the appearance that FOMC participants or the Federal Reserve staff might be divulging confidential FOMC information. I believe the other proposed policy changes—almost all of which deal with blackout issues—are also helpful.

Now, the new policies, if you vote to approve them, will be effective immediately. However, because the first date of the earlier blackout under the revised schedule would be Saturday, March 4, the proposal in effect builds in a transition period of a bit more than a month.

As was noted in the January 18 memo, the subcommittee and I strongly recommend that, if it's reasonably possible, participants cancel any appearances to speak during the extended blackout period or choose to speak about a topic other than monetary policy. But the subcommittee recommended that the Committee authorize the Chair to make determinations whether to approve any preexisting commitments that cannot be canceled and for which the topic cannot be changed. And for any approved appearances in these circumstances, the participant or staff member would be required to refrain from accessing in any way draft monetary policy alternatives or other Class I or Class II FOMC information prepared for the relevant Committee meeting in the weeks prior to the preexisting speaking engagement.

Finally, I should note that these changes to the communications policies, if we adopt them, will not become public until the minutes of this meeting are released on February 22. Principals and the staff will need to move ahead shortly after the meeting to implement the new requirements, but some staff members who will need to be involved in implementation do not actually have FOMC clearance. Accordingly, I'm recommending that the Committee agree that the new communications policies that would normally be Class III FOMC information until their release instead be labeled Internal FR until their publication on February 22. That way, the staff who are involved with appearances or publications can be informed of the new policies and immediately start to implement them before they're published.

Let me take a breather there for a second. Are there any further comments on these policies from participants? [No response] Okay. Well, seeing no further comments, like the consensus statement, our guidelines on external communications have a significance that carries beyond a single year. And, therefore, I think it's appropriate, as we did in the case of the consensus statement, to first start with a straw poll of all Committee participants to gauge the breadth of support for these policy changes, and then I'll call for a narrower vote by the Committee. I'd like to start with a straw poll and ask you to please raise your hand if you are supportive of the changes. [Show of hands] Is there anyone who's opposed? [No response] Okay. What I see is unanimous support for these changes. And let's now take a formal vote of members of the Committee. All in favor? [Show of hands] Any opposed? [Show of hands] Okay. The ayes have it by a wide margin.

Okay. That takes us to item 8, which is the "Proposed Addition of Fan Charts to the Summary of Economic Projections." As you know, the Committee has been discussing for some time the possible addition of fan charts to the SEP that would depict uncertainty in the projections. In early November, the subcommittee circulated a revised proposal to the Committee, and over the next few weeks subcommittee members consulted with each Committee participant. The subcommittee then provided an update to the Committee in early January that addressed comments raised in the November conversations. My understanding is that almost all participants have expressed support for the proposal, and those who have concerns or reservations have indicated that they would not object to moving forward. My personal view is that the fan charts are a useful and straightforward way to convey to the public the considerable uncertainty surrounding the SEP numbers.

So at this point it looks like we're ready to proceed, and before we do so, let me just ask again, is there anyone who has a comment or wants to raise an objection to proceeding with this? Governor Tarullo.

MR. TARULLO. I have no objection. I fall in that latter category, Madam Chair, of people who had questions but didn't want to be in opposition. I want to address the somewhat broader issue of the SEP itself. I know this is not the time for an extended discussion, but I hope that, at some point, we will have an opportunity to discuss it. As I think about our experience with it since it was put in place, I honestly cannot tell whether, on net, it's been somewhat positive or, on net, it's been somewhat negative in terms of communicating effectively with the public. But the fact that I think it's that close a call suggests to me that there should be a good opportunity to have some discussion about ways that it might be improved, and perhaps we should step back a little bit and ask ourselves if it has worked as intended.

CHAIR YELLEN. Okay. Well, we will consider taking that up in due course and consult with the subcommittee on communications about that. Seeing no objections to moving forward then, the minutes of this meeting will note that participants agreed to include fan charts in the SEP, effective with the March 2017 minutes. In terms of implementation, a staff paper that covers fan charts and, more generally, measures the uncertainty in macroeconomic projections will be released to the public shortly after the publication of the minutes of the current meeting. We will provide you with that paper in advance of its publication, and I also understand that in advance of our March meeting, our Public Affairs Office will release templates of the fan charts so the public can see what they will look like. Those would use data given in the December 2016 SEP. And my understanding is that we don't need a vote on this, and we simply have widespread support and will go ahead and do it.

Okay. Well, that completes our organizational items. We're making great progress, and let me turn things over to Simon, who's going to give us the Desk briefing.

> MR. POTTER.[1] Thank you, Madam Chair. Over the intermeeting period, advanced economy asset prices were largely range-bound, as investors awaited concrete details on President Trump's fiscal policy initiatives. Emerging market asset prices were little changed in the wake of the December rate hike and, more generally, have been quite resilient to the sharp moves in the dollar and Treasury yields since the U.S. election. One notable exception is the Mexican peso, which depreciated further on concerns over changes to U.S. trade and immigration policy.
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> As shown by the right column in the top-left panel of your first exhibit, financial assets have repriced significantly since the November FOMC meeting. The vast majority of the price action occurred in the immediate wake of the U.S. election, and

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

asset prices were relatively little changed over the intermeeting period. The 10-year Treasury yield remains roughly 65 basis points higher since the November FOMC meeting—split about evenly between higher inflation compensation and higher real yields. Meanwhile, the broad trade-weighted dollar is roughly 3 percent stronger, the S&P 500 has gained 9 percent, and corporate credit spreads have tightened substantially.

Market participants continue to expect the new Administration to introduce expansionary fiscal policies as well as implement a shift in tax and regulatory policies that is thought likely to promote economic growth. In the most recent Desk surveys, respondents, on average, expect changes in federal tax policies to have a significantly larger effect on GDP than changes in federal spending. That said, Desk contacts continue to suggest that the ultimate composition, size, and timing of any proposed fiscal package are difficult to predict. In addition, proposed changes to U.S. trade and immigration policies are viewed as potentially offsetting the economic benefits of other policies.

Data on investor positioning continue to indicate elevated interest among speculative investors in trades predicated on higher Treasury yields and a stronger dollar—positions that would be expected to profit from a move to fiscal expansion. Some contacts have also suggested that so-called animal spirits may be amplifying the rise in U.S. rates, equity prices, and the dollar. In addition, some continue to suggest that U.S. rate and dollar levels were too low relative to fundamentals earlier this year, but investors were hesitant to put on corresponding positions ahead of the election.

Market participants continue to emphasize that there is still a great deal of uncertainty regarding the policy plans of the new Administration and their potential effect on the economic outlook. The red line in the top-right panel shows that the Global Economic Policy Uncertainty Index remains elevated. As we discussed at the December FOMC meeting, however, this increase in uncertainty is generally not showing up in market prices. The Desk's cross-asset implied volatility index, the blue line, remains well below its historical average, held down in part by the VIX, which is at its lowest level in over two years.

After the notable appreciation of the dollar and rise in U.S. rates immediately after the election, emerging market currencies have been quite resilient, as shown in your middle-left panel. Confusion over the new Administration's position on the exchange value of the dollar and a border adjustment tax introduced some volatility into currency markets. Steve will discuss some of the potential effects of a border adjustment tax in his briefing.

Emerging markets as a whole have reportedly benefited from improved global growth expectations that have offset headwinds associated with higher U.S. rates and potential changes in U.S. trade policy. Mexico has been a notable exception—the peso depreciated further against the U.S. dollar over the intermeeting period, prompting foreign currency intervention by the Mexican authorities. Compared with other emerging markets, Mexico has faced more comments coming from the new Administration on restrictions to trade and foreign direct investment. Additionally, deteriorating economic conditions and rising political risk in Mexico have weighed on the currency. In light of all of these factors, the peso has depreciated 8 percent against the dollar since the November FOMC meeting, and market prices reflect heightened peso uncertainty over the coming months. The middle-right panel shows that options are pricing a wider—but more symmetric—range of outcomes than just prior to the U.S. election. A straight read of options prices implies a roughly 15 percent probability assigned to a further depreciation of the peso of greater than 10 percent over the next three months.

Elsewhere in emerging markets, China remains a key point of focus, as Chinese officials continue to liberalize controls on capital inflows while also trying to damp persistent capital outflows by Chinese residents. As shown in the bottom-left panel, net outflows amounted to about $70 billion in December, according to Desk estimates, even as Chinese authorities introduced stricter controls on capital outflows and penalties for violations. Aggregate Chinese FX reserves totaled roughly $3 trillion as of December, down from $3.8 trillion just three years ago. Over the same horizon, the RMB depreciated nearly 15 percent against the dollar. Market participants expect that the RMB will depreciate a further 5 percent against the dollar this year and that capital outflows will continue.

Market participants still see challenges for the Chinese economy, especially if the dollar continues to strengthen or the new U.S. Administration and China clash politically. The Party Congress in the fall is expected to shed light on the extent of President Xi's political control, next steps in the development of the economy, and the stance of Chinese diplomatic relations with the rest of the world; contacts expect the authorities to attempt to damp any volatility in the interim.

With respect to expectations for U.S. monetary policy, market pricing and the Desk's surveys indicate that a near-zero probability is attached to a rate hike at this meeting and a roughly 25 percent probability is attached to a hike by the March meeting.

Further out, the market-implied path of the policy rate is little changed since just prior to the December meeting, thus sustaining the steepening that occurred after the U.S. election, as shown by the shift from the light blue to the dark blue line in the bottom-right panel. A similar pattern has occurred with the survey-implied path, shown by the shift from the red to the pink diamonds.

The market- and survey-implied paths remain nearly identical through year-end 2019. Before the U.S. election, the market path ran persistently below the survey mean expectations. One explanation for this phenomenon is that concerns over adverse outcomes from the effect of persistent disinflation at or close to the effective lower bound had pushed the market path implied by futures prices well below the policy rate path actually expected by market participants. The convergence of the market- and survey-implied paths may suggest that the demand for protection against adverse outcomes has declined, investors are requiring compensation for additional upside interest rate risk, or both. Thomas will present an alternative perspective using a term-structure model.

I'll now turn the briefing over to Lorie, who will discuss evolving expectations for balance sheet policy, money markets, and Desk operations.

MS. LOGAN. Thank you. I'll begin on exhibit 2 with expectations for the size and composition of the Federal Reserve's balance sheet—a topic that gained increasing prominence over the intermeeting period.

While expectations for the path of the policy rate in the Desk's surveys have not moved materially since December, the median respondent now expects the Federal Reserve's reinvestment policy to first be changed in the first quarter next year, one quarter sooner than in the December surveys. As reflected in the blue dots in the top-left panel, this shift came as respondents further coalesced around the expectation that the federal funds rate will most likely be between 1 and 1½ percent at the time of a change to the reinvestment policy. As shown by the red diamonds, the median respondent expects the target federal funds rate to be 1.38 percent at the time of the first change, down from 1½ percent in the December surveys. In explaining the shift in their expectations, a number of survey respondents highlighted the increased discussion of reinvestment policy in recent Federal Reserve communications.

The top-right panel puts these expectations in the context of projected receipts of principal on SOMA holdings. Starting in the first quarter of next year, the amount of Treasury debt maturing will increase substantially, as shown by the light blue bars, while receipts of MBS principal, the dark blue bars, are projected to decline gradually because of an anticipated slowdown in the pace of prepayments as long-term rates gradually rise. The gray shaded area corresponds to the interquartile range of survey respondents' expectations for the timing of a first change to the reinvestment policy; projected reinvestments during this period total $355 billion.

Once the Committee adjusts the reinvestments, however, most contacts do not anticipate the market needing to begin to absorb all maturing and prepaying securities immediately thereafter. In a probabilistic question on the Desk's surveys, the average probability assigned to reinvestments being phased out over time is around 70 percent, with a median expected phaseout period of 12 months. Further, the average probability assigned to no change being made at all to reinvestments during the normalization process is 19 percent in the case of Treasury securities and 13 percent in the case of MBS.

Despite the heightened attention on the reinvestment policy, thus far contacts haven't linked it to significant price action in Treasury security markets. However, MBS option-adjusted spreads widened roughly 10 basis points over the intermeeting period. Thomas will further discuss these expectations in comparison with the staff's forecast in his briefing.

In domestic money markets, overnight unsecured rates shifted higher smoothly following the Committee's decision to increase the target range for the federal funds rate in December, as shown in the middle-left panel. With the exception of year-end, the effective federal funds rate and overnight bank funding rate both "printed" at 66 basis points throughout the intermeeting period—exactly 25 basis points higher than prior to the rate increase.

The red line in the middle-right panel depicts the cumulative distribution of federal funds volumes, by rate, over the intermeeting period relative to the bottom of the target range and shows that federal funds transactions were concentrated at 66 basis points. Additionally, the effective federal funds rate remained within the target range even on year-end, the dark-blue line, unlike what we observed on year-end following liftoff, the light-blue line, when the majority of federal funds trades occurred below the overnight RRP rate.

The bottom-left panel indicates that overnight Treasury GC repo rates also increased around 25 basis points following the December rate hike. However, repo continued to trade close to the overnight RRP offering rate. On year-end, secured rates declined, and this is in contrast to prior experience as well as forward-settling and term trades that indicated expectations for repo rates to increase. With the benefit of hindsight, many contacts attributed the unusual decline in repo rates to increased prefunding by dealers ahead of year-end, especially following the large spike in interdealer repo rates seen at the end of the third quarter last year.

In addition to the year-end decline, the volume-weighted median overnight Treasury GC repo rate fell very modestly below the overnight RRP offering rate on two occasions over the intermeeting period for the first time since liftoff. The bottom-right panel shows the distribution of overnight Treasury GC repo transactions by our overnight RRP counterparties, or RCPs, in red, and non-RCPs, in blue, on those two days. As you can see, the majority of lending at rates below the overnight RRP offering rate was done by those that do not have access to the overnight RRP facility. However, some RCPs with substantial additional capacity at the RRP facility did lend below the overnight RRP rate by as many as 5 to 10 basis points, reportedly because they did not expect the low rates to persist and wanted to maintain access to dealer balance sheets, especially ahead of year-end. Of note, Fannie Mae was the only RCP to hit its $30 billion individual overnight RRP cap over the intermeeting period.

Contacts generally attribute the long-term softening we have seen in repo rates over recent months to two main factors: first, money fund reform leading to more cash invested in government securities and repo and, second, reduced supply of general collateral driven in part by net Treasury bill paydowns. Recall that money fund reform precipitated significant inflows into government money funds, as shown in the top-left panel of your final exhibit, creating more demand for safe short-term cash investments such as Treasury bills, repo, and agency debt. At the same time, as shown in the top-right panel, Treasury bill supply has decreased roughly $100 billion since early December. Contacts expect that the Treasury will further cut bill issuance about $140 billion to bring the Treasury General Account temporarily to around $23 billion by March 15, ahead of the reinstatement of the statutory debt limit, assuming no new legislation is passed before that time.

The combination of lower repo rates, higher government money fund balances, and ongoing bill paydowns have all contributed to higher average take-up in the overnight RRP following money fund reform. On average, daily usage of the overnight RRP increased to about $170 billion on non-month-end dates from approximately $80 billion previously, as indicated by the dashed black line in the middle-left panel. We expect this relatively elevated overnight RRP demand to persist and even increase as the Treasury bill supply continues to shrink.

The experience in short-term funding markets abroad was less smooth at year-end, with some particular strains in FX swap and core euro-area repo markets. The red line in the middle-right panel shows that the premium for one-week dollar funding in the FX swap market relative to one-week U.S. dollar LIBOR increased to 5 percent in the euro area. The pattern is similar for the dollar–yen basis. The cost of overnight funding, which is not shown, was even higher on the last business day of the year and surpassed that of crisis levels. Reportedly, most trading occurred at rates between 8 and 16 percent, though small amounts traded as high as 40 percent. While prevailing market rates were dramatically higher than the rates offered at the central bank dollar swap auctions, take-up at the auctions remained modest, with the Bank of Japan receiving just $1.2 billion and the ECB receiving $4.3 billion in demand for their respective operations covering year-end. Market contacts continue to note a stigma associated with using the dollar auctions, which may explain the relatively limited usage despite the wider spreads. As usual, these FX swap bases quickly returned to pre-year-end levels, and there was no evidence of spillover to domestic markets. However, these reporting date spikes have grown progressively sharper, and the basis, particularly at longer-maturities, has been persistently widening outside of quarter-ends, as shown by the dark blue area.

In explaining these dynamics, contacts point to a range of factors. Global investors continue to have high demand for dollars to fund dollar-denominated assets, a trend that has not abated. Meanwhile, money fund reform has dramatically reduced the supply of dollars from prime funds and increased balance sheet costs, which has disincentivized banks from lending in the FX swap market, especially on period-ends. Furthermore, nonbank lenders who might step in to arbitrage the rates face a shortage of attractive foreign currency investment options. For example, in Japan and the euro area, there is a scarcity of short-dated sovereign collateral in which to invest the yen or the euros.

Indeed, the scarcity of core euro-area safe assets was reflected in the pricing of euro-area repo, which was the most extreme on record on year-end, as shown in the bottom-left panel. Volume-weighted repo rates in Germany and France were about negative 5 percent, compared with levels of around negative 65 basis points in mid-December. It’s not entirely clear why the euro-area repo rate declines were so acute at the turn of the year. One factor may be that the Eurosystem’s asset purchases continue to steadily decrease the amount of collateral available in the repo market despite the introduction of a limited bonds-for-cash securities lending facility.

The growing scarcity of collateral and negative interest rates in the euro area has implications for the SOMA foreign exchange reserves portfolio. As you may recall, we rebalanced the euro portfolio to the new target asset allocation in the fourth quarter. As shown in the bottom-right panel, the euro portfolio now holds approximately 36 percent in cash and 64 percent in outright holdings of Dutch, French, and German sovereign debt securities, and it conforms to all parameters listed in the FX subcommittee's *Instructions on Management of Foreign Currency Holdings*. The Desk will use reinvestments to keep the portfolio at the target asset allocation through the end of September. However, we have made one tactical change to the implementation plan: We are leaving maturing funds and coupon payments in custodial cash accounts at foreign central banks rather than investing them in short-dated instruments, as a significant liquidity premium in these instruments has recently emerged, making them a less favorable investment option. The Desk plans to reevaluate this approach periodically and will provide a more detailed update on the portfolio in the upcoming quarterly report to the Committee.

Finally, in the Desk's annual memo on small-value tests for operational readiness circulated to the Committee, we provided advance notice of all small-value exercises planned for the coming year. We will continue to provide updates on the results of any small-value exercises from the prior period and inform you of the upcoming exercises at each FOMC meeting. Our plans are summarized in a table in the appendix. There were no exercises conducted in the prior intermeeting period to report. In general, we aim to conduct small-value exercises for operations categorized in the operational readiness framework as in production standby at least twice per year. Thank you, and I'm happy to take questions.

CHAIR YELLEN. Thank you. Questions for Simon or Lorie? President Kashkari.

MR. KASHKARI. Lorie, your exhibit 2, panel 7, "Federal Funds Rate Expected at Change in Reinvestment Policy"—I think you explained this and I just missed it, so I apologize. Is this saying what market participants expect the federal funds rate will be when we stop reinvesting or when we announce our plans about reinvestment?

MS. LOGAN. It refers to when the Committee makes some adjustment to reinvestments.

MR. KASHKARI. The actual reinvestments?

MS. LOGAN. The actual reinvestments.

MR. KASHKARI. Okay.

MR. POTTER. Yes, there might be some slippage in terms of when it's announced versus when it actually happens.

MS. LOGAN. It announces the change, yes.

MR. KASHKARI. I'm just making this up, but, say, if we announce in June that six months later we're going to stop reinvesting, that would be what this is capturing? Or is it the actual date when the reinvestments stop? Do you see the distinction I'm making?

MR. POTTER. I think so.

MS. LOGAN. I was going to get the exact wording of the question to make sure.

MR. KASHKARI. Okay. Thank you.

MR. POTTER. As usual, we're not quite sure what they're answering at that point.

MS. LOGAN. It might take me a minute. If there's another question—

MR. POTTER. We're going to read out the question.

MR. LAUBACH. I believe it is about the date of first change.

MR. POTTER. Yes, but it is a question of "announced" versus—

MR. LAUBACH. Yes, but that's what the question asks.

VICE CHAIRMAN DUDLEY. Wasn't the presumption when we asked the question that that period be relatively short?

MS. LOGAN. "What is your estimate for the most likely timing (in months forward) of a change to the Committee's policy of reinvesting payments of principal on Treasury securities and/or agency debt and MBS?"

MR. POTTER. That's the timing.

MR. KASHKARI. It's something in the middle.

VICE CHAIRMAN DUDLEY. It's sort of ambiguous.

MS. LOGAN. "What is your estimate for the most likely level of the target federal funds rate or range if and when the Committee first changes its reinvestment policy?"

VICE CHAIRMAN DUDLEY. Changing the policy, actually implementing—

MR. KASHKARI. Yes, that's simplistic.

MR. POTTER. I haven't met anyone who has thought through that particular issue. However, that's clearly a policy option in terms of people getting ready for it.

VICE CHAIRMAN DUDLEY. I think most people thought that that interval would be short.

MS. LOGAN. The dealer reports themselves that I've read suggest that when they do their projections of the balance sheet, they're starting at that point—which I think matches up with the actual change. But due to the way the question is written, I can't say that everyone read it that way.

MR. KASHKARI. Okay. Thanks.

CHAIR YELLEN. President Mester.

MS. MESTER. Can I ask another question on the reinvestment policy? I'm getting a lot of questions from both bankers and nonbankers about the policy, and the memo that you distributed triggered my question. Do you have a sense of whether the market participants that answered the questions are thinking about our change in policy tied to a level of the funds rate—and then the timing comes after that? So they think in terms of, "Okay, they're going to change their policy when the funds rate goes up by a certain amount or to a certain level," and then that informs when it's going to happen? Or do you think they're thinking in terms of, "It's really calendar dependent—they're going to stop it in six months or the beginning of next year at whatever the funds rate would be at that time." Because I think what we're trying to communicate, at least the way I've been thinking about it, is tying it to the level of the funds rate. I couldn't tell from your report and the survey memo that you sent out if you had a sense of how they're thinking about it. So I would be curious about what your feeling is.

MS. LOGAN. I think you could think of it both ways. Of the 31 respondents that made a change to the timing, 26 brought it forward, and some of that must have just been passing of time. But of those who brought the date forward, 20 of the 26 changed the actual funds rate that it's connected to. So there was some change going on during the intermeeting period of the actual federal funds rate that they were connecting the timing to.

MS. MESTER. Does that tell you that we need to clarify our communications about it, or do you think that's not necessary?

CHAIR YELLEN. Well, it just said "well under way." I should say we are going to discuss reinvestment policy at the next meeting. We'll have several papers.

VICE CHAIRMAN DUDLEY. If you look at the answers over time, though, it looks like we're tied to a level.

MS. LOGAN. A lot of people are expecting us to do it once—

MR. POTTER. It's been between about 1 and 1½ percent for over 12 months. And when we first asked this after the rate increase and the change of language in the postmeeting statement, which is the "flash" survey after the December 2015 meeting, they thought 12 months ahead, because they were thinking, "Well, the federal funds rate could likely have been in that range." And then, as the market path flattened and the SEP changed, you could see some extension for months out under most of them. The dealers are more likely to have it be state contingent than some of the people on the buy side, but there is a general movement in that direction. There is uncertainty about what "well under way" means.

VICE CHAIRMAN DUDLEY. And one more thing. I think the other thing that happened that made it a little bit more complicated this past intermeeting period is because we talked about the reinvestment policy in the minutes, people started to reevaluate: "Well, maybe it's going to happen at a lower federal funds rate than we thought before." So our discussion of it may have pulled some people forward—

MS. LOGAN. That's where I said 17 of the participants did change the level of the rate at which they thought the reinvestments were going to be changed.

VICE CHAIRMAN DUDLEY. Right. There are two things going on.

CHAIR YELLEN. Governor Brainard.

MS. BRAINARD. Yes. I think these questions may be triggered by the same thought process that I'm starting to think about as well as we start to engage in this. We are going to have to decide if we do tie it to a level of the federal funds rate, then, essentially, you're priming the market to expect two changes at the same meeting, which I think is a lot to digest. And so we're going to need to think about potentially separating those things in some clearly communicated way.

CHAIR YELLEN. For the next meeting, we've planned a number of papers on reinvestment strategy, and it will be our topic of discussion for March. Governor Tarullo.

MR. TARULLO. I have a different topic. At one of the meetings toward the end of last year, I inquired whether, in light of the changes effected to money market funds by the SEC rule, this might be an opportunity to put some requirements on the nature of our counterparties in the ON RRP. I think it was Lorie's report in December about the amount of money that flowed out of prime funds but not into government funds—it's kind of sloshing around somewhere, we're not quite sure—that sort of reinforced my thought that if we're going to do something, this might be a good time to do it. Have you had a chance to think any more about how we might go about thinking about that issue?

MS. LOGAN. The staff is looking at that analysis right now. They're looking at the counterparties in full. On slide 12 you can see that we were looking at who the counterparties were that were investing at rates below the overnight RRP rate. We're preparing that analysis, and when the Committee thinks it's appropriate, we can bring that in front of the Committee.

MR. POTTER. Andreas is going to be talking about part of that issue in his briefing.

CHAIR YELLEN. Further questions? [No response] Okay. Seeing none, I need a motion to approve open market operations.

MR. FISCHER. So moved.

CHAIR YELLEN. Okay. Thank you. Without objection. Let's now turn to item 10, a review and discussion of the "Economic and Financial Situation." David Wilcox, Steve Kamin, and Andreas Lehnert will provide the briefings this morning. And I would like to note that Andreas, who has long served as deputy director of the Board's Financial Stability Division, has recently been appointed its director. I'm sure I speak for all of us in congratulating Andreas and wishing him all the best with his new responsibilities.

MR. LEHNERT. Thank you.

CHAIR YELLEN. Thank you. David, do you want to start?

MR. WILCOX.[2] Thank you, Madam Chair. I'll be referring to the little packet called "Material for Briefing on the U.S. Outlook."

Our forecast this time is essentially unrevised from December, but I've been admonished in the past by Governor Fischer, who serves as my oversight governor, not to assume that all of you sit around and memorize the Tealbook in every respect, so I will review the basic contour of the forecast, albeit a little more briefly than

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

usual, and then proceed to touch on developments with regard to sentiment and possible revisions to the Affordable Care Act.

As you can see from the top two panels of your "Forecast Summary" exhibit, the GDP projection—even taking account of the information that has become available since we sent you the January Tealbook nearly two weeks ago—is essentially unrevised from the December forecast. Although some elements of private demand appear to have run a little stronger than we anticipated in December, much of the unexpected strength was in a couple of components—consumer energy services and motor vehicle sales—where we expect to see some near-term payback. In the BEA's advance estimate of fourth-quarter real GDP, which was released after the January Tealbook was closed, the top-line figure—shown by the blue dot in panel 1—was very close to our forecast. The BEA estimate of inventory investment was stronger than we expected and its estimate of net exports was weaker, but especially in view of the preliminary and largely offsetting aspect of the surprises, we have not modified our outlook in light of them.

With no important changes to our supply-side assumptions or to our other conditioning assumptions, our judgmental view of the economy's current and prospective cyclical position—depicted by the black solid line in panel 3—is therefore also close to our December assessment. Our point estimate is that output is slightly above the level of potential at present, and we continue to expect that aggregate demand will modestly outpace aggregate supply over the medium term—albeit to a diminishing degree—leaving the level of real GDP 1¾ percent above potential at the end of 2019.

With regard to the labor market, December's employment report was very close to our expectation and suggests that conditions in the job market continued to tighten gradually through the end of last year. With only minimal revisions to our projected output gap path, our medium-term forecast of the unemployment rate—shown in panel 4—is also little revised since the previous Tealbook. At the end of 2019, the unemployment rate is expected to be just above 4 percent, nearly 1 percentage point below our estimate of the natural rate.

Panels 5 and 6 provide a closer look at labor market developments by race or ethnicity. As is the case for the aggregate unemployment rate—shown by the black line in panel 5—the unemployment rates for these various groups are now close to the levels seen just prior to the 2007–09 recession. The differentials in jobless rates across these groups are approximately as narrow today as they became at their narrowest at the peak of the preceding business cycle, but they are not narrower. Panel 6 plots participation rates for persons between the ages of 25 and 54. These series are more volatile than the aggregate, but the graph suggests that all three groups could be experiencing a modest upturn in participation rates.

The top two panels on the next page summarize the inflation outlook, which is essentially unchanged from December. In these panels I have again used blue dots to show the BEA's advance estimates of fourth-quarter total and core PCE inflation, which came in very nearly as we expected in the December projection. In addition, yesterday's personal income release included monthly PCE price data through December. According to that report, total PCE prices rose 1.6 percent over the 12 months ending in December, and core prices increased 1.7 percent over this period. These rates quoted on a 12-month basis are not shown on your exhibit. Looking ahead, we expect the 12-month change in total PCE prices to reach 2 percent in February before ebbing to 1.8 percent around the middle of the year. Meanwhile, 12-month core inflation is expected to hover between 1½ and 1¾ percent for at least the next several months.

This morning's ECI release was slightly weaker than we had expected. Nonetheless, compensation is estimated to have increased 2.2 percent over the 12 months ending in December, a reading that we think is consistent with the hypothesis that the labor market continues to tighten up slowly against a backdrop of weak underlying productivity growth.

Perhaps the most interesting development over the intermeeting period has been the sharp improvement in some measures of household and business sentiment in the wake of the November election. On the household side, the Michigan index of consumer sentiment—the black line in panel 9—has moved higher, on net, since October. The Conference Board's measure—the red line—has also improved since the election and remains at a high level despite the small decline reported this morning and not reflected in your chart. At least some of these changes in sentiment appear to have been related to the election. In addition to the timing of the improvements, one factor that corroborates the election hypothesis is the tabulation of individual responses to the Michigan survey by self-reported party affiliation, which is summarized in panel 10. As you can see, self-identified Republicans reported a sharp improvement in their sentiment between June and December, while self-identified Democrats reported a deterioration. The Michigan survey included a special question about party affiliation in each monthly survey from June through October 2016. Consumers are resurveyed six months after their first participation, so we expect that the Survey Research Center will be able to continue to look at the connection between political affiliation and sentiment through April of this year. On the business side, the NFIB's gauge of small business confidence—panel 11—posted a further increase in December and is now at a 12-year high. Other indicators of business sentiment—such as the ISM indexes shown in panel 12—have also improved, though not by as much.

In our current projection, we have not built in much of a reaction to these improvements in household and business sentiment. A recent academic paper by Mian, Sufi, and Khoshkhou suggests that election-related changes in sentiment don't appear to leave much of an imprint on consumer spending. Admittedly, this is a bit of a thin reed, as Mian and coauthors depend primarily on just two elections when the White House changed hands—2000 and 2008. The way they get some statistical significance out of those two events is by using county-level data. Furthermore, the jump in the Michigan measure of sentiment in the past few months appears far different from what happened in the previous episodes, suggesting that we're in somewhat uncharted territory.

A couple of caveats are in order, however. First, it could be that the rise in the Michigan measure is sending a misleading signal. For example, there haven't been especially large post-election improvements in some of the relevant series in the Federal Reserve Bank of New York's Survey of Consumer Expectations. Second, for business spending, our models that condition on measures of business sentiment have been overpredicting E&I growth for some time. Hence, while we did boost our near-term E&I projection somewhat in response to the improvement we've seen in these surveys, we refrained from going very far in that direction. Of course, we will be reevaluating both of these decisions in coming months, especially if the recent improvements in sentiment are sustained or even extended further, or if we start to see some persistent upside surprises in the spending data. Thus far, though, we haven't seen much in the actual spending data that would lead us to second-guess these decisions, with the lone exception being December's jump in motor vehicle sales. Indeed, outside of motor vehicles, the one preliminary reading that we have on monthly spending after the election—the one for December—surprised us to the downside.

Finally, with regard to fiscal policy, as you know, the only policy change that we've built into the baseline forecast thus far is a placeholder for a more expansionary fiscal policy. For now, we're showing that expansion as a cut in personal taxes, although we don't intend for that particular formulation to be taken very seriously. This placeholder is the same one that we plugged into the December forecast.

Another item that appears to be high on the priority list of the incoming Administration and the Congress—but not incorporated into our baseline projection—is the repeal of the Affordable Care Act. At this point, it remains extremely uncertain what, if anything, the ACA might be replaced with and on what time frame. One plausible outcome would be enactment of the ACA repeal bill that was passed and vetoed last year. That bill included immediate repeal of the ACA-related taxes and regulations such as the employer and individual mandates, as well as a delayed repeal of the Medicaid expansion and private insurance market subsidies. Drawing on CBO analysis, my colleagues estimate that the 2016 repeal bill would have lowered taxes about $70 billion and cut transfers to the household sector about $120 billion, and so it would have reduced the budget deficit by roughly $50 billion.

Accordingly, enactment of that bill would cause a small drag on aggregate demand—enough to reduce the level of real GDP about 0.2 percent after a couple of years. It might additionally have a small positive effect on aggregate supply to the extent that the ACA subsidies had discouraged work, as the CBO analysis has suggested. Indeed, we built in small effects on participation and the workweek, but aggregate movements in participation and the workweek since 2014 show no discernable dip. The 2016 bill would have little effect, we estimate, on inflation.

According to analysis by the CBO, however, enactment of the repeal bill with nothing in the way of replacement would lead to a sharp increase in the number of uninsured to above the level that prevailed before the ACA. The individual market might unravel because the repeal bill kept the requirement to provide insurance to those with preexisting conditions but no longer had either a mandate or subsidies to entice healthier individuals to buy insurance.

Although the situation is obviously still very fluid, there now appears to be some pressure to couple a repeal bill with provisions to limit that kind of an erosion in coverage. But how the replacement would be structured—for example, how much responsibility might be devolved to the states—is still very much up in the air. So, for now, as far as the ACA is concerned, we haven't just done something—we've stood there. And we think that's probably the better approach until we gain some clarification. Steve will continue our presentation.

MR. KAMIN.[3] Thank you, David. I'll be referring to the material titled "Material for Briefing on the International Outlook." Like the domestic outlook, our forecast for the foreign economies, shown in panel 1, is so little changed from December that it could be described in 140 characters or less. But because you were obliged to leave your cell phones at the door before entering this room, I will proceed with my usual lengthy and tedious oral presentation. [Laughter]

As in the previous forecast, we estimate that foreign real GDP growth in the fourth quarter moderated from its unusually rapid third-quarter pace, and we see it remaining near 2½ percent—roughly its potential rate—for the rest of the forecast period. The outlook for the AFEs—the green line—is dragged down a bit by the effects of Brexit on the U.K. economy. EME economic growth picks up, as China's gradual slowing is more than offset by recovery in South America.

The outlook for the dollar, shown in panel 2, is also almost unchanged from December. After appreciating some 20 percent since the middle of 2014, we have the broad real dollar rising only about 4 percent more over the next three years. This rise mainly reflects the response of markets to increases in the federal funds rate that are faster than they currently expect. Assuming that economic growth abroad holds up as projected, we don't anticipate much further loosening of foreign monetary policy, and therefore we don't see more upward pressure on the dollar from that quarter. Putting this all together, higher foreign growth and a flattening trajectory for the dollar translate into a diminishing drag of net exports on U.S. real GDP growth, as shown in panel 3.

Of course, this outlook assumes that the foreign risks we spent so much time worrying about over the past year do not materialize. Indeed, as described in panel 4, we are much less worried than we were last year about defaults stemming from very low oil prices, and problems associated with Brexit and with European banks seem less likely to roil global financial markets as well. On the other hand, China's

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

economy and financial system remain quite vulnerable to adverse shocks, and we're still concerned that future increases in U.S. interest rates may prove quite challenging for some emerging market economies.

In fact, in a couple of EMEs, financial markets have already come under considerable pressure, although rising interest rates probably aren't the most important factor. In Turkey, investors are concerned about severe political problems, a weak economy, and heavy dependence on foreign financing. In Mexico, as Simon has discussed, financial markets are being roiled by worries about prospective changes to U.S. trade policy, including possible increases in tariffs or enactment of a border adjustment tax, of which I'll say more shortly. As indicated in panels 5 and 6, Mexico is highly dependent on the U.S. economy. Exports to the United States exceed one-fourth of Mexican GDP. Therefore, a 20 percent tax on U.S. imports, for example, could lower Mexican exports by something like 8 percent of GDP. Even taking into account the fact that as much as one-third of these exports are composed of imported inputs, the hit to the Mexican economy would be substantial. Mexico's corporations and banking system appear to be generally resilient, but a recession combined with further substantial peso depreciation could lead to significant financial pressures. In view of the uncertainties surrounding U.S. trade policy, we have not incorporated a Mexican recession and resulting financial turbulence into our baseline outlook, but it's a notable downside risk. And although, as indicated in panel 7, the United States is much less dependent on the Mexican market than vice versa, Mexico is still our third-largest trading partner, and a steep downturn there would create problems for the U.S. economy.

In the remainder of my briefing, I would like to drill down a little deeper on one of the policy options I mentioned earlier: the border adjustment of corporate taxes. In June of last year, the House Republican leadership proposed a sweeping reform of the U.S. corporate tax system, which has received considerable attention in recent months. The proposal is controversial, and its prospects are uncertain. Nevertheless, because of its current prominence, I thought it would be useful to review the proposed tax reform and the prospective consequences of those aspects of the proposal that have the greatest bearing on the U.S. external sector.

The key elements of the proposed reform are shown in panel 8 of your exhibit. Were it not for a significant measure in the proposal that I'll get to in a moment, the reform would essentially convert the current corporate income tax system into a value-added tax. All sales revenues would be taxed at a rate of 20 percent. Purchases of domestically produced inputs could be deducted from taxable revenues. As in VAT systems in other countries, two so-called border adjustment provisions would apply: Corporations would not be able to deduct the cost of imported inputs from their taxable revenues, and firms exporting abroad would, in essence, receive a rebate equal to the tax rate applied to their foreign sales.

However, the House Republican proposal also allows firms to deduct their domestic wage payments from their taxable revenues. This significant measure transforms a VAT-like system into something more like a tax on corporate profits or cash flow. It also advantages domestic producers over importers, as domestic producers will be able deduct wages from their taxable revenues but sales of imports will be taxed at their full value. Finally, with wage deductability, exporters receive substantial tax advantages that should improve their competiveness in foreign markets. All told, the tax proposal provides the equivalent of a substantial tariff on imports and a subsidy on exports.

Besides the border adjustment measures, the House Republican proposal contains two other general provisions: It eliminates the deductibility of interest expenses, and it allows for the immediate deductibility of all capital expenses. For this briefing, however, I will set aside those essentially domestic provisions and focus on the consequences of the border adjustment measures. You may have read articles by prominent fiscal economists arguing that the border adjustment tax will not affect U.S. trade, economic activity, or interest rates—it will merely rationalize the tax system and boost revenues. Their rationale is that the dollar will strengthen by just enough to offset the effective rise in import tariffs and export subsidies implied by the new tax system so that imports will prove no costlier, and exports no more profitable, than they were before. This argument, however, appears to be based on an unrealistic model of exchange rate determination in which the dollar automatically adjusts to keep the trade balance constant. In the real world, we would indeed expect the border adjustment of taxes to push the dollar upward but not necessarily by the exact amount required to offset that tax adjustment. And at least partly for that reason, we would also expect the border adjustment tax to generate significant changes in trade, economic activity, and interest rates.

To flesh out this issue, we traced through the effects of the border adjustment tax in our general equilibrium model. We assume the border adjustment tax is imposed in isolation—that is, we are not attempting to evaluate the effect of lowering the corporate tax from its current 35 percent level to 20 percent. We are also setting aside the additional provisions for capital expenses and interest payments. As shown by the solid blue lines in panels 9 through 15, imports—that's panel 9—fall, exports rise, real GDP and inflation increase, and the federal funds rate—panel 14—must be adjusted up accordingly. In consequence, the dollar appreciates, as shown in panel 15, but by less than the extent of the border adjustment tax. Most of the initial macroeconomic effects of that tax eventually are unwound, but the process takes several years. And in the meantime, there are significant consequences for the economy and monetary policy.

Even if a border adjustment tax is not enacted, tariff hikes may still be imposed on selected products or on imports from selected countries. To provide some basis for comparison, the red lines in these panels show the effects of a comparable hike in import tariffs alone. With no subsidies going to exports in this experiment, exports fall in response to the higher dollar, and the uplift to real GDP and interest rates is smaller. Note that neither of these simulations assume retaliatory action by our trading partners, which would weigh heavily on economic activity and trade. Andreas will now continue our presentation.

MR. LEHNERT.[4] Thanks, Steve. My materials are in the last of your package, "Material for Briefing on Financial Stability Developments."

My briefing is going to summarize our recent QS assessment of the stability of the U.S. financial system, and unlike David and Steve, I do have a few changes to report. Our last assessment, in fairness, was three months ago, in October 2016, and since then we've seen a step-up in valuation pressures for risky assets. But money fund reform can be chalked up as a big step in the right direction, although, as I'll describe later, that story doesn't seem quite over yet. On balance, our assessment is that vulnerabilities overall remain at a moderate level.

I'll start by reviewing asset valuations. Following the election in November, Treasury yields rose sharply. Yields on corporate bonds also rose, but not as much, leaving spreads tighter. As shown by the black line in the upper-left chart, spreads on high-yield bonds have returned to their post-crisis lows. In addition, as shown by the red line, far-forward spreads were part of the decline, suggesting an increase in risk appetite, although these far-term spreads remain above the low levels reached in 2013 and 2014.

Stock prices—not shown—also rose following the election. And, as shown to the right, this rise was accompanied by a significant decline in equity market volatility implied by options prices. Realized volatility has been low of late—as Simon noted, a two-year low—but the low level of the VIX is a little hard to understand in light of the uncertainty regarding the anticipated tax and regulatory changes to which market participants attribute some of the run-up in equity values.

In the middle of the exhibit I show valuation measures for both commercial and residential real estate. To the left I show the spread between the ratio of a commercial property's income to its price—known as a capitalization rate—and Treasury yields. While the levels of cap rates—which aren't shown—have been extremely low in recent years, their spreads over yields on Treasury securities had been in a more normal range. However, the rise in Treasury yields, combined with further declines in capitalization rates, have pushed these spreads to post-crisis lows. To the right, I show a related valuation measure for residential properties—the price–rent ratio. This ratio now stands just a little above our estimate of its long-run trend, suggesting the emergence of some valuation pressure.

Taken together, asset valuations across a number of sectors stand above their historical averages, and, with the recent narrowing of corporate spreads, no major asset class appears to be, at present, without some signs of upward valuation pressures. Accordingly, we raised our judgmental assessment to "notable" from "moderate." I should emphasize that this configuration is neither unusual nor, in itself, cause for particular concern. It does mean that we are focusing more on the leverage in the system, both among financial intermediaries and the general nonfinancial sector. The same risk appetite that's fueling valuations now could

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

eventually lead to increased leverage. And leverage, in turn, could amplify falls in asset prices, whether triggered from a reversal in risk sentiment or a shock to fundamentals.

Our most recent readings on financial leverage, however, show that, if anything, it has declined. As shown in the bottom left, common equity ratios increased for all U.S. banks following the financial crisis and remain at these higher levels. The largest of these banks saw a modest further increase in their capital ratios last year. The panel to the right shows a market-based measure related to leverage—the largest banks' price-to-book ratios. These had been depressed, raising concerns about the future ability of the sector to attract capital. However, because the stock price increases following the election were particularly pronounced among banks, there has been a notable increase in price-to-book ratios. I should also note that among unregulated entities, such as hedge funds, our best information also indicates that leverage isn't increasing.

The next exhibit considers nonfinancial-sector leverage. Here leverage also appears to have ebbed somewhat. As shown in the top-left panel, the inflation-adjusted total stock of risky debt outstanding—defined as high-yield bonds plus leveraged loans—contracted on net in 2016, the first such decline since 2011. Nonetheless, the rapid pace of debt growth through 2015 has left the business sector particularly leveraged. The panel to the right shows gross leverage among firms generally, the black line, and the 75th percentile of the distribution, the red line. While leverage may have stopped increasing, it stands at historically high levels, suggesting that the sector is quite exposed to negative earnings shocks.

The panel in the middle puts the stock of debt owed by businesses and households in a longer-run perspective by plotting the gap between the ratio of the stock of debt to GDP and an estimate of its trend. The credit gap for businesses, the red line, is positive, reinforcing the view that business debt is a bit on the high side. By contrast, the same measure for households, the black line, remains deeply negative as, post-crisis, households have continued to deleverage. While estimating a trend in the ratio of household debt to GDP is fraught with obvious difficulties, a number of plausible alternatives also suggest that household debt is not elevated. On balance, the aggregate credit-to-GDP ratio gap remains solidly negative, suggesting that, in the aggregate, private nonfinancial debt is not yet excessive.

The last two panels discuss developments related to money market mutual funds. Short-term funding markets functioned smoothly last year ahead of the mid-October reform implementation deadline. The new regulations' floating NAV feature has likely reduced the first-mover advantage inherent in these structures, lowering their run risk. In all, roughly $1 trillion flowed out of prime funds and into government-only funds. As a result, we judge that the primary vulnerability associated with liquidity and maturity transformation—that of a self-fulfilling run—is lower than in the last assessment and now stands below its long-run average.

The table in the bottom left shows the composition of money funds' assets in the first half of 2015, before preparations for the reforms by funds and investors began in earnest, and at the end of 2016, following their implementation. The sum of government, prime, and tax-exempt money funds outstanding—shown as the total in line 5—was essentially unchanged at about $3 trillion. However, the mix of assets these funds hold did change. Line 1 shows that money funds' direct holdings of Treasury and agency securities and overnight reverse repo with the Federal Reserve climbed about $850 billion to nearly $2 trillion, although some of this increase reflects the year-end flows into the ON RRP facility that Simon and Lorie talked about earlier. Lines 2, 3, and 4 describe shifts in assets with counterparties other than the federal government—roughly speaking, the funding of private entities like banks. Line 2 shows funds' holdings of negotiable CDs and commercial paper, which fell from about $1 trillion to $300 billion. Line 3 shows funds' holdings of repurchase agreements with banks and other private entities, much of which, of course, is collateralized by Treasury and agency securities. These rose modestly. Line 4 shows a residual category that includes a grab bag of securities, including some issued by state and local governments. These fell by about half.

While the overall risk of a run—either on the funds or by the funds—may be lower now than in many years, this good news comes with a couple of important caveats, discussed to the right. The outstanding amounts of commercial paper and CDs have fallen less than the big drops in funds' holdings of such securities. On the basis of available data and conversations with market participants, we believe these instruments are currently being held in less fragile structures, but the configuration of funding markets is likely still evolving. The net effect of money market fund regulations on financial stability depends on whether alternative investment vehicles with structures and fragilities that echo those of money funds—and which we are less able to monitor—grow in popularity. In addition, financial institutions have replaced some funding lost by money funds with Federal Home Loan Bank, or FHLB, advances. FHLBs themselves engage in some maturity transformation, and their liabilities are increasingly held by government-security-only money funds. Thus, we will be watching the evolving structure of funding markets closely this year.

Exhibit 3 is just our normal heat map. To wrap up, the last exhibit summarizes our current assessment of the major vulnerabilities in the U.S. financial system. We raised our assessment of valuation pressures to "notable," indicated in orange, from "moderate," shown in yellow. Leverage in the nonfinancial sector remains moderate. The risky end of the business spectrum remains quite leveraged, even though the pace of borrowing there appears to have slowed or even reversed. Financial-sector leverage remains low. Finally, the successful implementation of money market fund reforms against the backdrop of a banking sector that is holding large liquidity buffers and the continued gradual decline in the ratio of runnable liabilities to GDP led us to mark down our assessment of vulnerability in this sector to "low," or green. Thank you.

CHAIR YELLEN. Thank you. The floor is open for questions for any of our presenters. President Kaplan.

MR. KAPLAN. Steve, can I go back to this border tax in box 10? I just want to make sure I understand it. The reason, in the border-tax case, why exports go up—are you assuming implicitly that U.S. exporters will be able to lower their prices to be more competitive overseas?

MR. KAMIN. Yes, that is indeed the assumption, because the export subsidy that is basically implied by the corporate tax system lowers their cost and, thus, allows them to—

MR. KAPLAN. Do you think they will pass it on in prices, which means they will sell more?

MR. KAMIN. Yes, exactly. So they can pass it on, and they can sell more.

MR. KAPLAN. And that won't be offset, in your judgment, by the appreciation of the dollar?

MR. KAMIN. It's partially offset.

MR. KAPLAN. But not completely.

MR. KAMIN. But it's not completely offset.

MR. KAPLAN. And then the reason in the tariff case that exports decline is—

MR. KAMIN. Is because in the tariff case, there is no export subsidy. There is only the imposition of the tariff. But the tariff, by basically raising real GDP and inflation, and improving the trade balance leads to a rise in the dollar.

MR. KAPLAN. I see.

MR. KAMIN. That rise in the dollar depresses exports.

MR. KAPLAN. Got it. Okay, thank you.

CHAIR YELLEN. President Bullard.

MR. BULLARD. Just to follow up on that, am I to understand these charts to show that the dollar does not immediately respond? But if it did immediately respond, and in proportion, the blue lines would show no change, for instance, in real GDP?

MR. KAMIN. First, as shown in panel 15, the dollar does immediately respond.

MR. BULLARD. But it doesn't increase enough.

MR. KAMIN. Exactly. If it did increase fully to offset the border adjustment tax, and if there weren't some other rigidities that happen to be built into our system—it takes time for trade to adjust, there is some time involved in producers changing prices, and so on. If those rigidities were not present, and if the dollar went the full amount, then you would get no change in the macroeconomic variables. And that was the argument that was made by various economists in blogs and newspaper articles and whatnot.

MR. BULLARD. Okay. So these are pictures of the rigidities that you think are prevalent in the world that would prevent the theoretical adjustment from occurring.

MR. KAMIN. Yes. Well, let's put it this way. The model incorporates rigidities and other factors that we think would prevent the adjustment that would take place in a perfect foresight, general equilibrium, flex-price solution.

MR. POTTER. But it has some factors in it as well that—

MR. KAMIN. What's that?

MR. POTTER. —oil is priced in dollars, things like that.

MR. KAMIN. There are some factors like that. In our model, as I have discussed with our modelers, some of those factors aren't built in. But let me pick up on Simon's point. In rarified models in which the dollar immediately jumps the full amount of the border adjustment tax so there are no changes in any macro variables, that change in the dollar by itself introduces very substantial wealth effects and very substantial balance sheet effects that indeed might be expected to affect economic activity.

Now, those particular financial effects are not actually built into our general equilibrium model anyway. I suppose they could be. That would require some fairly advanced modeling of the kind that we are developing, and that would be another reason why you wouldn't get the instant jump to what's basically a steady state with an unchanged macroeconomy. In our case, we generate that through other rigidities, but it is also true that changes in the dollar alone can generate financial effects that would, again, prevent adjustment immediately in the way that some fiscal economists have suggested.

MR. BULLARD. Okay. And just to be clear, now, you've got no reaction of foreign economies to the imposition of a border tax here. So if they react in a certain symmetric way or something, could that offset what's shown in these pictures?

MR. KAMIN. Right. In our model, foreign economies do respond with monetary policy tools using the same types of policy reaction functions that we have.

MR. BULLARD. But not through tariffs and—

MR. KAMIN. Exactly. But they do not retaliate via tariffs or taxes. If they did, that could, indeed, significantly diminish the short-run benefits of these measures to the United States. It is worth getting a little bit more specific. Let's put it this way, if we impose a tariff and they impose a retaliatory tariff, that is very clearly a negative for us. And that takes our tariff hike, which has some short-run positive effects on real GDP, and immediately makes it negative.

We haven't done this, but I think things get a little bit more complicated if you think about whether, in response to our border adjustment tax, they actually retaliate with their border adjustment tax. The reason I say it's a little bit more complicated is because the border adjustment taxes actually involve subsidies as well as tariffs. And so a subsidy war actually could have the implication of global fiscal expansion, which—

VICE CHAIRMAN DUDLEY. But, Steve, don't they already have something pretty equivalent in a lot of countries?

MR. KAMIN. Some do, but they could enhance them.

MR. BULLARD. I have another question, but it's on a different topic.

CHAIR YELLEN. How about we complete questions on this topic.

MR. BULLARD. Okay.

CHAIR YELLEN. And I know, Vice Chairman Dudley, you had a two-hander on this.

VICE CHAIRMAN DUDLEY. Yes. One thing I just wanted to add. This is all about goods. What about services? I think about tourism. You move the dollar up by 15 percent, the attractiveness of U.S. tourism goes down, the attractiveness of foreign tourism goes up—so there is a whole bunch of other things that are going to adjust, not just in the goods market or in the financial markets. There is also a services sector.

The question I want to ask you about on this is, my understanding is that there is a real question about whether this would even be legal under the WTO. How does that actually work? If you implemented the border adjustment tax, and then some countries said, "We want to take this to the WTO," then don't you have to wait something like three years?

MR. KAMIN. Well, the number I've heard for how long the litigation would take is five years.

VICE CHAIRMAN DUDLEY. Five years? So essentially it would be a *fait accompli* for a long time.

MR. KAMIN. I think it could indeed be, yes. I should say that it's an open question whether this violates WTO rules at all. In principle, wage deductions are not allowed as part of VAT systems under the WTO.

CHAIR YELLEN. But a payroll tax cut, which it is equivalent to, is fine under the WTO.

MR. KAMIN. Exactly. If the United States said, "Well, we're implementing a VAT because that's an excellent practice, and we're also cutting payroll taxes." We're not lawyers in our division, but anyway, I think it's an open issue. But the point is, even if the WTO decided it was not permissible and other countries sued us, I think it would take quite a while to award them.

VICE CHAIRMAN DUDLEY. Okay.

CHAIR YELLEN. Were there other questions on this? President Lacker.

MR. LACKER. I was a little confused about something involving the exchange with President Bullard. This rarified case in which the equilibrium reaction of the dollar is 20 percent and completely offsets real effects—I take it you've got a handle on what it would take to do that. And you talked about some impediments, some costs, and those to me sounded like costly adjustments, the kinds of things whose effect would fade over time, which would have led me to expect your blue dollar line to get to 20 percent over time. I must be missing some other rigidity in the way you think about things that permanently impedes the achievement of that result.

MR. KAMIN. Sure. I was hoping to avoid getting into this, but I understand that some people are interested in how we make the sausage, so I will proceed.

MR. LACKER. I'm interested in the economics of that.

MR. KAMIN. Yes. Our model is a perfect-foresight model. And so what that means is that in the absence of any of these rigidities, if we basically implemented the border adjustment tax as a fully permanent hike in tariffs and increase in subsidies that would stay that way forever, indeed, in that model, the dollar would jump the full amount of the border adjustment tax. And you would actually have the unrealistic outcome that I was maligning earlier. We think that in the real world, market participants who trade foreign currency don't really have a clearly established view as to what an equilibrium many years down the road will be, and we don't view that as a very strong attractor of the currency. And we view the real world as not being subject to perfect foresight.

We implemented the simulation in a way that is responsive to that concern. The border tax and subsidy do not stay absolutely constant and permanent forever. Instead, there is a very gradual reduction over time in both the border tax and the export subsidy, which is not particularly substantive over the first few years. It just lowers it by a few percentage points, but basically it is enough to unwind the perfect-foresight gravity that otherwise pulls the currency to that longer-run level.

MR. LACKER. And why did you do that?

MR. KAMIN. Because the combination of the perfect foresight assumption and a permanent border adjustment tax gave you a highly unrealistic outcome, and the best way to proxy for the genuine uncertainty that in the real world agents would have about where the currency would go and to what extent trade balance considerations would push the currency would just be to introduce this very, very gradual degradation of the initial policy.

VICE CHAIRMAN DUDLEY. Are there any models that actually try to build in the financial side to figure out what happens to the relative value of foreign assets and domestic assets and solve it?

MR. KAMIN. Well, we are developing those, but they are certainly not in the stage at which they could be applied to this particular example.

VICE CHAIRMAN DUDLEY. But that's what you would want, ideally.

MR. KAMIN. Yes.

MR. LACKER. You both backed away from perfect foresight and you didn't introduce it as a permanent change. You made it a slowly—

MR. KAMIN. Well, no, we kept the perfect foresight but made the shock a little less permanent.

MR. LACKER. Oh, I see. So you did that in order to simulate less-than-perfect foresight?

MR. KAMIN. Yes. Well, in order to simulate a situation in the real world in which agents don't have a clear sense of exactly where the exchange rate would be going over time.

MR. WILCOX. It's probably also worth mentioning that, Bill, we do expect some very powerful constituencies to line up in opposition to the enactment of—

VICE CHAIRMAN DUDLEY. The retail sector, in particular, is quite geared up.

MR. WILCOX. Yes. And they are not the only ones. For example, an issue with the tax would be that exporters would be in a position of having zero tax liability.

VICE CHAIRMAN DUDLEY. Well, they would have negative tax—

MR. WILCOX. Well, negative tax liability under the version of the bill that was introduced by Brady and Ryan. It would not be refundable, so the Treasury wouldn't be writing checks to exporters, but they would be in a position of paying no taxes forevermore.

MR. KAMIN. And if they were combined with other companies that had a lot of taxes, then it would be like they'd get the straight amount.

MR. WILCOX. Yes. That's right. One of my colleagues had the interesting observation that this would give rise to an incentive for Wal-Mart to merge with Boeing. [Laughter]

MR. TARULLO. There's your synergy.

CHAIR YELLEN. Okay. I've got President Rosengren and then President Kashkari afterward.

MR. ROSENGREN. My question is for Andreas. It's in exhibit 1, "Spread of Capitalization Rate at Origination to Treasury Yield." I'm just wondering whether that is the most relevant comparison, because when I think about cap rates for commercial real estate, they are very slow moving. And when I think of how Treasury yields have moved, they tend to move very quickly. If you look at December, it looks like a 1 percent decline in that measure. But I think that's because Treasury yields went up, not because there was a big movement in commercial real estate prices. And, in fact, much of this movement seems to be driven by Treasury yields rather than commercial real estate valuations. So I just wonder whether you think this is the most useful way to determine valuation in the commercial real estate market.

MR. LEHNERT. This has the notable value of being easy to grasp, easy to present, and also telling the right story. So, first, in terms of what actually happened to the level of the cap rate, I was interested to see that it actually ticked down in December. For whatever reason, rents weren't keeping pace with the price increases we saw then.

A bunch of our colleagues here have looked in more depth at commercial real estate valuations and are actually trying to incorporate fundamentals such as vacancy rates, rent growth, and interest rates but, let's say, in a richer fashion. And the upshot of all of that is that valuation pressures are notable in CRE. It really does feel that in a lot of markets and for certain property types, people are paying over the odds in terms of their history. It's not as extreme as it got in 2005 and 2006, but it's on par with maybe the late '90s in terms of valuation pressure.

MR. ROSENGREN. Thank you.

CHAIR YELLEN. President Lacker.

MR. LACKER. There are others in front of me, I think.

CHAIR YELLEN. Sure. President Bullard, you had another question?

MR. BULLARD. Thank you, Madam Chair. I have a question on the "Material for Briefing on the U.S. Outlook," Forecast Summary page, the Unemployment Rate chart, which is panel 4. We're using confidence bands around this, which are 70 percent confidence intervals. If you look at this band, I'm wondering how comfortable we should be with this. This band shows 70 percent confidence intervals of 3 to 5 percent two years, three years out. It looks pretty symmetric. It's putting about a 15 percent probability on a less than 3 percent unemployment rate and almost no probability on a more than 6 percent unemployment rate. I'm wondering what we should do as the unemployment rate goes down. Does this distribution get more skewed to the upside because there's some probability you go back into recession?

MR. WILCOX. We made an effort at trying to show that on page 67 of the Tealbook. The confidence intervals that you're pointing to in the exhibit that I passed around are generated out of FRB/US, and those have a number of operational or logistical conveniences associated with them. We can generate them under almost any circumstance, at any given time. We can project them out a long way because the FRB/US model doesn't get tired [laughter], unlike human analysts.

What's shown on page 67 of Tealbook A is an effort to go in your direction and take account of actual characteristics, including asymmetries in the forecast intervals. Now, these are based on actual track records of staff forecasts. And what you see in the upper-left panel is that the confidence interval is asymmetric in the way that you described.

MR. BULLARD. And so could we use this, or you're not ready to report that?

MR. WILCOX. Well, to paraphrase the line from the movie, I'm not sure who this "we" is, Kemosabe. [Laughter] We provide you with these confidence intervals that are shown in the Tealbook, but for purposes of putting together the kinds of exhibits that I show regularly, my own preference here is to continue using FRB/US-model-generated confidence intervals. We do cross-check them against one another to make sure that the model's confidence intervals don't stray in their characteristics too awfully far from the others. I was going to call on either Dave or Jeremy Rudd. In general, my impression is that the FRB/US model's confidence intervals are a little narrower than the actual judgmental track record has been.

MR. REIFSCHNEIDER. I think the question that you're getting at is actually not addressed by either the FRB/US or by the Tealbook errors, because what you're getting at is an issue called "state contingent" confidence intervals. So David's asymmetry would apply. What you see in the Tealbook would apply if the unemployment rate was 7 percent. They've got a sample skewness there, but it's not conditional on being at 4 percent unemployment.

In FRB/US, that's not computed that way either, partly because the way it's run is that it doesn't think that the errors or the shocks or that the mechanism of the economy is any different whether the unemployment rate is at 5 percent or 6 percent or 4 percent. But there is a literature that says that things look different when the unemployment rate is very low versus when the unemployment rate is very high. So nothing the staff has available at this point gets at the issue that you're raising, but people have worked on that.

MR. WILCOX. We just simply don't visit 4 percent unemployment often enough to have—

MR. REIFSCHNEIDER. It's very difficult to get reliable statistics using historical errors to get at this issue you're raising. In theory, you could do it with a model, but you'd have to have a model that has different states of the world and in which the dynamics change in different states of the world.

MR. BULLARD. Well, I appreciate your answer. I just want to stress that we probably shouldn't be putting a lot of probability on unemployment outcomes that we've not really observed in the postwar era.

MR. REIFSCHNEIDER. Yes.

MR. EVANS. Can I ask you a clarifying question? I should know how these are calculated, but I've forgotten. The uncertainty here—how much of it is associated with parameter uncertainty, and how much is realization of shocks?

MR. REIFSCHNEIDER. In the FRB/US model, it's all shocks. But in the Tealbook errors, it's everything that could go wrong—it's the actual errors that were made over history.

MR. EVANS. Because I'm sure we've all been out in public and you run into somebody and they say, "Oh, you are terrible at forecasting," right? Things like that. In my mind, I always think of this as, well, I've either got a model that I like or don't like. That's parameter uncertainty. And then, of course, a year or two from now things happen, like trying to explain why Alabama lost the championship game because the running back got taken out of the game. I mean, who thinks of that? It's not the forecaster that was so much at fault, but it's events that took place. And this is all about events, isn't it?

MR. REIFSCHNEIDER. Yes, and that's the advantage of using the Tealbook errors, because those are the errors that are associated with stuff that actually happened. The only question would be: Is the 20-year period, or whatever we use, is that—

MR. WILCOX. Can we just level-set what we're talking about? The confidence intervals that are shown, for example, in panel 1 of my forecast summary are generated under the assumption that the model structure is known, that the parameters are known, and that the only relevant source of uncertainty is the error term that attaches to each of however many behavioral equations there are—40 equations, or something like that. The confidence intervals that are shown in Tealbook A, page 67, are based on our actual track record and, therefore, encompass in principle both that event shock but also model uncertainty, parameter uncertainty. In principle, they're all-encompassing.

MR. EVANS. Thanks.

CHAIR YELLEN. President Lacker.

MR. LACKER. Thank you. Since the election, there's been this major move in equity values, and it's about 8 or 9 percent, so I was really eager to get my financial stability memo, because that's where I was figuring I could count on an assessment of this thing that gets debated in the press, which is the extent to which this represents a warranted revision of the fundamentals underlying dividend growth or not. And I was a little disappointed by the extent of your discussion of that question. I was happy there was an interesting box in the Tealbook about dividend growth projections. That seemed informative. But I was yearning to hear you tell us [laughter] whether equity moves have outstripped the move in fundamentals.

Now, there was something in there about historical percentiles, and that got me thinking, well, maybe when you say valuation pressures, I should just take that as a statistical term about historical things even though things change in the future. And maybe the valuation change is warranted even though it's out in the tail of historical distribution. Could you help me with this, Andreas?

MR. LEHNERT. Yes. I guess we don't want to be in the business of telling the Board or the Committee whether valuations are right. I think we have a certain level of humility about all of those things, and so the most that we can do is tell you, given the best models that are available, are we looking at something that's "rich" or "cheap" by historical standards? And then, we also—again, learning a lesson from the 2005–06 experience—look at nonprice measures of excitement or, for want of a better term, "heat" in the financial system.

So, I wish that our models could tell us the probability of a big decline in asset prices so that we could build that in. But, as you know, by the efficient markets hypothesis, those are hard to sustain, hence the pointing to historical experience.

I wouldn't describe it as a purely statistical exercise, again, because we're bringing in a lot of these nonprice measures. In the case of the equity market, one could debate whether earnings trajectories should be marked up, in fact. It does seem that it's not a time when we're at a two-year low in terms of the uncertainty about that issue. I hope that satisfied you a little bit. I'm sorry to disappoint you, President Lacker.

MR. LACKER. Well, I do find that informative. I've always been curious about the relationship between the efficient markets hypothesis and the work of the Financial Stability Division. That clarification is helpful. Thanks.

MR. KAPLAN. I hate to get into this discussion, but I'll just make one comment, which maybe hasn't been talked about enough. The mean estimates of the value, right or wrong, of a corporate tax reduction, even to 25 percent, are about $9 per share, annualized. So if you take $126 and take that to $135, you could also argue it may be more than just animal spirits. Some of that increase from a corporate tax reduction is being reflected in the market—who knows how much, but it's probably a good bet that some of it is.

VICE CHAIRMAN DUDLEY. Of course, that's assuming that the corporations get to keep those profits, right? I mean, there's a competitive—

MR. KAPLAN. Of course. But it just gives you a sense of—for people running models, which people on the buy-side do—that's the best estimate I've heard that people have congealed around.

MR. LACKER. So it makes it seem plausible.

MR. KAPLAN. Yes.

CHAIR YELLEN. Vice Chairman.

VICE CHAIRMAN DUDLEY. Yes, thank you. First of all, I want to thank Steve for tackling the border adjustment tax issue. This is a really consequential piece of legislation, and if it were actually enacted, it would have really big implications for how we think about the world on this Committee. So I hope that you keep digging into this even though we don't have the greatest models in the world to look at this, but this is a really big deal if it were to actually pass.

Second, I just want to say that there was a comment about the Michigan survey in terms of the political affiliation. We were quite interested in that, so we took a look at the implications for our own survey, the New York Fed's Survey of Consumer Expectations. We don't capture political affiliation. Instead we looked at if you're a Republican county, if you're a Democratic county, if you're in between, and we found the same exact results. The confidence went up in the Republican counties. It went down in the Democratic counties. So, obviously, it's not as big an effect because counties aren't a person, but it very much corroborates the results of the University of Michigan.

And, finally, I had a question for Andreas. In the border discussion, you passed over the deductibility of interest. If you did get rid of the deductibility of interest, how are we thinking about that? Because I remember the Tax Reform Act of '86, which changed the depreciation rules quite substantially and had huge consequences for real estate. What do we think would happen if we got rid of the deductibility of interest and we started to think about that? Are there instances in which relative prices would change in a big way, and are there things we should be nervous about?

MR. LEHNERT. Yes—I mean, if that goes through to actually eliminate the mortgage interest deduction. Of course, also, the mortgage interest deduction becomes less valuable as you cut personal income tax rates. It does seem that house prices would fall as a result.

VICE CHAIRMAN DUDLEY. I was thinking more on the corporate side.

MR. LEHNERT. Yes, but house prices are, from a stability perspective, quite a big deal. And I should also advertise my colleague David Rappoport's recent working paper on this topic, which gives some estimates of the size of the change in house prices.

On the corporate side, the deductibility of interest is one of those wedges between the public and private cost of debt. In principle, especially for the financial services industry, you ought to eliminate one of those areas in which there is a private desire to maintain leverage. But, again, a foregone tax revenue is a social cost—and, of course, there is also the deadweight cost of a higher-leveraged system. Now, I don't think at this point that the tax engineering is the most important determinant of financial firms' credit structure. I think regulations and so forth are the driver there.

Then looking at the nonfinancial sector, it does seem like that's the sort of thing that might take a little bit of gas off the fire of corporate borrowing. It does seem that the corporations that are borrowing the most are the ones that have or anticipate having the biggest growth in their cash flows. So it seems like a betting on expansion rather than, again, financial engineering. And, again, it does feel like the credit cycle on the corporate side seems to have slowed notably in the past few quarters.

VICE CHAIRMAN DUDLEY. It seems like removing the deductibility of interest would actually make the system more stable, right, because you'd have less incentive to take on a lot of leverage in the system. But there'd be some big adjustment costs as you move to the new equilibrium.

MR. LEHNERT. Yes, exactly.

VICE CHAIRMAN DUDLEY. Thank you.

CHAIR YELLEN. Any further questions? We now have an opportunity to comment on financial stability, and a few people have indicated a desire to do so. Let's turn to that next, starting with President Rosengren.

MR. ROSENGREN. Thank you, Madam Chair. The QS report did a nice job of highlighting that Federal Home Loan Banks are increasingly funding illiquid real estate assets with short-term borrowing from government money market funds, and Andreas covered that a bit in his presentation as well. Money market funds now hold over 50 percent of the debt issued by Federal Home Loan Banks, up from 30 percent in 2014, and the Federal Home Loan Banks with some of the weakest reported capital ratios have been some of the most aggressive issuers of liabilities. Over the three years ending in September 2016, two of the Federal Home Loan Banks with among the lowest capital ratios increased discount issuance by more than 200 percent.

Thus, while recent money market reforms have diminished the financial stability risks of runs on prime money market funds that have taken losses, in one respect, the benefit may not have been as great as it appears. While banks now receive less direct funding from prime money market funds, banks are increasingly the recipients of funds coming indirectly from government money market funds through the Federal Home Loan Banks.

Should real estate values sink and confidence about the implicit government backing of the Federal Home Loan Banks drop, investors might run from funds with large Federal Home Loan Bank exposures, especially if those Federal Home Loan Banks are weakly capitalized. Alternatively, the money market funds themselves might choose to sharply reduce their holdings of Federal Home Loan Bank liabilities. While this might seem unlikely, it is the unexpected violation of widely held assumptions that tends to generate financial stability problems. Furthermore, it should serve as a reminder that declines in real estate values can cause problems through a variety of channels, and we should not be overconfident that we understand fully how such a decline in real estate values would affect the financial system. Thank you.

CHAIR YELLEN. President Williams.

MR. WILLIAMS. Thank you. Governor Powell gave a very nice speech at the American Economic Association meetings highlighting an issue that we talk about a lot in terms of monetary policy, and that I'd like to see more research and study of. In particular, that's the relationship between very low interest rates and a flat yield curve, on the one hand, and financial stability, on the other hand—by that I mean incentives to take on leverage, risk-taking, and bank profitability.

In Governor Powell's speech, he talked a lot about the current context: very low interest rates and the tradeoffs in monetary policy and goals. But, from my perspective, if *r**, the natural rate of interest, really does stay close to zero or very low around the world as current estimates indicate, I think that these issues are actually going to be with us for a very long time. And thinking through this very low rate and also our large balance sheet—a very flat yield curve may be around for maybe another decade. It raises a number of issues that are not just about the current cyclical state of the United States, but, I think more importantly, maybe a longer-term global issue that we are going to need to be focusing on in terms of longer-term strategies.

So what I'm highlighting is, I would love to see more analysis and research so we understand what these tradeoffs are likely to be in the long run, even as we normalize monetary policy in the United States. Thank you.

CHAIR YELLEN. Thank you. Governor Fischer.

MR. FISCHER. Thanks, Madam Chair. Like you, I would like to thank Nellie for her devoted and successful service in building up what is now the Financial Stability Division and in populating it with high-quality analysts, among them Andreas, who has taken over as director.

MR. TARULLO. She's not going to hear this compliment for five years. [Laughter]

MR. FISCHER. Has she actually stepped down?

CHAIR YELLEN. Yes.

MR. LEHNERT. Today is her very last day.

MR. FISCHER. Yes. So I can tell her. If I call her before midnight. [Laugher] We all wish Andreas success in his important role.

In view of the length of today's discussion so far, I'll speak briefly and pointedly, and I want to make a few points. I'm talking about the basic things that are going on in the financial system and that are likely to be with us for a while. First, the macroprudential tools for the regulators and supervisors of the financial system are inadequate. We here have considerable control over lending in the large part of the financial system that we supervise, but we do not have the authority that regulators in many other countries have to set loan-to-value or debt-service-to-income ratios on mortgages, or both. Because major financial crises frequently involve real estate financing, this is an important problem. Now, in effect, Fannie Mae and Freddie Mac have this authority over the mortgages they insure, but their authority has not been used for countercyclical purposes.

Second, we don't have adequate tools to deal with much of the shadow banking system. There has been a major success in dealing with money market mutual funds, but the shadow banking system will likely be the source of instabilities for years to come, and it will be the focus of a major part of the division's work program this year.

Third, nine years after the start of the great financial crisis, international negotiations over one basic element of the regulatory system, the risk weighting of bank-held assets, remains under discussion. Studies of the differences in risk weights assigned to the same asset by different banks led to the conclusion that there should be a substantial role for a standard set of risk weights in calculating risk-weighted assets. The negotiations over this issue continue, and it's important to conclude them. In that regard, we should applaud the role that Governor Tarullo is playing on this and other issues.

Fourth, and this goes back a while, the provisions limiting the Federal Reserve's ability to operate as a lender of last resort in a crisis are untested and could constrain the execution of this critical function, a constraint whose cost to the economy could be very high.

Now, nothing I'm saying should be construed as a criticism of what has been achieved since the start of the Global Financial Crisis. Our financial system is much more robust than it was a decade ago. At the same time, we should recognize that much of what our regulators do is to carry out an intelligence function, and, as we know, intelligence agencies have all had their failures and their crises. We thus need not only to reduce the probability of crises, on which there has been an enormous emphasis up to now, but we need also to be prepared to deal with them when they arise, for they will arise. Thank you.

CHAIR YELLEN. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. I found the quarterly assessment of risks to financial stability interesting and helpful, as always. The key "takeaways" are fairly straightforward. Valuation pressures have risen to "notable" for the first time in a year, while financial-sector leverage remains low and risks associated with maturity and liquidity transformation have moved lower.

The reassurance we derive from the assessments of low risks associated with financial-sector leverage and liquidity and maturity transformation is due, in very large part, to the core reforms that we and other regulators have put in place in line with our statutory responsibilities in recent years and months. The low leverage and sounder liquidity and funding practices in the systemic banking institutions at the core of our financial markets are critically important to the overall moderate assessment of vulnerabilities. And the recent implementation of money market reform is also noteworthy, with assets in prime money market funds having fallen more than two-thirds over the past year, well above what had been anticipated, which has been accomplished with minimal disruptions to domestic funding markets so far.

Looking ahead, I would view with much greater alarm a buildup of valuation pressures and evidence of increased risk appetite if these developments were accompanied with any erosion in the core rules that are in place to reduce systemic risk and undergird financial stability. For these reasons, I think continued vigilance is very important. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you. I have been spending considerable time trying to figure out what message we're getting from markets. Normally when uncertainty climbs, risk premiums increase, the equity market falls, and credit spreads widen, but that's not what we've seen post-election. So what's going on? And should we worry about the risk of a sharp reversal? I don't profess to have the answer to this, but I'll make a couple of tentative observations.

First, I think the markets are doing well in spite of greater uncertainty, because I think there's a perception that the risk of a near-term U.S. recession has dropped. And because of the perception that the prospect of political gridlock in Washington has diminished, the sharp narrowing that we saw in high-yield OAS spreads is consistent with this notion that Simon talked about, that recession risks have diminished in the near term.

I also think that the international outlook does appear to have improved somewhat, even though there was a downshift in the growth rate in the last quarter. We've had a recovery in commodity prices. The dollar has appreciated, which we think is important because it removes some of the deflationary pressure on Europe and Japan. And I have been surprised that Brexit has not had really bad consequences, at least yet, for U.K. economic performance beyond the weakness that we see in sterling. So a lot of the things that we were worried about haven't materialized, and so that seems to be supportive for greater optimism.

Now, on the issue of the anxiety about European banks, I agree with Steve that the concern about that has receded. My own view is that while the sentiment about European banks has improved, the underlying situation really hasn't changed much. There are a few key systemic banks that still have inadequate capital. They still have poor earnings outlooks. There are still questions about the viability of their long-term business models. So this is an issue that has maybe gone away from a sentiment perspective, but it's still really there in terms of the fundamentals.

Now, the fact that the markets are buoyant now, in my mind, could just be setting us up for a bigger, sharper correction or adjustment later. I can imagine that, if we got a program of substantial fiscal stimulus, that could push the U.S. economy well beyond full employment. In that situation, we might have to slam on the brakes pretty hard, and that might increase the risk of a large rise in bond yields, a much slower stock market, and a recession. Now, that's not priced in. That's over the horizon.

Or the professed goal of the Trump administration, to get tough on trade, could lead not necessarily to better trade deals for the United States, but just a significant increase in trade barriers and the resultant bad set of consequences that would flow from that, including higher inflation. So it seems to me that we may be trading a greater likelihood of a sustained expansion over the next year or two for a greater likelihood of a hard landing later. I'm not sure if that's a major financial stability risk, but it does imply a higher likelihood of greater stress on the system and much greater price volatility at some stage. And if that were to occur, that could expose some inherent weaknesses in our financial system that's been in a long period of moderate growth and a long period of relatively low financial market volatility.

I think there are already some warning signs of excess in addition to what was talked about earlier: Used-car pricing assumptions that are used in auto leasing seem awfully optimistic; multifamily capitalization rates are very low; and also the overhang of retail property is getting a lot of attention in New York as more retail sales migrate to the Internet. Now, the retail property sector in the United States is very overbuilt. If you look at the space per capita in the United States compared with other countries in retailing, we have multiples of the space per capita of most other countries, and, with more volumes shifting to the Internet, the pace of store closings is increasing. Following the holiday season, we saw a whole series of store-closing announcements from Macy's, J.C. Penney, and Sears. In fact, the Limited declared bankruptcy, and they're closing all their stores.

The good news on the retail side is, it's not that big of a sector if you look at it relative to, say, housing, and it looks like the debt exposure is pretty broadly distributed across a lot of different players: insurance companies, REITs, pensions, other institutional investors, as well as depository institutions. But it does seem like this is a sector that we can be almost certain is going to be under fundamental pressure in the years ahead. So I would just encourage the staff to maybe do a little bit of a "deeper dive" into that particular sector. Thank you.

CHAIR YELLEN. Thank you. If there are no further comments on—

MR. FISCHER. Could I just ask a question?

CHAIR YELLEN. Yes.

MR. FISCHER. Vice Chairman Dudley, do we count Amazon as part of the retail sector?

VICE CHAIRMAN DUDLEY. Yes, it's part of the retail sector, but it's not part of the retail store space.

MR. FISCHER. It's not part of the real estate.

VICE CHAIRMAN DUDLEY. Well, there's real estate. They have warehouses rather than malls. So it's not like the real estate is going to go away. As you pull dollars out of the malls, you're going to put them into the warehouses. But I expect the warehouses probably have a much higher retail sales density rate than the malls. So, on net, there's probably quite a bit less real estate, and those warehouses are not necessarily located where malls are located.

CHAIR YELLEN. President Kaplan.

MR. KAPLAN. I'm going to ask one more question. I was going to ask it earlier, but I used up my questions. This is on page 107 of the data sheets. I see we go out to 2019 on government debt and the size of the deficit. The CBO graph shows there's going to be a "hockey stick" in the next five years, and my concern is, depending on what fiscal policies are, in fact, implemented, we could have an even further deterioration of this situation. I can see how, when the next recession hits, the fiscal situation will possibly have deteriorated meaningfully from where we are today, and the FOMC will be the entity to which everyone looks for a response. So, in light of the growth in entitlement spending projected by the CBO, I think it might be useful to extend the charts on page 107 to 2020 and beyond, even if it's in summary fashion. I just think it would be useful to look at this projected deterioration. I have a funny feeling in the years ahead we're going to be looking at the debt and deficit outlook a lot more closely as maybe a very high source of instability that we will be increasingly expected to deal with.

CHAIR YELLEN. Okay. I suggest we take a break for about 20 minutes. We will resume around 3:30.

[Coffee break]

CHAIR YELLEN. Let's get going again. I think we're now ready to being our economic go-round. President Lacker is going to start us off.

MR. LACKER. Thank you, Madam Chair. Our surveys, and reports received from business contacts, indicated that economic activity in the Fifth District continued to strengthen since the previous FOMC meeting. The manufacturing survey improved for the third consecutive month and indicated solid activity in January, led by increases in shipments and new orders. Service-sector activity also continued to expand more broadly since the December meeting. Expectations regarding activity over the next six months improved in both surveys as well.

The overall tone from contacts continued to be quite positive, although there was some uncertainty expressed regarding potential changes in fiscal and trade policy. A number of contacts reported increased business investment or plans to increase investment in 2017. One of our directors whose firm fabricates and installs structural steel for large commercial buildings indicated that he was very bullish about the economy, and his company was purchasing equipment and planning a new facility. A leading manufacturer of gypsum board, cement boards, and finishing products reported a jump in capital expenditures for 2017. Contacts in the auto and industrial supply sector reported strong investment as well.

Comments from our service-sector contacts were positive, on balance, as well. An engineering firm reported strong demand and so much difficulty finding workers that they were declining projects. A banker noted that consumer and commercial demand had been healthy and that business was "currently as good as it gets." He also said that he had heard strong optimism from customers, who indicated that they were investing in real estate and infrastructure for their companies. A staffing agency specializing in accounting, finance, and human resources reported a very strong December and January due to tight labor market conditions and noted that firms were using fewer temporary workers and instead were looking more for direct hires. She further noted that this was making it difficult for staffing agencies to maintain a deep temporary labor pool.

Not all of our contacts were positive, however. A dealer in heavy construction equipment noted that customer doubts about their pipeline were causing them to lease equipment rather than buy. Several contacts in the transportation industry noted that conditions were improving but remained weak. A number of contacts relayed concerns regarding upcoming federal policy changes, including the potential repeal and replacement of the Affordable Care Act as well as trade and fiscal policy.

A defense industry executive noted that there was tremendous uncertainty in their sector, citing the federal hiring freeze and the lengthy confirmation process for agency leadership. In addition, she noted that potential shifts in U.S. diplomatic posture in some regions could cause foreign governments to reevaluate strategic alignments and shift their defense acquisition strategies toward non-U.S. suppliers.

Turning to the national economy: I agree with the staff's assessment that the usual statistical reports provide little reason to alter the outlook. U.S. households have benefitted from robust employment growth and are expecting further improvements in labor market conditions. Thus, consumer spending was strong in the fourth quarter and is likely to be solid in the current quarter and beyond, even in the absence of tax cuts. Rising employment, rising incomes, and rising consumer sentiment should all support continued growth in consumer spending.

The residential outlook for this year is more opaque. It is possible that rising household formation will boost the demand for new homes and support growth in residential investment, but it's not clear that supply constraints on new home construction are easing, and their continuation would be a headwind for residential investments. And a firmer rate environment could damp demand this year, as the Tealbook suggests.

The Tealbook forecast includes strong growth in non-residential fixed investment this year, and I agree with that outlook based in part on incoming data, such as the increase in oil drilling and the firming of new orders for capital goods. But I also put some weight on the improvement in business sentiment since the election. In addition to the anecdotes, such as those I cited earlier, there's a notable jump in small business optimism that was reported by the NFIB, and the Conference Board's measures of CEO sentiment have risen notably in the fourth quarter as well. In short, the consideration of the usual spending measures supports a forecast of overall growth continuing at an above-trend rate, which should lead to additional tightening in labor markets.

In the near term, I would expect employment growth to average near last quarter's pace of 165,000 jobs per month. That's below the Tealbook's first-half estimate of 183,000 jobs per month. Even so, my forecast is more than double the benchmark for breakeven employment growth, so I expect a continued decline in the unemployment rate or an increase in the labor force participation rate or both.

The significant rise in inflation breakevens since the election has been noteworthy, I think. The 10-year breakeven is now 10 basis points higher than it was in October 2014, the first meeting at which our statement mentioned that inflation expectations had declined. This supports the case that inflation will rise toward 2 percent even if it is held down temporarily by base effects in the near term.

I continue to anticipate the need for policy rates to rise briskly this year, and we may need to move at non-press-conference meetings, in my view. In any case, I fervently hope we'll increase rates a few times before I retire.

MR. FISCHER. If that's what it takes. [Laughter]

CHAIR YELLEN. President Rosengren.

MR. ROSENGREN. Thank you, Madam Chair. Incoming data since the previous meeting have not changed the forecast I had in December. My current forecast is similar to that of the Tealbook forecast. My policy assumption is also similar for 2017. My modal forecast calls for four increases, but with the acknowledgement of the possibility that more rapid tightening may be in order in the out-years, in order to prevent a large overshoot of full employment in the labor market.

The private-sector forecast for 2017, which is the Blue Chip consensus forecast, like the Tealbook and my forecast, has the unemployment rate falling to 4½ percent by the end of this year, with the decline continuing in 2018. The December median SEP differs from my forecast in that the SEP unemployment rate median gets to 4½ percent at the end of this year and remains there. despite the real GDP growth forecast over the next three years averaging 2 percent. In contrast, I expect the economy to grow somewhat faster than 2 percent, which is above my estimate of potential at 1¾ percent, and, as a consequence, I expect the downward trend in the unemployment rate to continue.

My somewhat higher growth in part reflects the assumption that we will have fiscal stimulus at the magnitude in the Tealbook. The assumed increase in fiscal policy stimulus is consistent with the financial market movements we have seen, including the significantly higher prices in stock indexes and improvements in numerous indexes of business and consumer confidence. While many aspects of fiscal policy are unclear, actions taken to date do seem consistent with a lower corporate tax rate and an emphasis on significantly reducing government regulations. Regardless of whether the movements in stock prices and confidence indexes reflect diminished risk aversion, confidence that fiscal stimulus makes a downturn in the near term less likely, or animal spirits released by the promise of lower taxes and less regulation, I do think that the positive movements we have seen since November do imply the possibility of growth as fast as, if not faster than, the Tealbook.

However, the modal forecast does not capture possible heightened tail risk. Indeed, threats of possible trade wars, fiscal hiring freezes, or an abrupt end to the ACA make me concerned that downside tail risks may be elevated. However, it is noteworthy that financial markets seem to have priced in much less risk with stock market volatility indexes at surprisingly low levels.

The possibility that labor markets become tighter and cause more wage pressure is addressed in one of the alternative scenarios in the Tealbook. My staff looked at whether tight labor markets were generating higher wage pressures by looking at the CPS microdata, which allow one to control for compositional effects, such as varying productivity and price- and wage-setting patterns across industries that make it difficult to isolate the effect of labor market slack in some aggregate wage measures.

They find that the relationship between nominal wage growth and labor market tightness has strengthened recently and is consistent with the pickup in wages evident in the Atlanta Fed wage tracker. Such a finding suggests we may not have the luxury of waiting long to return to a more normalized monetary policy. The data are also consistent with evidence that we have undershot the natural rate of unemployment. As we have discussed here before, I fear that such an undershoot is worrisome in itself, as it may force a more aggressive subsequent policy response—which would risk a large reaction of the economy as the unemployment rate rises back to the natural rate.

Thus, while I cannot dismiss the concerns that the spate of optimism in financial markets and confidence indexes will be ephemeral, should such optimism be more enduring, I would worry about an overshoot like the modal forecast in the Tealbook. Such an outcome, in my view, would likely not be sustainable and would require significantly more tightening than shown in the December SEP and contained in the Tealbook. Thus, my policy comments tomorrow will reflect the risk I see should the Tealbook forecast be an accurate representation of what actually unfolds. Thank you, Madam Chair.

CHAIR YELLEN. Governor Fischer.

MR. FISCHER. Thank you, Madam Chair. The economy of the United States is in a good place but with major—that is, very large, some would even say "yuge"—uncertainties hovering over it. The good news about the U.S. economy is much the same as it was when we met seven weeks ago on December 13 and 14: Unemployment is at or below most estimates of the natural rate, the PCE inflation rate is close to reaching its target rate of 2 percent, and there are few problems that need FOMC intervention. To be sure, the low growth rate of productivity and the consequent low growth rate of real GDP are major problems, but monetary policy can, at best, contribute relatively little to increasing the growth rate of the economy on a sustained basis.

Further, conditions abroad have improved. Both the growth rate and the inflation rate of the euro zone have increased. The projected decline in British growth that was expected to follow a Brexit election victory has not yet appeared, though we should remind ourselves that Brexit has not yet happened and that Britain is still a member of the European Union bound by its rules. The Chinese economy grew rapidly in the fourth quarter of 2016, although the engine of growth is one that will not be permanently sustainable. The Indian economy, however, is suffering from an "own goal" following an ill-prepared monetary experiment. And the Japanese central bank, according to the newspapers today, believes that it is in a good position to begin growing more rapidly again. Commodity prices have risen, and commodity producers, including oil-producing countries, are doing better.

In terms of U.S. growth, the more timely Tealbook—for the production of which the staff deserves our thanks and commendation—presents an analysis of an expansionary fiscal policy consisting of an increase in the primary budget deficit by 1 percent of GDP. This expansion is assumed, at least for the meantime, until the proposals under consideration take more shape, to take the form of a cut in personal income taxes beginning in the third quarter of this year. It is calculated to increase the growth rate of real GDP by ¼ percentage point per year in 2017, '18, and '19, which means that the level of real GDP would be ¾ percentage point higher by the end of 2019.

Of course, as the Risks and Uncertainty section later in Tealbook A, which includes fan charts, makes clear, a wide variety of possible fiscal outcomes remain in play. In addition, we plan at our next meeting to discuss considerations for beginning to reduce the size of the Federal Reserve's balance sheet. In light of the very small amount of information about the economy that has arrived in the data received since our December meeting, it's clear that no change in the interest rate needs to be on the table today. What we do in March will depend on the data that come in before that meeting.

I would like to conclude on the same note on which I began. The specter of a possible end of the second age of globalization hangs over us. In the period between the two world wars, a great deal of attention was paid to competitive depreciations, known also as "beggar thy neighbor" policies. This latter phrase, which has a wider context than just depreciations, applies to what has been happening to the Mexican economy since November 8. More of that approach carries great dangers for the world economy, not least for the U.S. economy.

We also need to remind ourselves of Kindleberger's conclusion from his studies of the global economy that the world economy needs a hegemon. That role has been played for over 70 years by the United States. There is no other country that can take our place at this stage, nor is there a good argument for thinking that the United States should abandon its role as the essential nation in global governance. Nonetheless, we appear to be flirting dangerously with that temptation. I hope we do not succumb to it. Thank you.

CHAIR YELLEN. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. In recent months, the data have painted a consistent picture of a resilient and gently improving U.S. economy. Most recent data suggest that progress toward our goals will continue in the months ahead. Indeed, some developments suggest that increases in demand could prove to be materially stronger than expected. As a result, the risks to the outlook are as close to balanced as they have been for some time, although policy uncertainty is very high.

Following several quarters in which the unemployment rate remained stable while labor force participation increased, the past quarter showed a further reduction in the unemployment rate to 4.7 percent. Payroll growth has remained sufficiently strong to continue eroding slack, including among individuals who had not previously benefited fully from the recovery.

In another sign that take-up in slack continues, some measures of nominal wage growth have strengthened: Average hourly earnings increased 2.9 percent last year, and business-sector compensation per hour looks to have increased at a similar pace, on average, over the past two years. Nonetheless, some slack may remain. Relative to pre-crisis levels, the prime-age employment-to-population ratio remains low, and the share of employees working part time for economic reasons is still elevated. Today's report shows the employment cost index increasing only 2¼ percent last year. But, overall, I am pleased to see that full employment is close and could prove sustainable with the right policy mix.

Following a long period of stubbornly below-target inflation, I have been encouraged to see recent signs of gradual progress toward our target, as the effects of earlier dollar appreciation and oil price declines appear to be waning. Over the 12-month period ending in November, core PCE prices increased 1.6 percent. This rate is still notably below 2 percent, but it's up ¼ percentage point from a year earlier.

There have also been some reassuring signs on inflation expectations, which are particularly important in an environment with a flat Phillips curve and a low neutral rate. The TIPS-based measure of five-year, five-year-forward inflation compensation is about 50 basis points above the very depressed levels prevailing through much of the past year, although it remains below historical norms. The median three-year-ahead inflation expectation in the New York Federal Reserve survey has also moved higher, on net, in recent months, although the median 5-to-10-year-ahead expectation measure from the Michigan survey remains puzzlingly low. Further progress on inflation will be needed to reach our symmetric 2 percent target. But recent months have seen welcome progress.

In addition, the positive momentum in recent indicators of aggregate spending point to continued progress on this front. Consumer spending rose nearly 3 percent last year, and ongoing job growth, further increases in wealth, and notable recent increases in consumer sentiment all suggest continued strength in consumption.

Business investment, which had been stagnant since the middle of 2014, increased at an annual rate of 2 percent over the second half, and business sentiment indicators have risen notably. On the other hand, the dollar is up about 4 percent since October and over 20 percent since mid-2014. Furthermore, longer-term corporate interest rates are up close to 50 basis points since October.

The strong dollar along with weak foreign growth were likely responsible for much of the weakness in business investment over the past two years, and renewed dollar strength along with higher interest rates may weigh on investment as well. Higher interest rates may also damp growth in the housing sector, whose recent indicators show a welcome pickup in activity at the end of last year. Although my baseline outlook is for further improvement in the labor market and inflation, a number of crosscurrents could affect activity. On the one hand, possible fiscal expansion, together with stronger sentiment as well as the stock market, should provide some further impetus to growth. On the other hand, sectors that are sensitive to the dollar and long-term rates are likely to be a factor holding back economic momentum. The net effect is unclear.

While my baseline outlook hasn’t changed appreciably, my sense of the balance of risks has. Progress over the past year has put the economy much closer to full employment, and, most recently, the likelihood of upside risks has increased. Spending effects of the recent surge in sentiment and the likely turn toward more expansionary fiscal policy could be significantly stronger than currently anticipated and represent the most credible upside risks to aggregate demand that we have seen for some time.

Market participants clearly anticipate a significant policy shift in this direction. The effects will depend on the timing; the magnitude; the composition of the policies; the extent to which they boost aggregate supply relative to aggregate demand, in a situation in which we are close to full employment; and the response of the dollar and longer-term interest rates, in view of anemic demand abroad and projections of our debt-to-GDP ratio. In addition, events over the past few days counsel vigilance to possible policy changes well outside the fiscal realm that could pose downside tail risks. The risks from abroad are still tilted to the downside, but they have lessened, especially relative to domestic upside risks.

In China, GDP increased at an annual rate of 6¾ percent. With a key political transition in the second half of this year, the regime's economic management tools will no doubt be employed, in order to ensure a smooth trajectory. However, the medium-to-long-term risks stemming from a highly leveraged corporate sector, a slowing rate of sustainable growth, and large pent-up demand for capital outflows have not gone away. There are also risks in some other emerging markets that could be exacerbated by further increases in interest rates and the dollar, and Mexico faces particular challenges that bear watching. Similarly, with recent European economic indicators positive of late, uncertainty about the prospects of troubled banks reduced, and central bank asset purchases slated to continue through the end of the year, the recovery in Europe seems likely to progress further in coming quarters, but longer-term risks remain.

Overall, the addition of upside risks to domestic demand has led to a more balanced outlook. As a result, risk-management considerations may not weigh quite as heavily on the appropriate path of future monetary policy as they did previously—a subject to which we'll return tomorrow. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Harker.

MR. HARKER. Thank you, Madam Chair. Over the intermeeting period, overall economic activity in the Third District continued to improve, with activity in the Philadelphia metro area picking up notably. Employment growth also improved somewhat in December, and there is evidence of increasing price pressures as well.

The overall outlook was a bit more positive than it has been in a while. Our January manufacturing survey displayed its strongest readings since November 2014, with strength in shipments, new orders, employment, and inventories. There is ample evidence that manufacturers are beginning to restock, and optimism is rampant.

One well-diversified contact in the region indicated that his order book to May is up an astonishing 50 percent from a year ago, and he is seeing strength in Asia and Europe despite the strong dollar. He is not seeing red in any of his business lines. His organic pet foods business is booming, and the margins are incredible. It is a good time to be a dog in America. [Laughter]

Activity in our service sector is picking up as well after several months of rather tepid growth. Revenues and new orders were robust in January, and strength was widespread. Additionally, auto sales have been robust, and future indexes remain unusually high for this late in an expansion.

Employment reports in the region are a bit mixed, with employment growth fairly flat, which doesn’t quite square with the falling unemployment rate, low initial claims, and the information we are receiving from our surveys. Nonresidential construction activity in the region is also robust, and even with the substantial addition of office space—5 percent more square footage is being added over the next few years—it is being occupied at an even faster pace and leading to an acceleration in net absorption and rents. On the residential side, our region continues to look much different than the nation, with the multifamily sector performing relatively better than the nation and the single-family performing relatively worse. In Philadelphia, homeownership rates are still falling as millennials continue to move in and become an increasing share of the population. Rents are rising, and vacancy rates continue to fall sharply. We are also hearing anecdotal evidence of supply constraints in the housing sector.

One notable change in our landscape is that manufacturers are reporting a steep increase in prices received. That series has jumped to its highest level in the recovery, and it currently stands at 20 points above average, which loosely translates to an equivalent 2½ percent monthly rise in the PPI at an annualized rate.

Regarding the nation as a whole, my economic outlook is a touch stronger than the staff's and falls more in line with the private forecast displayed in the Tealbook. I think we could see growth over the next two years of 2 percent or perhaps a bit higher, and I anticipate inflation returning to target perhaps by the end of this year. Nominal wage growth has accelerated, and I think aggregation is masking a bit of the underlying strength in wages. I think price pressures are a bit more robust than is reflected in the staff's forecast, and we may need to be sensitive to this in our policy deliberations tomorrow and beyond. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Mester.

MS. MESTER. Thank you, Madam Chair. As has been true for some time, the Fourth District economy continues to expand at a moderate pace. District contacts characterize economic conditions as modestly improved since our December meeting. The Bank's diffusion index of business contacts reporting better versus worse conditions moved up from 0 at the time of our previous meeting to 10—back to levels seen in the first half of last year. Some contacts expressed concern about the uncertainty surrounding potential changes in fiscal and other government policies. A District producer of autos that had relatively high domestic content said that even his firm is having difficulty evaluating what the effects of a border adjustment tax will be. I guess in five years' time he will get the benefit of reading Steve Kamin's analysis, but in the meantime, he is going to remain a little bit uncertain about it.

Despite the uncertainty in general, contacts reported an increase in sentiment. As was true in December, bankers continue to report higher sentiment among their business customers, but they say this has yet to translate into action in terms of increased investment or hiring. An engineering firm that may benefit, should government infrastructure spending rise, has not yet seen an increase in orders or investment plans.

This is similar to the results seen at the national level in consumer and business sentiment surveys. For example, the University of Michigan consumer sentiment index rose notably in November and December, but there hasn't been much change in respondents' expectations about their personal finances. The Duke CFO Global Business Survey and the National Federation of Independent Business survey indicated higher expectations for earnings and for the economy overall but little change in the firms' own capital spending or hiring plans.

District labor market conditions continue to strengthen. My staff estimates that year-over-year growth in payrolls edged down to 0.6 percent in December. This is an insignificant change from November's growth rate. The pace continues to be above the Federal Reserve Bank of Cleveland staff's estimate of the District's trend employment growth rate of about ¼ percent.

The District's unemployment rate was essentially unchanged in December, remaining at the 5 percent level that prevailed all of last year. The diffusion index of hiring plans was little changed and continued to show more contacts planning to increase hiring than decrease it. District firms report that pressures on nonlabor input costs are rising, in part due to firming commodity prices. Contacts have been able to raise their own prices without pushback from customers.

Regarding the national economy, economic data over the intermeeting period have come in largely as expected, and my modal outlook for the U.S. economy over the medium run is little changed since our previous meeting. The incoming data have been supportive of my medium-run projection that real GDP growth will be at or slightly above its trend rate, which I estimate at 2 percent. This pace will be sufficient to keep the unemployment rate below its longer-run rate, which I estimate to be 5 percent. I anticipate that inflation will rise to our longer-run objective of 2 percent over the next year or so, reflecting stable inflation expectations, continued strengthening of labor market conditions, and ongoing economic growth. In light of my outlook, I view an upward path of the funds rate as appropriate. In my view, the economy has met its maximum employment goal and is closing in on its inflation goal.

With respect to our employment goal, I'd note that broader measures of underutilization, like the U-6 measure of unemployment, which includes the number of part-time workers who would rather work full time and the number of people who have been discouraged from looking for a job, have continued to decline. The elevated level of part-time workers who would prefer full-time work has been a concern. It is interesting to note that in half of the recoveries from the eight recessions since the late 1950s, workers working part time for economic reasons as a percent of the labor force never recovered to the level it was before the recession—it remained higher. For example, before the 2001 recession, this ratio was 2.3 percent. It declined to only 2.6 percent during the subsequent expansion. Before the Great Recession, this ratio was 3 percent. It peaked at 6 percent in September 2010 but has now fallen to 3½ percent in December 2016. Recent work by the Federal Reserve Bank of Kansas City reviewed some of the reasons that structural changes in the labor market, including technological change and globalization, could imply a higher trend fraction of part-time workers for economic reasons now than in the past. If so, it is possible that this measure has already reached its trend level.

With respect to our inflation goal, PCE inflation has continued to rise toward our 2 percent goal, and core PCE inflation has been stable around 1.7 percent. The headline and core CPI inflation and Cleveland Federal Reserve median CPI inflation measures are all over 2 percent. Inflation expectations remain reasonably stable, which will support continued movement of actual inflation to our goal despite some anticipated downward pressure due to the appreciation of the dollar. The Cleveland Federal Reserve 10-year and 5-year, 5-year-forward measures of inflation expectations have been stable between 1.8 and 2 percent over the past three months. The 5-year, 5-year-forward breakeven rates obtained from TIPS have moved up over the past couple of months and now stand at around 2 percent. The survey measures are at or above 2 percent.

There is considerable uncertainty regarding the policy changes that the new Administration and the Congress will pass. The details matter in terms of estimating the timing and magnitude of the effects in formulating the outlook over the medium run. I continue to view the Tealbook's baseline assumptions about fiscal stimulus and the magnitude of its effects—what they estimate will add about ¼ percentage point to real GDP growth over the next three years—as plausible. But the prospect of a larger fiscal package puts some upside risk on both growth and inflation. A smaller package poses downside risks, especially because financial market participants appear to be anticipating fairly large effects. If they're disappointed, there could be some turbulence in the markets.

The longer-run effects of some of the policy changes being contemplated, in particular with respect to trade and immigration, could be quite negative. There are other risks, too, including geopolitical risks, some arising from a potentially escalating array of ill-conceived U.S. government policies. Thus, there are large error bands around my forecast. Additionally, in my view, we are operating in an environment of Knightian uncertainty, especially with respect to longer-run outcomes. It is hard to assess the probabilities to put on different potential scenarios or even what scenarios to contemplate. While I expect more information on government policies and regulatory changes to be forthcoming, I also believe we will be living with heightened uncertainty for a very long time. Thus, I remain very open to the possibility that the economy could evolve very differently from what I currently anticipate. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Bullard.

MR. BULLARD. Thank you, Madam Chair. Eighth District contacts report a large upswing in business sentiment. They feel that an environment of less onerous regulation combined with corporate tax changes will improve business profitability during the next several years. They tend to be less concerned about changes in trade and immigration policies. Some CEOs expect to make major investment decisions as soon as more clarity is provided on the nature of the new fiscal policy program.

Recent data suggest that the Eighth District economy continues to expand at a moderate pace. Holiday sales, which are now in and complete, generally met expectations. District labor market conditions remain tight. The most recent reading puts the District unemployment rate at 4.4 percent. Nevertheless, inflation pressures remain moderate in key District MSAs. Relatively low commodity prices continue to put many agricultural portions of the District under financial pressure. Real estate activity reports have been mixed, but contacts remain optimistic for 2017.

Nationally, U.S. real GDP growth is now estimated to have been just under 2 percent for all of 2016, consistent with the St. Louis Fed's regime-based approach to the economic forecast. We tend to agree with the staff forecast that growth is likely to remain relatively low, around 2 percent, through the end of the forecast horizon. We're unwilling, however, to interpret this as an above-trend growth rate but instead think of the 2 percent growth rate as being statistically indistinguishable from the trend growth rate. Accordingly, we continue to forecast a 4.7 percent unemployment rate through the end of the forecast horizon, and we expect unemployment will fluctuate between 4½ and 5 percent during this period. In our baseline forecast, we think payroll employment growth is likely to slow more than is assumed by the Tealbook.

We have treated possible fiscal policy changes at the federal level as an upside risk to the growth and employment scenario just outlined. We have thought about it, but we have not included it as part of the baseline forecast at this juncture. It is too early to assign meaningful probabilities to a growth-enhancing package of fiscal policy changes as of this meeting. To the extent that there may be a measurable positive effect from fiscal policy change, we do not think it would come through deficit spending.

Empirical evidence concerning the effects of deficit spending on growth are weak in our reading, especially on a medium-term sustainable basis. Nevertheless, we do think that some proposals currently being contemplated at the federal level may improve business capital investment and U.S. productivity growth. We think those effects, if they materialize, would be most evident in 2018 and 2019. This does have the potential to affect our monetary policy outlook.

The St. Louis Fed's inflation forecast remains at 2 percent over the forecast horizon. In this dimension, we're in broad agreement with the Tealbook outlook. The Federal Reserve Bank of Dallas trimmed mean inflation rate currently stands at 1.85 percent on a year-over-year basis. This measure has not moved very much in recent quarters, and this seems to indicate a rather limited scope for continued movement, although, of course, this bears watching, as always.

Headline inflation measures have moved up, but we see limits on additional movements in these measures over the forecast horizon. On the basis of recent empirical evidence, we see Phillips curve responses of inflation to economic activity as being very limited. We see the low inflation environment globally as being an important background factor. We would be more worried if inflation expectations, according to market-based indicators, were higher than they are. However, both the five-year and the five-year, five-year-forward TIPS-based measures of inflations expectations are just over 2 percent in recent days. As these are CPI-based measures, one might want to subtract up to 30 basis points to come to a reasonable estimate of PCE inflation expectations over the medium and long term. That would leave us at only 170 basis points or so on both measures, still fairly low relative to Committee goals.

All told, these considerations suggest that current U.S. macroeconomic performance is consistent with a low-growth regime, with constant inflation and a constant level of unemployment but with some upside potential, due to possible fiscal policy changes ahead. The current level of the policy rate is optimal, given this regime, perhaps with one additional move during 2017. Since the upside for the policy rate is limited given this regime-based approach, I do not want to tie the end of reinvestment to the policy rate level. Accordingly, now would be a good time, in my view, to end the balance sheet reinvestment and to take a step toward normalization of the yield curve. I'll discuss this more tomorrow. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Powell.

MR. POWELL. Thank you, Madam Chair. Economic data since the December meeting have come in close to expectations, leaving the outlook broadly unchanged. To me, that outlook is for growth of around 2 percent, job creation gradually slowing—but still above trend labor force growth—and inflation moving up ever closer to 2 percent.

Consumer and business surveys remain upbeat. Housing prices are rising steadily and equity prices have also continued to move up. After five years averaging 0.5 percent, productivity for 2016 is now estimated at nearly 1 percent, an increase that is small and preliminary but nonetheless welcome. Taken together, these factors should provide ample support for the economy, the labor market, and inflation moving along the path I described.

The risks to that baseline seem to me to be balanced. In particular, I—unlike some others—do not see the risks as especially skewed to the upside for the next couple of years. In fact, going where others have perhaps wisely feared to tread, I'll say that the equity market for now appears to me to have fully priced in the upside case and that a significant correction would not be a surprise.

It's also going to be interesting to see how well the significant increases in business and household confidence hold up in the uncertain—indeed, chaotic—policy environment. The legislative calendar is extraordinarily full. There's no greater clarity on the prospects of a fiscal policy package, and the Tealbook's assumption of a tax cut of 1 percent of GDP remains a reasonable "placeholder." As the record shows, tax reform is very difficult. A big tax cut is possible but unlikely, on the basis of my own experience with the Republican caucuses in the House and the Senate. Anything is possible. In any case, fiscal policy changes may be enacted much later this year—indeed, early next year. It's possible. Any direct macroeconomic effects would not be felt until 2018 and thereafter. For now, I continue to think of a supportive fiscal policy as an insurance policy against weakness and have not factored in any additional growth.

The baseline forecast is for unemployment to decline well below the natural rate for an extended period. I see that as a desirable outcome and don't feel that we're "behind the curve" or see any data suggesting that that is the case. The Committee has been quite patient, and that has served us well, but the risks are now two sided, and the pace of tightening will need to react more sensitively to incoming data. Such an approach need not go too far in the opposite direction and emphasize only the risk of falling "behind the curve."

I'll mention one factor that will be important to watch: labor force participation, which has shown welcome and unexpected strength, suggesting along the way a bit more room for growth. We've now had three years with measured participation bouncing around between 62½ and 63 percent and remaining, overall, about flat despite demographic and other secular factors pushing down trend participation. Since the labor market has been steadily improving through this period, my assumption is that some of the bouncing around is really a function of measurement, and the reality is that participation has been about flat.

In any case, the question is, what signal should we take from this? Over the three-year period, the flat participation rate means that we've picked up about a full percentage point against the declining trend, and, as many have pointed out, as a matter of arithmetic, much of that has been due to more people remaining in the labor force rather than the reentry of discouraged workers. The weight of opinion today seems to be that labor force participation is likely to soon resume its long-time downward trend. And I want to push back on that just a little—not at all because I'm sure that it's wrong, but rather because I think there remains a good chance that participation will remain flat for a while longer or even move back up again.

The canonical paper by Stephanie Aaronson and various others here at the Board and at the Cleveland Federal Reserve discusses the possibility that the business cycle affects participation after a significant lag, and to the extent that that is the case, the current participation rate could still be held down by the effects of past slack. This is plausible and would suggest a bit more room for growth. In addition, participation has moved up 50 basis points or so above our estimate of trend late in the past couple of cycles, so it is not at all clear that we're about to hit a wall on participation. The bottom line is, since high frequency movements in participation and unemployment may well be noisy, I wouldn't react too much to short-term changes in either direction until we see a clear and sustained change.

A final point. Some of the downward trend in labor force participation is inevitable, but not all of it. We can't stop aging, but, at least in principle, the decline in participation by prime-age males need not be taken as a given, like death and taxes. Depending on the underlyng causes, various policies can address the problem. A June 2016 Council of Economic Advisers report identified poor labor prospects as a key factor. More recently, Alan Krueger and others have suggested that poor health plays a role. While a tight labor market could help those at the margin remain connected to the labor force, most of the policies that would target declining participation by prime-age males are in the hands of the Congress and the Administration, not in our hands. But, again, I would avoid overreacting as labor force and possibly headline unemployment move around until we see a clear change in signal. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Madam Chair. Starting with energy, it has been our expectation, as you know, for some time that global oil production and consumption would get into rough balance by the first half of 2017. In December I noted that newly agreed restrictions on supply by OPEC could accelerate this balancing process. While hard information on supply cuts won't be available until mid-February, discussion with our contacts suggests that signs point to a potential cut of one million barrels per day in OPEC production in the first half of 2017 compared with the fourth quarter of 2016, largely due to implementation of agreed cuts in the Gulf states and Venezuela. Those cuts, if implemented, will be large enough, certainly, to reinforce and accelerate the balancing process.

For the full year, we're still expecting global supply to grow—but by less than demand—and we continue to expect demand will grow approximately 1.3 million barrels a day. Ironically, last year we faced OPEC production increasing while U.S. production was decreasing. This year—and we'll see if this holds—we are seeing the opposite. While OPEC production, as I just described, is going to be decreasing, we expect U.S. production will be rising. We'll see how OPEC reacts to that. Using rough numbers, we believe U.S. daily supply bottomed at approximately 8.6 million barrels a day a few months ago. We believe it is now 8.9 million barrels a day, and we think it is likely to end this year closer to 9.3 million barrels a day, particularly if prices range between $55 and $60 per barrel.

The latest Dallas Federal Reserve energy survey reports a notable increase in expectations for capital spending in 2017 by exploration and production firms. The bulk of this spending, though, is going to be focused on shale. Much discussion in our District, particularly recently, has focused on the substantial supply upside potential for shale in the Permian Basin in the years ahead. The Permian Basin, as most of you know, has oil-bearing deposits that are layered, allowing multiple horizontal shafts to run off a single vertical shaft. The Permian Basin produces today approximately 2.1 million barrels per day, but this output has the potential to rise dramatically. With technological advances, many contacts in our District believe that the

Permian Basin could reach a potential of approximately 10 million barrels per day within the next 10 to 15 years.

Many of our contacts believe that major oil companies in the near term are going to avoid long-lived capital projects and will instead focus their capital spending on more flexible and shorter life-cycle shale projects—and we're seeing this already recently. It will likely involve, though, much more technology and fewer workers per barrel of production. In the meantime, not surprisingly, there are reports of widespread shortages of skilled workers in this industry in our District.

Regarding the District more broadly, Texas employment ended last year up 1.6 percent, very much a tale of two halves of the year, with first half job growth being less than 1 percent and second half job growth being well above 2 percent. We believe strong job growth will continue into the first half of 2017, and, in particular, consistent with what we've heard around the table, the headline revenue index from both our service-sector and manufacturing surveys are at their highest levels in two years. The outlook indexes for our service and manufacturing surveys also show striking rebounds. They are reaching their highest levels since the fall of 2014. We are forecasting a baseline of 2 percent job growth for 2017. For Texas, that would be the strongest job growth in three years. Our services and manufacturing surveys are also showing building price pressures for goods and services.

For the nation, our models at the Federal Reserve Bank of Dallas, which do reflect the recent surge in consumer and business optimism about the economy, are signaling modestly stronger real GDP growth over the course of 2017—as forecast in the Tealbook—and then a modestly larger decline in the unemployment rate than in the Tealbook. As Jim just mentioned, the Federal Reserve Bank of Dallas trimmed mean reading is inching up, mostly recently to 1.85

percent. It ran last year about 1.6 percent. It ran 1.7 to 1.8 percent for most of 2016. So this 1.85 percent, while it has moved up only slightly, continues to give us confidence that we will reach the 2 percent inflation objective in the medium term.

We continue to believe, and I continue to believe, there is a relatively low level of labor market slack, and that there is a reasonable and increasing probability of overshooting our full-employment objective. I continue to believe that the decline in the participation rate from 66 to 62.7 percent is substantially due to population aging, and that where there is slack, it is highly correlated with lower levels of educational attainment. And that's why there is a substantial focus, certainly in our District but also around the country, on beefing up vocational training partnerships and improving educational attainment levels. In that case, I think it's well "behind the curve" with respect to what is needed. We believe, certainly in our District, the skills gap is real and growing, and we think that may well be true in the rest of the country.

Final comments: First, on the corporate front, in conversations with business leaders, certainly as many of you have also mentioned, there is increased optimism about the business and regulatory climate. They are hopeful about tax policy, infrastructure spending, and a more pro-business regulatory environment. Notably, however, they are wrestling with a few items. Many of the companies in our District have integrated logistics and supply-chain arrangements, not surprisingly, with Mexico—a move that they strongly believe has improved their competitiveness and allowed them to provide more jobs in the United States. Many are actively discussing alternative arrangements, which would involve them increasing capital spending in the United States but on much more technologically oriented production and sourcing, which would involve substantially fewer workers per unit of production. Broadly across industries in our District, due to the strong dollar as well as competitive pricing pressures, most CEOs I speak with are actively looking for ways to invest in technology that will replace people, reduce costs, and improve competitiveness.

Second, many business contacts, as has been mentioned, are laboring to figure out the effect of the border tax adjustment, and they are struggling to think through the implications of that for their businesses. While many companies in our District that are in the consumer and services sector are carefully watching to see if the improvement in consumer sentiment translates into greater consumer spending, so far they are not really seeing follow-through. They expect to see it, but they haven't seen it in great numbers so far.

Third, my final comment is regarding the health-care space. In my District, we have very substantial employment in the nonprofit sector as well as the for-profit sector in the health-care industry. And these companies, by and large, are actively working on plans for job reductions as they manage greater uncertainty and prepare for a shift that they think is likely to involve health-care spending decisions moving more fully to the states. They fear the net effect is likely to be a lower level of reimbursement dollars and downward pressure on their margins. Health care is obviously a very large employer in our District as well as a very large U.S. domestic industry. Everything I'm hearing suggests that it is likely to shed jobs in the near and medium term. Uncertainty about ACA replacement plans and overall policies weigh heavily on this industry.

These conversations remind me that while there is a lot of optimism, the breadth of actions about to take place—regarding the Affordable Care Act, immigration and trade, regulation, corporate tax policy, individual tax policy, infrastructure spending, environmental policy, and fiscal relationships between state and federal government on a host of issues—are such that while a few of these policies and the focus on them has generated a lot of positive sentiment, most companies I talked to are anxious to assess the net impact, and understand that there will be broad crosscurrents and unforeseen effects in light of the breadth, magnitude, and speed of these various actions. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Williams.

MR. WILLIAMS. Thank you, Madam Chair. The economy continues to expand at a moderate pace. Real GDP has increased nearly 2 percent in each of the past two years, which is slightly above my and the Tealbook's estimate of trend growth. Labor markets already reached and perhaps even stretched past maximum employment, and inflation looks to be on track to reach 2 percent by the end of next year.

The expansion has been propelled by healthy growth in consumer spending. And, consistent with the recent surge in consumer confidence, my contacts report good retail numbers during the holiday season. The main strength was in online retail, and this was reflected in double-digit increases in package deliveries over last year. Of course, some holiday gifts have been returned. Apparently, many people are like me and didn't really like getting a Fitbit for Christmas [laughter], and they've sent them back. So the shipping numbers overstate final sales growth, and reports from my brick-and-mortar contacts were, in fact, more mixed.

One interesting twist is that some of the demand growth is coming from new economy sources, and we heard about auto purchases made by providers of "gig" economy services like ride sharing and on-demand restaurant delivery.

My contacts also described the usual surge in holiday hiring. However, they noted bigger challenges than in past years, with a major delivery service contact describing the holiday hiring process as "unnerving." This is consistent with the broad range of data series that depict a tight labor market.

These anecdotal reports have set the stage for solid growth in the current quarter. Unfortunately, I'm going to go back to that pesky topic of residual seasonality, which has depressed measured real GDP growth in Q1 and boosted it later in the year. This is certainly the pattern we saw back in 2016. The BEA has been trying to address this problem, but so far they've only got a partial fix. Although various nowcasts currently show solid Q1 growth, we could well see a deterioration in these estimates as we get closer to the GDP release for Q1.

Indeed, in the past few years, first-quarter nowcasts have tended to trail off in late February, March, and April. So, in thinking about monetary policy and the outlook in general, I want us to look past a possible first-quarter dip in real GDP growth and assess the economic prospects for the year as a whole. After the BEA implements a more complete fix for residual seasonality, we'll be able to get, I think, a better, more clear signal from Q1 growth estimates.

An important area of uncertainty that everyone's already talked about is the prospect of tax reform and fiscal policy initiatives more generally. The discussion of potential proposals is getting under way, but in the words of the great songwriter Nick Lowe, "Where it's going, no one knows."

Furthermore, even if we had certainty about the exact timing, composition, and size of the policy package, we'd still face substantial uncertainty about its effects on the aggregate economy. In the economics literature, estimated responses of business investment spending to cuts in the corporate tax rate range from zero to very large, suggesting that just about anything is possible. And other business tax provisions, such as the depreciation allowances and interest deductibility, also have uncertain and potentially disruptive effects. The border adjustment tax, which we've already talked about, is, quite honestly, uncharted territory for a floating exchange rate economy such as ours. We know more about the effects of income taxes, but even there the composition across income groups and any offsetting changes to transfer payments loom large.

All that said, I'm still expecting a slight net boost to growth over the next few years, similar to what's assumed in the Tealbook, on the basis of likely reductions in net taxes for businesses and individuals.

With unemployment already below most estimates of the natural rate and expected to fall further—for example, the Tealbook has it going down to almost 4 percent by the end of 2019—we face the challenge of engineering a soft landing, and this means avoiding a recession or an inflation surge above our target in an economy that's exceeded potential. The Board memos from December provided a helpful narrative depiction of how well central banks have handled such landings. The record is not encouraging, but we did have the good example of the 1990s, which may prove to be the exception, when we had a sustained period of unemployment below the natural rate, contained inflation, and actually had a relatively mild recession at the end. This episode does provide a useful benchmark for assessing our current environment.

My staff reassessed what happened in the late '90s, thinking about, how we pulled off the soft landing then. They looked at the period from '96 to 2001 using a New Keynesian DSGE model, and then they examined specifically, what were the shocks that happened to productivity, consumption behavior, and monetary policy, that shaped the outcomes of the late '90s?

As you may guess, the results show that the favorable productivity shocks were the key factor. They allowed the economy to run very hot for quite some time without stoking inflation. Monetary policy did, during the time frame, successfully sustain the expansion without inducing excess inflation. But absent the good luck of a sudden productivity surge, things would have turned out very differently, according to the model simulations. While we can always hope, we cannot count on a repeat of such good fortune, so we must remain alert and responsive to the risks of letting the economy run too hot for too long.

My own forecast is that unemployment will bottom out around 4½ percent later this year. That's comfortably warm. By contrast, reaching the low fours may singe us. We need to keep that in mind as we formulate policy in the period ahead. I'm going to withhold my comments on that until tomorrow. Thank you.

CHAIR YELLEN. Thank you. President Evans.

MR. EVANS. Thank you, Madam Chair. The economic situation has not changed much since our December meeting. The incoming data have been reasonably in line with our prior assessments, and, not surprisingly, none of my directors or other contacts report any major changes in economic conditions. Business optimism continues to be strong following the election, but it's still too early to expect these more positive attitudes to find their way into tangible increases in economic activity.

Comments made by the CEO of a heavy equipment manufacturer were pretty typical. He said that construction equipment orders were running at twice last year's pace, but, for now, the company has decided to run with a longer order queue rather than bring back sidelined workers to increase production rates. The firm wants to see whether the stronger demand will continue before committing to expansion.

This wait-and-see attitude also applies to potential fiscal, trade, and regulatory policy changes from the new Administration and Congress. Everyone we speak with is waiting for more clarity. And despite the optimism from much of the business community, representatives from the health-care industry, higher education, community, and labor groups express many concerns about intended and unintended consequences of the Affordable Care Act repeal, changes in immigration policies, and the possibility of reduced funding for nonprofit institutions. We haven't factored any of these potential speed bumps into our outlook, but considering the fast pace of executive orders and items on the legislative agenda, there may be downside risks that could unfold quickly. Uncertainty seems high.

Meanwhile, multinational corporations continue to report improving international economic conditions. The biggest percentage gains were in Latin America, with Brazil and Argentina coming off very low levels. Europe also seems to be doing better. Manpower's CEO noted that the appreciation of the dollar benefited European manufacturers as much as it hurt those in the United States.

Folding everything into the national outlook, our projections haven't changed meaningfully since December. Similar to the Tealbook, we have GDP growth running modestly above potential this year and next. Our best estimate is that there is still a touch of resource slack left in the economy. However, in view of how flat the Phillips curve is within the relevant range, neither our estimate of slack nor any others I see are large enough, one way or the other, to make much of a difference in the inflation outlook. So, at the moment. I don't see projections of modest above-potential real GDP growth as much of an upside risk to inflation.

Indeed, if anything, I'm still concerned about inflation failing to rise to target within a reasonable period of time. Inflation expectations remain low. We do not see any meaningful cost pressures in labor and other input markets, and the strengthening in the dollar over the past few months could weigh further on import prices. Adding it all up, my inflation forecast is the same as I had in December. Core inflation does not reach 2 percent sustainably until the end of 2019. And an appropriately accommodative policy stance continues to be an integral part of my projection. In particular, I assume only two increases in the funds rate in 2017 and no change in our reinvestment policies this year. To support more aggressive funds rate normalization, I would have to become confident that we were on our way to achieving our inflation target earlier than 2019, as in my current projection. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. First Vice President Gooding.

MS. GOODING. Soundings from Sixth District directors and business contacts continue to be optimistic. However, the optimism has waned somewhat since last cycle. Their focus has shifted to the uncertainty surrounding potential changes to fiscal, regulatory, and trade policies. We've frequently heard that firms are holding off on making any significant changes to their business plans and are shelving capital investments projects until the details of these potential initiatives become clear.

In general, however, our contacts have also noted little change in near-term business activity. Most contacts confirmed ongoing tightening in labor markets. In response to some difficulty finding workers, and in an effort to expand their set of work-ready candidates, many firms are partnering with area workforce development organizations or academic institutions to create custom training programs.

Although many firms saw little in the way of pricing power, an increasing number of firms were confident that they would be able to pass through recent commodity price increases to customers. On nominal wage growth, District firms continue to report increases in the 2 to 3 percent range.

Consistent with the incoming economic data, our forecast is largely unchanged. We see GDP growth continuing at roughly 2 percent over the medium term and inflation returning to our objective. Like our directors and business contacts, we see the risk to our outlook mostly associated with changes to fiscal, trade, and regulatory policy. We have yet to mark in any fiscal stimulus over the forecast horizon, and we are waiting for the details to become more apparent. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President George.

MS. GEORGE. Thank you, Madam Chair. The Tenth District economy expanded modestly since the previous meeting. Business sentiment has been much stronger since the November election, although our District contacts appear to be waiting for additional details on the future of the fiscal policy landscape before adjusting employment or capital spending plans. While the outlook for agriculture remains weak, District energy activity accelerated in the fourth quarter of 2016. Energy firms began hiring, and profits turned positive for the first time in more than two years. Access to credit also improved, and overall expectations improved significantly with the recovery in oil prices and a degree of confidence that the announced production cuts will be realized. In our energy survey, District firms expect oil prices to approach levels by the end of 2017 that would support significant expansion in drilling activities.

With regard to the national outlook, much like the Tealbook, my outlook for the national economy is little changed and continues to assume growth near 2 percent over the next few years, although my forecast does not incorporate assumptions about potential fiscal policy changes, in view of the considerable uncertainty about the nature and timing of such changes. At this point, the prospects of tax cuts and more government spending pose upside risk to my growth and inflation forecast.

While consumer confidence has risen sharply, my forecast takes little signal from this development, much like the Tealbook. Namely, once we account for fundamentals like income growth and interest rates, analysis by my staff and that of other published research suggests that changes in consumer confidence have only modest predictive power for future consumption growth.

Still, I expect consumption to be supported by a healthy labor market, rising housing and financial wealth, a historically high savings rate, and accommodative monetary policy. With an economy near full employment, signs of wage pressure, stable to higher inflation expectations, elevated asset valuations, and buoyant consumer and business sentiment, the trend for inflation certainly appears to be to the upside. On the other hand, downward pressure on inflation measures could result from a stronger foreign exchange value of the dollar if monetary divergence persists or as a result of possible trade policy reforms. Thank you.

CHAIR YELLEN. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Madam Chair. Moderate growth continues in the Ninth District. There were strong employment gains in November and December in Minnesota, though North Dakota is not doing as well, as it is still struggling with the oil price retraction. In the Minneapolis Fed's annual manufacturing survey, one-third of our respondents expect increased employment this coming year, while only 10 percent plan to cut. The Twin Cities' business survey indicated that finding qualified employees continues to be their greatest challenge, which many of us have heard before. Although job growth is strong, wage growth still appears to be moderate. Respondents in our manufacturing survey report average 2.6 percent wage growth from 2015 to 2016, and residential real estate is generally strong.

In the national economy, the expansion continues, but growth is rather lackluster—Q4 real GDP growth came in fairly weak at around 1.9 percent. It's possible that drag coming from the strong dollar on net exports could continue to depress growth, looking forward. No dramatic labor market news since our previous meeting. The unemployment rate ticked up, and prime-age labor force participation also ticked up.

A key question that I think we're all wrestling with is how much labor slack remains. The staff view is that unemployment is already above potential, but, in contrast, the CBO recently came out with a report that estimates that labor force participation is still below potential and employment is therefore 1.6 million below potential employment. The CBO doesn't expect the employment shortfall to disappear until around 2018.

As some others have noted, according to the U-6, which includes part time for economic reasons and marginally attached workers, now at 9.2 percent, is still about 1 percentage point higher than prior to the recession. Overall, in my mind, the amount of labor slack remains uncertain. The rise in prime-age labor force participation could continue. I'm not yet convinced we have reached maximum employment.

In terms of inflation, how are we doing? There's little change in core inflation over the intermeeting period. Year-on-year core PCE inflation is still running around 1.6 percent or 1.7 percent, close to its average over the past several years. Thus, on inflation, we are still below target, and in my mind it is too soon to declare victory. What about the inflation outlook? It's a mixed bag. Survey and market expectations remain low by historical standards. Obviously, market-based expectations have ticked up since the election, but survey expectations continue to be low. The dollar continues to strengthen, putting downward pressure on import prices. On the other hand, there are some welcome signs of wage growth picking up, but they're not picking up to alarming levels yet.

There's speculation that fiscal policy will become more expansionary, which, in turn, could drive up inflation, but in light of the uncertainty over the fiscal policy outlook, it's too soon for me to build this into my own economic forecast. By the way, we asked our own directors in our January meeting to ask their contacts whether they are actually changing their investment plans because of the election, and virtually none of them said they were changing their plans. They're feeling optimistic, but it's not translating into action yet. Uncertainty remains high. There's risk to the upside—lower taxes, lower regulation—and to the downside in the form of protectionist trade policy.

Experience of the post-Brexit United Kingdom suggests that uncertainty by itself is not necessarily a huge drag on growth, but how the uncertainty is resolved will affect the outlook and the appropriate path of rates. In conclusion, I think we continue to make some progress toward our goals, but in my mind it's too soon to declare victory.

CHAIR YELLEN. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Madam Chair. I expect that over the next several quarters the economy will continue its pattern of the past several years of modestly above-trend growth in the context of an improving labor market. In light of continued job growth and the recent uptick in the pace of wage increases, I don't think there's any reason to believe that personal consumption expenditures will deteriorate, and they may even pick up a bit. Forward-looking indicators are decent, though still not that strong. Housing permits look okay. Business fixed investment is finally showing some signs of stirring, although from a fairly low level, and durable orders are, in the words of one of the newsletters, "improving, but still mediocre."

It's also possible that we are either getting or will get some further boost to growth from improved sentiment among households and businesses, and expectations of business tax cuts. One significant possible negative factor, of course, would come from further dollar strengthening. In terms of baseline expectations, like, I think, almost everybody, I expect more of the same.

There are pretty clearly some upside risks for medium-term growth associated with the new Administration's apparent fiscal policy plans. But quite apart from some of the longer-term uncertainties to which President Kaplan alluded, I am with Presidents Bullard, Kashkari, Williams, and others in thinking that these are, at present, upside risks rather than things that we should anticipate and, thus, begin to shape our policy on. Although there's I think a pretty good chance that something will be passed this year, we really don't know. And even if something is passed, we don't know how much net stimulus it'll contain.

Now, I have to say that if you go on the basis of history—that is to say, the 1981 and 2001 episodes—it's quite possible that deficit concerns will end up taking a back seat to a desire for tax reductions, but there's at least some chance that a different dynamic will prevail this time around. Even if it is something that's quite stimulative, the lion's share of the direct effect would likely be in 2018 and beyond, although obviously there could be some more immediate anticipatory effects just based on passage. And I think Governor Powell was alluding to the possibility that if the package were to surprise to the downside, or it doesn't get passed at all, there could be some retrenchment from the upsurge in business and household sentiment as reflected in increased asset values that we've seen since the election.

Looking only at the U.S. economy, I think there are, on balance, significant upside risks, but I continue to think it's too early to incorporate some assumption of these risks being realized into baseline expectations. I also think, most importantly, that there will be ample time for us to do this, should it be appropriate, as things become more clear.

Now, what about the downside risks? Here I think they lie outside the orbit of the U.S. economy as such. And, again, I'm echoing things that a number of you have already said. Some such risks, such as emerging market turbulence, identified as an alternative scenario in the Tealbook, are at least partially related to the potential effects of the domestic economic dynamic on the rest of the world. Others bear a more attenuated connection to the U.S. economy, such as a possible European banking crisis, which I think has diminished somewhat but not totally disappeared. Still others are traditional geopolitical risks such as international tensions or hostilities or serious domestic strife in economically significant areas of the world. These kinds of risks have probably increased somewhat in recent months, but it's very hard to say that with any assurance.

Another category of risk is a government policy action originating either in the United States or elsewhere that is directed at economic activity and that, either by itself or as a result of a kind of spiral of responses, ends up having a significant effect on U.S. and global economic performance for at least a time. Trade or foreign exchange control measures are an obvious example. Again, it's very hard to say whether the risks of such an eventuality have increased a lot or only moderately, but here I am reasonably confident that they have increased.

So what do I see as the implications of all of this for how we think about policy in the period ahead? Well, principally, I think, on net, it should reinforce our inclination toward a relatively patient, measured approach to increasing the federal funds rate. Over the past year or so, I have been influenced by two arguments that fall under the general rubric of the asymmetric toolkit that together have led me to want to err on the side of caution in raising rates.

The first has been that we should take extra care not to upset the modest momentum that the economy has, so as not to risk having it slow close to or below its stall speed. Monetary policy would face particular challenges responding to such a turn of events so soon after the Great Recession, when interest rates are still low and our balance sheet is already high. In light of what I said earlier about the economy and risks, this argument does seem to me less compelling than it was even six months ago.

The second argument has been that we should be cautious as part of a self-conscious strategy to increase the resilience of the economy to a significant shock by continuing to provide accommodation in light of our current limited capacity for increased accommodation. This argument seems to me still to have considerable force in light of the possibilities I detailed a few moments ago. Of course, in the end, we're all trying to balance the advantages of building resiliency through some overshooting against the risks that we might then have to slam on the brakes. As the staff paper discussed in a previous meeting showed, history doesn't provide particularly strong guidance in trying to do so, except insofar as it teaches that it's good to be lucky. I think most of us are probably using similar intellectual frameworks and just coming out somewhat differently.

I think that the last observation I'd make here is on the difficulties, particularly in a period with higher-than-normal uncertainty, of projecting too very much forward from where we are right now. There are two reasons I say that. One is that I was struck by President Mester's observation in her remarks that she had wide bands around her expectations, just because there is so much uncertainty. But another reason for that is, with the release of the 2011 transcripts, I've been asked by several people about things that they saw that I had said during various meetings in 2011. Not having remembered in some cases what those things were, I had to go back and read the transcripts, and so I ended up reading more of our meetings than I had originally intended to.

One of the big discussions for several meetings in 2011 was whether structural factors were going to place a real constraint on unemployment falling very much more. This was five years ago. This is the conversation we were having when unemployment was, what, about 8 percent, I think, at the time. And, as I looked at what everybody was saying, at the time much of what was said would have seemed perfectly reasonable and a decent extrapolation from what we were seeing, but in retrospect it all looks kind of misguided.

Again, I think, to me that just reinforces the wisdom of kind of taking it step by step, not expecting that things are going to happen on the basis of some set of past correlations, but instead waiting to see how they develop. For the reasons many of you have said, I think we really do have time to respond to some of the things that right now look somewhat uncertain. Thank you, Madam Chair.

MR. LACKER. Madam Chair, may I?

CHAIR YELLEN. President Lacker.

MR. LACKER. Yes. I actually had the occasion to reread some of the 2011 transcripts this week, too, because of a snarky newspaper article, basically, about some stuff that happened. But I remember the discussion really well about impediments, and the way I was thinking about it at the time—and I think this is consistent with the transcripts—is that it was an impediment to the pace at which the unemployment rate was likely to be able to fall and the extent to which monetary policy could influence it properly. So I don't think I ever thought that it would be impossible to ever get it below 8 percent. I'm not sure anyone around the table did. But your point is well taken about thinking carefully about where we are and extrapolating out from there, and being a little humble about extrapolating too far ahead. That part I agree with.

MR. EVANS. It was 9 percent.

MR. LACKER. It was 9 percent? Sorry.

CHAIR YELLEN. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. It reminds me of when you see those investment performance things, in which they have that little asterisk down at the bottom about future performance. I do think, Governor Tarullo, that you make a good point in suggesting that we can be lulled by the trajectory that we're on into thinking that that has some sort of permanence associated with it—when, in fact, it's just a series of random draws that creates a pattern that's maybe not as powerful a pattern as we actually see at the time.

I'm like everybody else in that I see the economic outlook as little changed since our previous meeting. Just to sum up: We are still growing at a slightly above-trend pace, still putting gradual pressure on labor resources, and that seems to be leading to a slightly firmer compensation and inflation trajectory, even setting aside the employment cost numbers we got this morning. Headline inflation is going back up toward 2 percent as the prior energy price declines drop out of the year-over-year numbers, but core inflation is still relatively steady, caught between some price pressures in core services and modest deflation in the area of core services. So where we are today is pretty much where we were at the previous meeting.

The two biggest issues that I'm focused on are, one, the uncertainties about the policy outlook for budget and taxes, health care, immigration, and trade—how are they going to be resolved? That's pretty significant for the outlook. And, two, what should we make about the sizable improvement in household and business sentiment? Does that foreshadow a pickup in economic activity or not?

On the policy side, there's not really much more to say, because we really don't know much more than we knew at the previous meeting. As I said at the previous meeting—John

Williams reiterated this today—we don't know the composition, the magnitude, or the timing of what's likely to happen. And, as President Williams added, even if we knew all of that stuff, we wouldn't know how it would affect the economy. Other than that, we've got it completely nailed down. [Laughter]

In terms of the large improvement in household and business sentiment post-election, I think this is really quite significant, and I think there's a lot of uncertainty about how to interpret this. Is it a harbinger of a pickup in the growth pace, or not? Now, when you look historically, the economic literature shows that consumer sentiment is statistically significant, generally, when you put it into a consumer spending equation, but quantitatively very small—with very small effects.

Our research staff looked at this recently using a VAR model, and they basically added the Conference Board's Consumer Confidence Index to other variables that are important predictive variables for consumer spending, such as disposable income and household net worth. They found that adding the consumer confidence variable enables you to slightly improve one's forecast of consumer spending one quarter ahead, but the increment was small, with very wide error bands, and the quantitative effect was very modest. For example, a one standard deviation increase in the Conference Board's Consumer Confidence Index, which is about what we saw, is predicted to push up the growth rate of consumer outlays about 0.1 percentage point annualized in the next quarter. That's rounding error relative to the quarterly volatility in consumer spending, and it's also very small relative to the precision of the estimate that comes out of this VAR estimation.

With respect to business sentiment, I think that's a little more difficult to say, because I think there are fewer well-established indicators. And it is interesting how much the monthly

National Federation of Independent Business's Index of Small Business Optimism moved post-election. It had a big increase in November, and then it rose another 7.4 points in December, so it's now at its highest level since 2004. And some of the components moved a lot: "Outlook for General Business Conditions" rose 38 percentage points; "Sales Expectations" rose 20 percentage points; and "Good Time to Expand" rose 12 percentage points. So these are big moves.

I don't know whether this is going to translate to greater investment and hiring. We will see. One thing I would say is that I think the small business sector is more insulated from all of the swirl on the trade side, and so this could actually translate to more employment and hiring as we go ahead. So far, we don't have a lot of data that suggest whether the underlying trajectory has changed. But it is interesting to look at nondefense capital goods orders over the past two months: We got an increase of 0.8 percent in November and an increase of 1.5 percent in December. These are very volatile numbers, but that's a pretty firm trajectory. So maybe there's a little bit of evidence that we're actually starting to see a pickup.

At our board of directors meeting last Thursday, several directors acknowledged the improvement in business sentiment, and they thought that it was starting to translate into a pickup in activity that their companies were actually seeing. But I think it's really too early to say it at this point.

The second issue I want to touch on briefly. I'd mentioned the whole issue of the retail sector and the retail store closings, and the question I'm interested in is, is this going to affect retail employment in a serious way? If you look at total retail employment, if you exclude motor vehicles and gas stations, total retail employment is 13 million people. So, in principle, if you did have a sharp reduction in retail stores and space, that would have some consequence for employment. After reflecting on this and talking to one of the members of our board who's the CEO of a major department store, I'm less worried about it.

One of the reasons is, it turns out that the process of store closings unfolds quite slowly, especially for the major department store chains. He said that it takes typically a year or so, on average, from the decision to say you're going to close a store to actually closing the store. During that time, the store is open, it's fully staffed, it's not like it tapers down to the closing date. It's operating, and then it's not operating. So all of these store closing announcements are going to take a while to actually play out. And as we talked about before, to the extent that retail sales are diverted to the Internet channel, there's going to be some offset in employment and warehousing in terms of delivery services.

Finally, a few words on how the outlook affects my thinking about monetary policy. With the economy still apparently growing at an above-trend pace, overall inflation rising, and financial conditions little changed since the election, we've seen a lot of movement in financial asset prices. It seems to me that the movements have been largely offsetting one another.

I do think that there is a reasonable case for at least considering another round of tightening in March. I can imagine a move in March and then perhaps in June or September. If we get two more hikes in the federal funds rate, we're up to a target range of 1 to 1¼ percent. At that time, assuming that the economic outlook was still solid, I think that I would want to at least consider seriously beginning to taper the reinvestment of maturing Treasury securities and agency MBS repayments. I would prefer to do that process relatively soon, if we could, the outlook permitting. That's why I'm so much looking forward to our discussion on this issue at the March FOMC meeting. I think it's really time to get our ducks in a row on this issue.

But I'd also just like to say, I think we shouldn't talk about this until we actually have the discussion at the March meeting. I don't think we should be speculating in public about what we're going to hear from the staff and what we're going to conclude from the discussion in March. I think we should just put it on hold and then have the March discussion. Thank you.

CHAIR YELLEN. Thank you. My thanks to everyone for a rich discussion of the outlook and risks, and I'd like to conclude with a couple of observations of my own. As many of you have noted, the data have come in about as expected since our previous meeting. In particular, labor market conditions have continued to strengthen. At 165,000 per month, on average, from October through December, the pace of payroll growth remains somewhat faster than that required to stabilize the unemployment rate in the longer run.

Although the unemployment rate ticked up to 4.7 percent in December, that rise largely reflected somewhat stronger labor force participation, itself a favorable development. Other labor indicators, including the U-6 and the quits rate, have also strengthened somewhat further, on balance, in the past few months, and the staff's labor market conditions index showed a modest increase in the fourth quarter. These additional improvements support my assessment that labor utilization is now more or less back to normal.

Many of your contacts report difficulty in hiring some types of workers and in some industries, and we've seen a modest pickup in the growth rate of average hourly earnings, although not in the ECI. But this is what we should expect in a healthy labor market and is not, in my view, a sign of incipient overheating.

I anticipate that labor market conditions will strengthen somewhat further this year in response to a continued moderate expansion in overall real activity. The BEA estimates that real GDP grew 1.9 percent at an annual rate in the fourth quarter, the same pace as for 2016 as a whole. Solid consumer spending, driven by sizable gains in labor income and rising household wealth, accounted for essentially all of this growth. I anticipate that consumption growth will remain solid this year despite rising interest rates, as employment and wages should continue to rise, and household spending is probably still adjusting to the recent increases in equity prices and home values.

In addition, the recent jump in consumer confidence that we have seen could be a sign that household spending may even be poised to accelerate, although for the moment, like the staff and Vice Chairman Dudley and others, I wouldn't jump to conclusions. The staff certainly noted that post-election bumps in sentiment have historically not signaled stronger consumer spending, but it's something that we need to monitor closely.

We've also seen stronger readings on business sentiment since the election, as many of you have noted. These developments could be a sign that orders and shipments are poised to accelerate, with capital spending expanding faster this year than the Tealbook projects. But they could also reflect enthusiasm that will wane or have little effect on actual investment decisions. Of course, the post-election movements in long-term interest rates and the dollar may also serve to restrain aggregate spending not only for business investment, but also for housing and net exports.

Importantly, we remain in the dark about the size, composition, and timing of any fiscal initiatives that the Congress may pass, let alone their effects on real activity over the medium term. And, of course, trade, immigration, health-care, and other policies could also significantly affect the outlook. At this point, I'm strongly inclined to continue with a wait-and-see approach, not revising my expectations for overall growth as a result of possible future policy changes while awaiting further information that may affect my outlook.

On the inflation front, I don't have anything to add, really, to what's already been said. With overall PCE prices rising 1.6 percent last year and core inflation running slightly faster, we are now considerably closer to our inflation goal than was true a year ago. In large part, the progress we have seen reflects the expected waning of the effects of past declines in prices of energy and imports. Assuming no further sizable movements in oil prices or the dollar, and with labor market conditions likely to be moderately tight, I expect that we will gradually close the remaining shortfall from 2 percent over the next couple of years.

The continued stability of most survey measures of expected inflation in recent months, as well as the sizable upward revision to market-based measures of inflation compensation since the middle of last year, are consistent with this assessment. If this assessment of ongoing developments in real activity and inflation is correct, what are the policy implications?

For this meeting, I think it's appropriate to leave the target range for the federal funds rate unchanged. It's only been a few weeks since our previous action, and I don't see a need to move again so quickly, given little new information and few signs that we have fallen "behind the curve." Economic growth remains moderate, labor market conditions are tightening at a relatively slow pace, and inflation is still below our objective. It's true that monetary policy remains modestly accommodative. But a few more increases in the target range would close most of the remaining deviation from the neutral rate by the end of this year, assuming that that rate is close to zero in real terms.

In addition, we should bear in mind that we are also passively tightening through the balance sheet, according tostaff estimates of the ongoing decline in the downward pressure on long-term interest rates exerted by our securities holdings. For these reasons, I think a gradual approach to tightening remains appropriate.

Concretely, I think a further increase in the federal funds rate in March may well be appropriate if incoming data suggest that employment and inflation are evolving in line with or more strongly than our current expectations and the risks continue to look roughly balanced or become tilted to the upside. Although market participants do not currently attach high probability to a March move, those expectations will continue to evolve with incoming data, and, if needed, there remains ample time and opportunity for further Federal Reserve communication before our March meeting.

Our policy judgments will also have to factor in a gradual rise in the neutral rate over time, assuming that domestic productivity growth and the global economy slowly pick up, as I expect. Easier fiscal policy also seems likely to put upward pressure on interest rates in the medium to longer run, although the extent it will do so is still very much up in the air.

Such developments will likely justify further increases in the federal funds rate over the medium to longer run, if we are to achieve and maintain our dual objectives. But we don't yet know to what degree or at what pace these upward pressures on the neutral rate will emerge and what other developments may significantly affect the outlook. I would thus urge us to adopt a cautious approach for the time being and not adjust policy expectations preemptively in anticipation of economic developments that may not occur for some time, if ever. I consider this cautious approach to be especially appropriate in an environment in which our ability to respond to adverse shocks is still importantly constrained by the effective lower bound.

Let me stop there. We have, as you know, a reception this evening for President Lockhart. We will resume tomorrow morning at 9:00 a.m., and Thomas will begin with his monetary policy briefing. I think we'll have ample time to wrap things up tomorrow.

[Meeting recessed]

February 1 Session

CHAIR YELLEN. Good morning, everybody. Let me just start by asking David Wilcox: Do you want to make any comments on data this morning?

MR. WILCOX. I'd be happy to dissertate at length but don't feel compelled to. I have no news.

CHAIR YELLEN. Okay. Then let's turn to Thomas for the monetary policy briefing and start our policy round.

MR. LAUBACH.[5] Thank you, Madam Chair. I'll be referring to the handout labeled "Material for the Briefing on Monetary Policy Alternatives."

I should start by pointing out that the text of alternative B on page 6 of your handout contains an optional insertion, in blue, that was not included in the text printed in Tealbook B. Among the many heated debates in Washington over the past week, one was whether "Consumer and business sentiment" requires the singular, "has," or the plural, "have." The insertion offers one way to settle this debate and, at the same time, indicates that, after all, you observe only some measures of these multifaceted concepts. All right. With that, I shall return to my regularly scheduled program.

The key question for the Committee at this meeting is whether the funds rate path suggested by the December FOMC statement and the SEP remains appropriate or whether the economic outlook and associated risks warrant signaling a somewhat different path. The three draft alternatives differ in their answers to this question. Alternative B would communicate that the Committee sees no change in the medium-term economic outlook and associated near-term risks and would maintain the December guidance about the likely future path of the policy rate. Alternative A would suggest greater uncertainty about progress toward the Committee's inflation objective and would signal a slower pace of rate increases than the December statement and SEP indicated. Finally, alternative C combines a somewhat more upbeat assessment of the economy with an immediate increase in the funds rate. Against this backdrop, the caveat that expectations for gradual increases in the funds rate could change as economic conditions evolve might be read as signaling that the stance of future policy could well be less accommodative than indicated in December.

The first three panels in my exhibit examine whether investors or survey respondents anticipate a notable shift in your policy stance in the near future. As the upper two panels show, the probability distributions of the funds rate at year-end derived from Eurodollar futures options (on the left) and reported by the respondents

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

to the Desk surveys (on the right) have not shifted substantially since your December meeting, and they remain quite diffuse. The probability distribution implied by market prices has shifted somewhat to the right, but most of its probability mass is on either one or two hikes this year. The median survey respondent places the highest probability on two hikes this year, although the odds on a faster pace of rate hikes have increased.

A potential explanation for the differences between these two distributions is the presence of negative term premiums in an environment in which the lower bound still looms large. The middle-left panel presents a range of estimates of the expected future path of the federal funds rate and compares them with the median path of your December SEP. A straight translation of the path derived from OIS quotes—the black line—implies a mean expectation of two hikes per year this year and next. This estimate assumes that term premiums are zero.

However, for some time now, surveys of interest rate expectations, from both the Blue Chip and the Desk, have suggested that term premiums may be negative. A negative term premium could arise if investors view medium-term Treasury securities as particularly effective insurance policies against worse-than-expected macroeconomic or financial conditions, as might occur when the risk of returning to the effective lower bound is high. Most models that the staff has used to attempt to estimate term premiums suggest that, at present, they are at least mildly negative. That said, the presence of the lower bound for interest rates is inconsistent with the assumptions of the majority of term structure models—in particular, with the typical assumption that shocks to interest rates are drawn from a symmetric distribution regardless of the level of the federal funds rate. The Board staff has recently developed a term structure model that overcomes in principle the obstacles associated with the lower bound. I showed the expected funds rate path from that model in my December briefing, and the current expected path is shown by the light-blue line. As Simon noted, the median path from the Desk surveys, shown in beige, suggests that the term premium at short horizons is approximately zero, whereas this model produces large negative estimates for the current magnitude of the term premium. This is an area of active research for the staff around the System, in the course of which we hope to gain more experience with this class of models.

The key point to take away from these first three panels is that both financial market and survey-based expectations for the path of the federal funds rate did not shift notably after the December rate increase and the release of the SEP median path. That said, as was the case before the December meeting, these expectations remain quite diffuse, suggesting that investors hold a range of views about how the economic outlook is likely to evolve and how monetary policy is likely to respond.

The matrix shown in the middle-right panel summarizes the responses to a special question in the January Desk surveys about the Committee's likely policy responses if the outcomes for the unemployment rate and core inflation this year deviate significantly from the outlook summarized by the medians of your projections reported in the December SEP. The shaded cell at the center shows the median of respondents' expectations for the federal funds rate at the end of this year, 1.13 percent, if economic conditions match your December SEP medians of 1.8 percent for core PCE inflation and 4.5 percent for the unemployment rate. The other cells report the levels of the federal funds rate that the median respondent would expect to see at the end of this year if core inflation and/or the unemployment rate deviate 50 basis points in either direction from the medians reported in the December SEP.

The three cells above the diagonal show by how much the Committee is expected to slow the rise in the federal funds rate if faced with outcomes indicating that progress toward its inflation objective is in jeopardy or if the unemployment rate rises significantly. Conversely, the three cells below the diagonal show that, if inflation were to overshoot 2 percent or the unemployment rate to undershoot the natural rate by more than anticipated, the funds rate path would be steeper. Another aspect of the results is that survey respondents believe that the Committee will respond more strongly to deviations in core inflation from expectations than to deviations in the unemployment rate.

Adjusting the target range for the federal funds rate is the principal tool with which the FOMC would be expected to respond to changes in the outlook, but the possible timing of and circumstances leading to the first change of your reinvestment policy received a good deal of attention over the intermeeting period. The bottom-left panel repeats the scatterplot that we showed in Tealbook B showing the expectations of respondents to the Desk's surveys for the most likely level of the federal funds rate at the time of the first change in the Committee's reinvestment policy, the vertical axis, and their associated expectations for how many months ahead the change will occur, the horizontal axis. As Lorie mentioned in her briefing, the January survey results, indicated by the the red dots, show some coalescing of views compared with those in December—the blue circles. As indicated in the box to the right, expectations regarding the level of the federal funds rate at the time of the first change in reinvestment policy moved down, with the midpoint of the median expectation now at 1.38 percent, roughly the assumption in the staff baseline projection. Respondents' views about the most likely timing are also less dispersed than in December, but the difference between the staff baseline assumption for the path of the federal funds rate and the paths assumed by the survey respondents implies that the median survey participant sees the change in reinvestment policy as not likely to occur until early 2018; the staff baseline assumption is October of this year.

Although the coalescing of views over the intermeeting period has apparently not triggered a notable market response, the experience of 2013 suggests caution. At that time, your communications about a prospective reduction in the pace of asset purchases caused a large market reaction even though these communications seemed in line with survey respondents' expectations. As you know, all three draft alternatives for today's meeting would make no change to the language concerning reinvestments. As input for your March meeting, the staff plans to provide you with background memos on the economic effects of different options for reinvestments and on the operational issues associated with those options.

Thank you, Madam Chair. That completes my prepared remarks. The December statement and the draft alternatives and implementation notes are on pages 2 to 13 of the handout.

CHAIR YELLEN. Thank you very much. Are there questions for Thomas? Governor Brainard.

MS. BRAINARD. In your panel in the middle left, does the much higher value of the term-premium-adjusted, market-based, long-run federal funds rate give you any pause as to the way your model is working?

MR. LAUBACH. That model is estimated over the period from 1991 onward. In that model, the short rate will return to the sample mean over time. That's how you get the convergence. But what you can tell is that the convergence must be very gradual, because, by 2020, you're still quite a bit below the long-run mean. So these models, in general—at least this version here—do not include factors that would have, technically speaking, a unit root or a literally permanent component.

CHAIR YELLEN. Are there other questions? [No response] Okay. Then let's begin the policy go-round. President Rosengren.

MR. ROSENGREN. Thank you, Madam Chair. I support alternative B for this meeting. We have made clear that we will be proceeding gradually, and we tightened in December. Furthermore, it is quite unclear how fiscal policy will unfold. Nonetheless, I believe that if the data remain consistent with the forecast, another tightening would be appropriate in March, particularly if we see further declines in the unemployment rate. Since the statement provides no tilt in that direction and markets currently are not anticipating a move that soon, we may need to consider communication outside the official statement if it becomes necessary to alter the expected path of interest rates.

In my view, the Tealbook is the most likely outcome but only if we raise rates at the pace assumed in the Tealbook. While there are risks of negative surprises, the Blue Chip consensus, the Tealbook, and my forecast all have the unemployment rate falling below 4½ percent even with policy that is a bit tighter than the median SEP in December.

The risk of a significant overshoot on both elements of the dual mandate may well merit taking out some insurance against that outcome, which would entail more tightening than even the Tealbook assumes. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Tarullo.

MR. TARULLO. Thank you, Madam Chair. I support alternative B. As I indicated yesterday, I think that my anticipated trajectory right now is one that was embodied in what I said in the SEP in December. That hasn't changed. But I do think that we've got this odd combination of upside risks internal to the economy and downside risks external to the economy. As I was thinking last night about what some of you said, it did occur to me that, to the degree that asset prices are already incorporating a fairly optimistic set of assumptions about what may be forthcoming in a fiscal package, there might actually be a little bit more downside risk just internal to the economy. I think it's really hard to figure out right now how much is animal spirits, how much is expectations of lower taxes, and how much is expectations of decreased regulation.

So that leaves me kind of where I've been, which is thinking that the trajectory is one of gradual—a couple or three—rate increases this year but just acknowledging that, as the Chair said yesterday, the momentum in the economy could appear to be picking up on its own, or we may get some further information between now and March as to whether fiscal and other policies are clarifying in such a way as to have more of an effect. In the SEP, I always resist saying uncertainty is greater than usual, because uncertainty is a feature of life. But if we had had an SEP this time around, I think I would have checked the box for uncertainty being "greater than usual in the past 20 years." Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Lacker.

MR. LACKER. Thank you, Madam Chair. At our December meeting, the staff discussed a memo reviewing past episodes in which the unemployment rate fell below the natural rate for an extended period. And one of those episodes was in the 1960s, a period that's come up in our deliberations several times in the past few years. There are many differences between that episode and our current situation, and many of you around the table have noted these. But there are many parallels as well, and I wanted to try to sort these out in my own mind. So during the intermeeting period, I spent a little time reading about monetary policy in the mid-1960s—specifically, the critical period from 1964 to 1968.

What I learned was fascinating, a bit unsettling, and also quite poignant. I'd like to share some of the highlights with you briefly. Some obvious parallels between now and the mid-1960s were evident in the charts that the staff distributed at the December meeting. First, resource utilization was tight and getting tighter. The unemployment rate fell from around 5½ percent at the end of 1963 to 4.0 percent at the end of '65, and it reached 3.6 percent near the end of 1966. Along the way, there was an active debate about the degree of remaining slack.

Second, inflation was low and stable coming into the period, hovering around 1½ percent through the end of 1965, although a number of prominent wage settlements in '64 and '65 exceeded the Administration’s guidelines. Inflation then began rising—3.1 percent in ’66, 2.6 percent in ’67, and 4.3 percent in ’68.

Third, fiscal stimulus was in play throughout the period. The Kennedy-Johnson tax cut was enacted in February 1964, followed in subsequent years by increased spending on Johnson’s Great Society programs. In mid-1965, Johnson announced a military buildup in Vietnam, but he deliberately kept the magnitude of the additional spending a secret even within his Administration, although Martin was aware of what was going on on the basis of his contacts in the Congress, at the Department of Defense, and at defense contractors in his hometown of St. Louis.

Fourth, Chairman Martin faced a hostile political environment, and tension between monetary policy and fiscal policy was front and center. Congressional populists such as Wilbur Mills and Wright Patman repeatedly threatened restrictive changes to the Federal Reserve Act, and a colorful, blustery, egotistical President was not shy about scolding the Federal Reserve Chairman in public or in private.

As the Kennedy-Johnson tax cut was being considered at the beginning of ’64, the Congress and the White House were openly opposed to interest rate increases. At hearings in January, Congressman Reuss accused Martin of wanting to vitiate the effects of the tax cut on employment. At the same time, Walter Heller, chairman of Johnson’s Council of Economic Advisers, was arguing that tight money “could kill off a substantial part of the expansionary economic impact of the tax cut.” The Federal Reserve Board did ultimately raise the discount rate on November 24, 1964—a 50 basis point increase—in response to the U.K. authorities raising their discount rate by 200 basis points to stem a balance-of-payments crisis.

President Johnson erupted. The press described him as unhappy and upset. The next time the Board raised the discount rate was December 6, 1965—also a 50-basis-point increase—a move that led to the famous incident in which Johnson summoned Martin two days later to his Texas ranch, where Johnson was recovering from gallbladder surgery. Johnson upbraided Martin, telling him, "You've got me in a position in which you can run a rapier into me, and you've done it," adding, "That's a despicable thing to do." Martin's visit also included a hair-raising drive around the ranch at breakneck speed in Johnson's white Cadillac convertible, with Johnson at the wheel.

In early 1966, bank credit soared, real output growth surged, and inflation rose to 3 percent. Wanting to avoid the visibility of discount rate increases, the Federal Reserve embarked on a jawboning campaign to persuade banks to limit credit growth, and the Desk acted to reduce free reserves, which was an arcane concept consisting of excess reserves minus discount window borrowing.

The resulting rise in market rates, together with binding Regulation Q constraints, led to a slowdown in housing activity that caused the Federal Reserve to back off at the end of '66 and in early '67. This also led to the Congress granting us our authority to purchase obligations of federal housing agencies and then proceeding to pressure us to actually make such purchases. But that's another story.

Economic conditions early in 1966 led Martin to begin campaigning with those in the Administration for a tax increase, in order to provide further policy restraint and to help finance the war. LBJ finally signed on at the beginning of '67 and proposed a tax surcharge in his State of the Union address. But his Administration argued for easier monetary policy to offset the expected contractionary effect of the tax increase. The Federal Reserve held off on tightening policy—despite sustained momentum in inflation—partly out of fear that it would take the pressure off the Congress to act on the tax change. They felt that if they raised interest rates, then the Congress would say, “Well, we don’t need policy restraint.”

Johnson delayed introducing the bill, however, out of fear that the Congress would insist on scaling back his Great Society programs in exchange. In the end, it wasn’t passed until the spring of 1968, at which point inflation had risen to 4 percent. At that point, the Federal Reserve held off on tightening, because they expected the tax increase to weaken growth significantly. But it was a temporary tax surcharge and did not end up having the contractionary effect that was anticipated at the time, in large part because the distinction between permanent and temporary tax cuts wasn’t fully appreciated. The Federal Reserve began raising rates more aggressively, but it was too late. In the midst of all of this, in early 1967, a public debate erupted regarding whether Johnson would or should appoint Martin to another term.

You may have noticed in my narrative the seemingly bizarre coincidence that, at the beginning of the tightening sequence in 1964 and ’65, we raised rates just twice in two years, both times at the very end of the year. The broader parallel, for what it’s worth, though, is that our initial tightening moves in the first two years were quite slow, both then and now. Another parallel is that there was uncertainty then, as now, regarding how accommodative the stance of policy really was at any given point in time. The Committee was often focused on free reserves and on nominal, rather than real, interest rates, and both emitted misleading signals to the Committee in early ’66. Today, obviously, uncertainty about r^* vexes us, and other elements of the Taylor rule make assessing the stance of policy challenging, to some extent.

There are several differences between now and then that ought to give us comfort that we can avoid the mistakes of the 1960s. One notable difference is the improved transparency regarding fiscal policy. It's hard to imagine a contemporary Administration hiding a doubling of war spending from the Congress and the Secretary of the Treasury for any appreciable amount of time, as McNamara and Johnson did.

The most important difference, though, is that the disastrous inflation experience of the 1970s has made clear how costly it can be to lose control of inflation and have inflation expectations become unhinged. This lesson appears to be much more broadly understood now within both the economics profession and the central banking world.

At the same time, however, some policymakers in the '60s articulated remarkably modern concerns. In a speech shortly after the December '65 rate increase, for example, Martin articulated a quite up-to-date argument for preemptive monetary policy. And let me quote this passage for you: "The effective time to act against inflationary pressures is when they are in the development stage—before they have become full-blown and the damage has been done. . . . It is simpler, for one thing, to try to prevent prices from rising than to attempt to roll them back. And, finally, it is surer and safer: So long as inflation is merely a threat rather than a reality, it is enough to prevent the pace of economic expansion from accelerating dangerously. But once that pace has become unsustainably fast, then it becomes necessary to reduce the speed, and once such a reduction is started, there is no assurance it can be stopped in time to avoid an actual downswing. . . . We shall succeed in avoiding a 'stop-and-go' cycle, as the British call the practice of first permitting inflationary pressures to develop and then taking drastic measures to suppress them, only if we do not delay until inflation is upon us." So Martin at least understood the risks in a way that I think we'd find very familiar, and some of us have said things very much like this.

I hope that the experience of the ’70s has made this lesson more broadly appreciated than it was in Martin’s time. At the same time, though, it’s not clear, at least to me, that the current Administration is likely to put much stock in the economic lessons of history.

Most critical of the differences between the mid-1960s and now may be the political context around price stability and Federal Reserve independence. The deference to Federal Reserve independence shown by Administrations since the early 1990s, I believe, has set a precedent that seems to have improved the political dynamic for us in recent years relative to what the record shows for the ’60s and ’70s.

I was surprised to learn how deeply Martin was involved in the fiscal policy deliberations of the Administration. Martin, like Burns after him, viewed himself as a participant in the Administration’s macroeconomic policymaking and thus was in some sense complicit in compromising the Federal Reserve’s independence. On the other hand, it’s hard to know how much autonomy they truly had. Certainly, the intensity of the direct pressure coming from Johnson and the Congress on interest rate policy was unlike anything we’ve ever seen in recent years. But I think we’d all agree that public harassment is not inconceivable in the current environment.

So, what do I take away from all of this? What do I think we should learn? The economic environment we face—full employment and a fluid fiscal outlook tilted toward stimulus—bears a striking resemblance to the mid-1960s. The fact that we’ve lived through the cauterizing monetary ordeals of the 1970s does provide some comfort for me but a little less than I had thought. Martin seemed to understand the risks and the need for preemption but wasn’t able to pull it off. Perhaps that understanding is now more widespread, but I’m not sure it’s universal. And, besides, the weak political standing of the Federal Reserve back then could well have been the decisive factor.

To be sure, the politics surrounding monetary policy has evolved significantly since the ’60s, but it’s hard to be sanguine about the political climate these days surrounding the Federal Reserve. All told, I guess I can find enough in the comparison with the mid-1960s to give me some hope that we will succeed, but there’s also plenty to suggest that we’ll need to remain vigilant in order to do so. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Harker.

MR. HARKER. Wow, that’s a tough act to follow, Madam Chair.

CHAIR YELLEN. Yes, very interesting.

MR. HARKER. But well done. As we’ve signaled that our normalization process would be gradual, I can support alternative B at this meeting. Also, the current uncertainty surrounding economic policy, as well as the recent behavior of inflation, makes this a prudent course of action at this time. However, as I alluded to yesterday, I do have concerns that inflationary pressures are higher than may be evident from the most recent data, and, if so, that may call for more than the two moves currently priced into futures markets.

I want to be sure that we’re prepared to move should the data warrant, and that we prepare markets for that eventuality. I don’t think our current forward-guidance language is up to the task, and we should seriously consider replacing the word “gradual” with something like “moderate” at the March meeting, as “gradual” has come, in my mind and to many in the market, to have a much too gradual interpretation.

I’m also looking forward to our discussion at the March meeting regarding the cessation of reinvestment of maturing Treasury securities and MBS. I found our past general discussions regarding the balance sheet helpful, but I believe it is time for us to nail down some specifics. The process of stopping reinvestment could begin as early as the second half of this year, and we will need to prepare markets in advance. Taking that need into account, we should begin preparing ourselves. Issues such as whether reinvestment should be phased out, as well as whether shrinking the balance sheet should influence the future policy rate path, need to be discussed, and we will need to begin crafting language indicating our intentions. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Mester.

MS. MESTER. Thank you, Madam Chair. In light of my outlook and the progress on our dual-mandate goals, I view an upward path of the federal funds rate as appropriate. The question is when to take the next step on that path. If we had prepared the public for it, I would be advocating taking another step today. However, since we did not do that, I can live with alternative B.

I'd be more comfortable if we were at a higher level of the funds rate. As I mentioned yesterday, I recognize there's considerable uncertainty about the outlook, but I don't think the proper reaction to that uncertainty is to stand pat and do nothing. Rather, I think we should be prepared to set policy consistent with our outlook. If and when some of the uncertainty is resolved or some risks are realized that change our outlook, then we should be prepared to change policy appropriately. Under the circumstances, I suspect that over the next few years we may need to change our forecasts and our anticipated policy rate path more frequently than we have over the past couple of years. I think that's fine. We should not hold ourselves to a standard of having to be prescient.

I think a higher level of the funds rate now would better position us to respond to changes in the outlook on either the upside or the downside. If the outlook changes, we may have to reverse course, but if it is done systematically on the basis of the outlook and we articulate the rationale, then that's not a problem.

I note that a higher federal funds rate would also give us more flexibility to end reinvestments while still being consistent with our earlier communications that the criteria for stopping reinvestments would be based on the level of the funds rate. I look forward to that discussion about reinvestment policy in March.

I don't believe we're "behind the curve" yet, and I realize that the policy rate path that we anticipate does not require us to raise the policy rate at each meeting. But, as we discussed last time, soft landings are hard to come by. They've occurred only when monetary policy is preemptive and began to tighten before the unemployment rate fell below real-time estimates of the natural rate and when the shocks that caused the economy to slow were either small or beneficial.

So it's important that we remain vigilant against falling "behind the curve." Like the siren song, waiting for uncertainty to resolve before acting is always seductive. But we have continued to make progress on our goals. There's a growing list of policy rules that suggests the current stance of policy is too accommodative and increasingly so. The Board staff's assessment of asset valuation pressures has risen from moderate to notable, and leverage is very high for speculative-grade corporate borrowers. In this environment, if we accumulate enough delays, we could easily find ourselves "behind the curve." I hope we avoid that shipwreck. And if between now and March the data come in consistent with the forecast, I hope we will be open to moving the funds rate up.

Regarding the statement language, I prefer paragraph 4 in alternative C to that in alternative B. In view of the progress to date, and anticipated further progress, on the inflation goal, I no longer think it necessary to continue to point out the shortfall of inflation from the goal or to emphasize we're carefully monitoring progress, which, of course, we always are. However, I understand that today may not be the day to make such a change. It may be better to wait until we move the funds rate again.

I continue to think we should find a way to back away from or clarify the "gradual path" language in paragraph 4. If we look at the median path in the December SEP, we see a path that has the funds rate rising gradually toward and staying below its longer-run level. That may be how the public is interpreting "gradual." However, in many individual forecasts, including the Tealbook, the funds rate moves above the long-run level before coming back down and converging to it. Indeed, the Tealbook baseline has the funds rate moving up to 4 percent in the fourth quarter of 2021, 1 full percentage point above the longer-run level. The pattern is also seen in all of the alternative simulations. So even ignoring the uncertainty regarding the policy rate path, I don't think the public understands that the anticipated path includes an overshoot.

In addition, there are a number of risks that, if realized, may entail a different policy rate path from that we currently anticipate. As I mentioned, I think we need to be prepared for more changes to the outlook and appropriate policy rate path than we've seen in recent years. This will be a communications challenge. I think we'd be well served to eliminate the "gradual" language when we next change the funds rate or even sooner.

Conveying the degree of uncertainty regarding our current assessment of the likely future policy rate path, in view of the uncertainty associated with the forecast and the inevitable shocks that will hit the economy, will also be helpful, and I'm glad that we will be publishing confidence bands around the SEP numbers, starting in March. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Evans.

MR. EVANS. Thank you, Madam Chair. I support alternative B. I agree with the case for alt-B expressed in the Tealbook. Our earlier statement said the Committee viewed a gradual path of rate increases as being appropriate policy, given our forecasts of economic activity and inflation. We have seen some further progress in labor markets, some upward movement in inflation, and, at least for the moment, some apparent diminution of risks from abroad. But these improvements are no different than those expected in our earlier forecasts. Events are not evolving better than we expected, and the zero-lower-bound risk-management calculus continues to be relevant in this low-r^* global economy. Accordingly, there's no reason to change our guidance regarding appropriate policy, in my opinion.

For similar reasons, the time is not yet ripe to signal that any changes in balance sheet policy are forthcoming soon. Since the first rate hike in December 2015, our policy statement has said that we plan to keep reinvesting maturing securities until we're "well under way" with funds rate normalization. The dealer survey seems to align around a range of 1¼ to 1½ percent. We had previously ceased reinvestments, I think, back in 2011, so this is not uncharted territory. With my inflation outlook not reaching 2 percent sustainably until 2019, I don't see the need to adjust our balance sheet language any time soon.

Finally, I still think the risk-management calculus remains important. We still are uncomfortably close to the effective lower bound, so a downside surprise would still be difficult to deal with. On the other hand, we're well positioned to react to unexpected strength in the economy. Indeed, in the Tealbook, alternative scenarios of more expansive fiscal policy, stronger domestic aggregate demand, and stronger international growth—in all of them, a moderately higher-than-baseline funds rate path was able to keep inflation well contained.

This is especially noteworthy for the alternative scenario of more expansive fiscal policy, since it is the one that appears to have the highest probability of occurring at the moment. This would be a scenario we would observe in real time. We would be able to see it rolling out as tax and spending bills were enacted, so there's no risk that we would not observe its occurrence. This clarity reduces the risk of being caught "behind the curve" and adjusting policy to meet our dual-mandate responsibilities. So, Madam Chair, I agree to alt-B, and steady as we go at the moment. Thank you.

CHAIR YELLEN. Thank you. President Bullard.

MR. BULLARD. Thank you, Madam Chair. I support alternative B for today. I would describe this meeting as the dog that didn't bark. This statement is not setting up a March meeting move, and I think that's probably the most significant thing that's happening here that will be noted today and as this spills out through financial markets in the coming days.

In my view, if we're not willing to set up a March move or hint toward it at this meeting, then I would not try to do it during the intermeeting period unless we got data that were significantly different than what we were otherwise expecting, on the order of a standard deviation different from what we had previously thought. Markets right now are putting the highest probability on a June move—perhaps one or two hikes this year, as Thomas's presentation just showed us in panels 1 and 2, with a lot of diffusion associated with that expectation.

After this meeting, we will all be asked whether March is on the table, with "on the table" becoming the most common thing that's used to describe whether we might possibly move at a meeting or not. We will all, of course, have to answer that it is because all meetings are live, and what that may do is set off a wave of speculation about a March FOMC move. That's been a pattern that has developed—unfortunately, I think—repeatedly in the 2015 and 2016 time frame, and I don't see any reason for it not to continue now.

My own view is that fiscal uncertainty is unlikely to be meaningfully resolved by the March meeting. In past political situations like the current one, key legislation was not signed until August. In addition, details in a fiscal package do matter considerably for the future path of the economy. And while I do think that some of the Administration's policies have the potential to increase medium-term growth, there are also downside risks—especially through the trade channel should it trigger reactions from foreign economies on trade aspects of the global macroeconomy.

The current strategy of the Committee has us putting upward pressure on the short end of the yield curve through changes in the policy rate in the quarters ahead but also simultaneously maintaining downward pressure on the longer end of the yield curve, at least according to our rhetoric, by maintaining a large balance sheet. This sounds like our policy is to flatten the yield curve. I'm not sure that it really is, and I'm not sure that it makes that much sense. I think it's time to carefully reconsider the Committee's reinvestment policy. If we end reinvestment with only moderate policy rate changes—and we have only one rate change for 2017 in our assumptions in St. Louis—we would be normalizing the yield curve, albeit at a very low level. But that low level is consistent with today's regime of global low interest rates, low inflation, and low growth. The staff analysis doesn't acknowledge that there are multiple regimes and so always has us returning to a relatively high interest rate, higher-growth regime in the future, which I think is not the way to look at the data.

I think ending the reinvestment with only one policy rate change would be a more appropriate policy move in 2017 than to try to have a significant rise in the policy rate and keep the reinvestment policy as it is. I look forward to the discussion of this issue at our next meeting in March. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Fischer.

MR. FISCHER. Thank you, Madam Chair. A great deal of information has reached us since our December meeting. But it's not information about the likely development of the economy—"likely" meaning expectation thereof—particularly with respect to employment and inflation, for the developments of the past seven weeks have not very much changed our short-term forecasts. The information that has reached us is primarily about decisionmaking in the new Administration. That information has increased my uncertainty about future nonmonetary economic and other policies, and I suspect that many of us share that view.

Today's decision is clear—keep the interest rate where it is—though what comes next? Well, we're close to attaining both our policy targets, and the staff's forecast for the years ahead sees a continuation of recent trends in both employment and inflation. Provided that the economy develops approximately as forecast, we should continue normalizing monetary policy with respect to both the interest rate and then, possibly a bit later, the beginning of balance sheet reduction.

The forecast sees the unemployment rate declining to 4.1 percent by 2019. However, we have little, though not zero, experience of very low unemployment, and I would not be surprised if the Phillips curve begins to revive as unemployment falls further. The conclusion that we should continue normalizing monetary policy remains correct if the Phillips curve turns out to be less flat at low unemployment rates than we have believed in recent years.

The blue- and black-edged pages of Tealbook A—the Risks and Uncertainty section and the Monetary Policy Strategies section, respectively—present a very large variety of possible outcomes. Our discussion yesterday and the Tealbook focus primarily on the possible effects of a more expansionary fiscal policy whose estimated effects on both unemployment and inflation are relatively small. But, as the Tealbook shows, many things could happen, and we shall have to remain alert to the potential effects of unexpected policy initiatives, and some expected ones, on the dynamics of growth and inflation. And we will have to be no less alert to the possible effects of potential changes in financial regulation on financial stability.

At the same time, we should be examining aspects of our policy apparatus to which we have become accustomed but that could possibly be improved. Among those aspects, I would include the SEP, particularly the discussion concerning the implied forecast of the number of interest rate changes the Committee believes it will make in this and future years. Many in the public mistakenly see this as a foregone conclusion. We really have to get that clear. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. Governor Powell.

MR. POWELL. Thank you, Madam Chair. Little has changed since the December meeting, so we appear to be continuing on the path of recent years—growth of around 2 percent, ongoing improvement in labor market conditions, and inflation now nearing 2 percent. And, as I mentioned yesterday, I see the risks associated with that forecast as balanced as of today.

On that path, I see it as appropriate to continue gradually raising the target range for the federal funds rate. In December, I wrote down three increases for 2017, and that still seems about right. If the data are supportive, then I could see the March meeting as an appropriate time for another increase. Obviously, it would need to be signaled in some way ahead of time because the market will not be expecting it. If the case is not quite clear by March, then it's also worth considering a well-signaled increase at the time of the May meeting. That would, of course, have the value of breaking the uncomfortable equilibrium of moving only at press conference meetings. Again, assuming that things go on as expected and without weak incoming data or unexpected risks arising, waiting for the June meeting feels to me like a third-best choice.

The discussion at the March meeting on the balance sheet seems likely to be a consequential one, and I do have some strong priors, but I look forward to taking what will no doubt be a deep dive into a coming wave of memos and analysis. And my plan is to take Vice Chairman Dudley's comments yesterday to heart and try to stick close to that "well under way" language that's been in paragraph 5 of the statement since December 2015 and avoid taking too firm of a position before our discussions, which I look forward to.

On the statement language, count me as a strong supporter of the blue "Measures of" addition. I'm among those who raised that. And on the other, I would say I do think it's time to consider for the next meeting some of the other thoughts that have been raised about "gradual," particularly about the inflation language, which I think we put in at a time when we really hadn't shown much progress. But, now, we have. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. First Vice President Gooding.

MS. GOODING. Thank you. I support the policy recommendation in alternative B, and I'm okay with the minimalist changes in the statement language. The Atlanta Fed's outlook has not changed materially, and we continue to think that two 25 basis point increases this year feel appropriate. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Madam Chair. I support alternative B as written. In the period leading up to this meeting, I had made one particular suggestion in removing the word "only" before "gradual," as we did in alternative C. But I understand why we felt that we should leave the language as it is, and I'll come back to that.

I believe we're making good progress on reaching our dual-mandate objectives. I believe, though, that the risk of overshooting our full employment objective is real, and I do believe we'll continue to make gradual progress on reaching our 2 percent inflation objective in the medium term. In light of this, I believe we should be taking steps to remove accommodation in the months ahead. And while I believe it's appropriate to stand pat for today, I also believe that if the economy progresses as I expect, it will be appropriate to remove some amount of accommodation at our March meeting.

I'm also cognizant that at the March meeting, we'll have additional insight into how 2017 economic conditions are unfolding, and we'll have greater insight into what fiscal and structural policies are most likely to be implemented by the new Administration. While there is certainly downside risk, I do believe that as these fiscal and structural policies are clarified, there's probably more risk to the upside than to the downside from these policies to my baseline forecast.

My views regarding March are in the context of the desire to remove accommodation in a gradual and patient manner. I want to avoid a situation in which we feel the need to remove accommodation at a more accelerated pace. I also believe that in 2017, it may well be prudent for us to allow more than three months between interest rate moves. In that context, moving in March gives us optionality, in my view. I believe not moving in March may restrict our options for orchestrating the gradual and patient removal of accommodation. So if the economy progresses as I expect, I would hope that between now and March we set the stage for forthcoming action in the near future. Thank you, Madam Chair.

CHAIR YELLEN. Thank you. President George.

MS. GEORGE. Thank you, Madam Chair. Consistent with the Committee's ongoing guidance that rates will increase only gradually, I view today's decision as appropriate. I also see the wisdom of making minimal adjustments to the statement, although I would have preferred alternative C's characterization of inflation. Paragraph 4 of alternative B continues to emphasize the current shortfall of inflation from the 2 percent goal, language that was added in December 2015 when headline inflation was around ½ percent.

With significant uncertainties about the scope, size, and timing of potential changes in fiscal policies, calibrating monetary policy will be more challenging. I continue to support a gradual approach in removing accommodation but one that is considerably faster than one rate increase annually, especially if the labor market continues to strengthen. Thank you.

CHAIR YELLEN. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Madam Chair. I support alternative B. The three metrics that I've been focused on to think about the appropriate stance of policy are the core PCE inflation rate, inflation expectations, and the headline unemployment rate—as some way of measuring whether there is still slack in the labor market and whether it is translating into inflation. Since we last met in December, we really haven't seen much action on any of these indicators, and we haven't seen much action over the course of the past year, frankly. Core PCE hasn't moved very much. Inflation expectations—some measures have come up, and some have gone down. And the unemployment rate has held fairly constant.

I'm open minded as to March, but I want to see movement in some of those three measures to see if we really are reaching our target. I know some members of the Committee think that we're close on our inflation and employment mandates. It isn't clear to me that we are yet. I don't have a strong view, but I want to see more data that we've used up labor market slack. Maybe the OMB is right—maybe there are another million workers who want to reenter the labor force. I'd just like to see more data before reaching a conclusion.

Lastly, on the balance sheet, I'm looking forward to our discussion in March. I mentioned this yesterday—and I could ask the staff to consider this as they're preparing their memos—which is the notion of, is it worth considering separating the announcement of a change in reinvestment policy and the actual implementation? I imagine the announcement itself is going to be a tightening action, but I don't know how much of a tightening action it's going to be. And I could argue that there may be a benefit to our making some statement that we're going to start rolling off the balance sheet six months later, and then seeing how markets react. If markets react aggressively, then we may want to delay federal funds rate hikes. If markets don't react aggressively, then we might want to continue with federal funds rate hikes. I don't have a strong view, but as staff members are preparing their analysis, if they could consider that, I would find that very helpful. Thank you.

CHAIR YELLEN. Thank you. President Williams.

MR. WILLIAMS. Thank you, Madam Chair. I support alternative B as written. We've reached or perhaps even exceeded full employment, and I have increasing confidence that inflation is on track to reach our objective.

The language in alternative B positions us well to raise our funds rate target range in March, should the outlook evolve as I expect, or to delay action if conditions warrant. In this regard, I have several comments. First, we shouldn't get fooled if our first-quarter GDP growth forecasts fall between now and March. As I pointed out yesterday, such a decline is a predictable aspect of a residual seasonality that's shown up in the past several years. For the past three years, the Tealbook has revised down its real-time first-quarter forecasts between the January and March meetings. So if history repeats itself and our first-quarter forecasts shift downward a bit, we should not take that as a signal that the economy is stalling or as a reason for policy delay.

Second, here I'm going to echo some of the comments of President Mester. Lack of fiscal policy clarity is not a reason to delay normalization in March. It's likely to be some time before we have clarity about the size, timing, and composition of fiscal stimulus. But, as demonstrated by the Tealbook alternative scenarios, a larger or smaller stimulus would mainly affect the appropriate funds rate path in 2018 and 2019 rather than this year. So I think we can focus on the actual data and the progress we have made on our objectives and not have to look for clarity regarding what fiscal and other policies will be in order to make another policy move.

Finally, here I think I'm echoing President Kaplan's remarks verbatim—I'm not used to going this late—another argument in favor of a March rate increase is to preserve our policy optionality. So even if the appropriate policy rate path turns out to require, say, just two or three funds rate increases this year, starting out early gives us the flexibility to do that. And if the data surprise on the downside later on, well, we'll just achieve a more gradual path by not having more rate hikes later in the year. However, if the data suggest greater overshooting of full employment, higher inflation associated with more positive developments in the economy, or maybe fiscal stimulus—and, say, we need four increases—then we'll be glad that we remained on the path of gradually raising rates in March. Thank you.

CHAIR YELLEN. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. A number of crosscurrents are affecting activity at present, and it will be useful to gather more information about how the economy is adjusting before undertaking a further removal of accommodation. It will be useful to see if the increases in business and consumer sentiment are reflected in the incoming indicators of business investment and consumer spending; whether increases in mortgage rates have a noteable effect on the housing market; and whether the labor market, inflation, and inflation expectations improve further. We may also learn more about the magnitude, composition, and timing of any forthcoming policy changes as well as other possible policy changes that could pose risks to the outlook to the downside or the upside.

In the neighborhood of full employment, the increases in business and household sentiment and the prospect of expansive fiscal policy have changed the balance of risks to the outlook. As a result, it is likely that continued progress in the labor market and on inflation will warrant further removal of accommodation.

On the basis of recent indicators, we might expect that progress to continue to be gradual and steady. Accordingly, a gradual approach on policy will remain appropriate as long as inflationary pressures stay muted, the economy remains short of our objectives, the neutral rate continues to be low, and downside risks from abroad are material. However, if changes in fiscal policy lead to a more rapid elimination of slack, policy adjustment would, all else being equal, likely be more rapid. Similarly, if stimulus or sentiment leads to more rapid progress toward our goals, the conditions we have set for a cessation of reinvestments will likely be met sooner than they otherwise would have been.

In light of this, we should engage the question of at what point we consider the normalization of the level of the federal funds rate to be, as we said, well under way and whether, as a consequence, it will be appropriate to cease reinvestments.

Providing further guidance to the market about the conditions that will bring about a decision to cease reinvestments, whether those reinvestments will cease all at once or taper gradually, whether the effect of that cessation of reinvestments on the size of the balance sheet will be smoothed to avoid large swings from month to month, and the likely appropriate dimensions of the balance sheet in the post-crisis "new normal" will all be valuable in helping prepare the public well in advance of any decision and minimizing the risks of excessive volatility occurring when the decision occurs. It'll also be helpful to discuss and communicate to the public whether we regard the balance sheet as a largely passive tool, subordinate to the short-term rate when the economy is removed from the effective lower bound, or whether, because it may operate on the economy somewhat differently than the short-term rate, it may be helpful in limited circumstances to use the balance sheet as an additional active tool, even away from the effective lower bound.

Thus, I welcome discussion at the upcoming meeting about these issues to facilitate the achievement of a rough consensus in the Committee and to communicate that to the public in a timely manner. But these issues are for the future. For the present, I support alternative B. In that regard, I want to just note that I strongly support retaining language on inflation, because we have a very long-standing shortfall from our target and dropping that language would suggest that we are not actually serious about the symmetry of our target. So I think that it is worth continuing this discussion. It's also worth noting that if dollar strength continues or increases, some of the progress on inflation that we're anticipating may be suppressed. Thank you, Madam Chair.

CHAIR YELLEN. Thank you very much. Vice Chairman.

VICE CHAIRMAN DUDLEY. Thank you, Madam Chair. I support alternative B as written. The outlook hasn't changed materially from the December meeting. A move at this meeting would be a huge surprise, and it would also be inconsistent with our "gradual path" messaging. So alt-B seems to be fully appropriate. However, I think we do have to consider whether the current market expectations are consistent with the likelihood of a March move and whether alternative B will shift expectations in the direction we desire. I concluded—and I think this is Thomas's view as well—that, as written, alt-B is very neutral and is unlikely to shift expectations upward.

I also conclude that we probably want a somewhat higher probability of a March move priced into the financial markets than we currently have—there's only about a 20 or 25 percent probability of a March move. Raising that probability also seems consistent with the sentiments I heard around the table about people's own views of the likelihood of moving in March.

The probability priced in right now seems low to me, in light of the fact that the economy is deemed to be growing at an above-trend pace. We're already close to full employment, and the fact that financial conditions—even though individual components have been moving around a lot, they're really roughly unchanged from where we were a few months ago. Stocks are up, credit spreads have narrowed a lot, and that's been offset by the dollar appreciation and the increase in Treasury bond yields. But, generally, I think the movements in financial conditions roughly cancel themselves out. You also have the issue of household and business sentiment, which has improved, and the likelihood that fiscal policy has become more stimulative. So, to me at least, the risks to growth are shifting a bit toward the upside.

So, what to do? We could, at this late date, try to come up with language to make alternative B more upbeat and indicate that we are more inclined to an earlier move. But I think that would be a mistake because it would be difficult for us to calibrate, and I think it would be hard for market participants to interpret. What's the urgency of communicating something forcefully in the February FOMC statement when the outlook for policy hasn't changed appreciably? So, instead, assuming the upcoming data are supportive, I would favor communications before the March meeting that raise expectations about the possibility of a March move. I note that the Chair has an excellent forum coming up for doing this in her *Monetary Policy Report* testimony. And, of course, each of us can also play a role in shifting those expectations as necessary if we have to.

CHAIR YELLEN. I also have an early-March speech I'll be giving in Chicago, which I could also use to do a little bit of shifting.

VICE CHAIRMAN DUDLEY. Okay. Thank you.

CHAIR YELLEN. Okay. Well, thank you for a very good round of discussion. I think we had broad-based support for alt-B today. There was one proposed change, this minor matter in blue—to add the words "Measures of" in paragraph 1. I did hear some significant support for it. Is there anybody who would have a problem with changing alt-B to include the bracketed language "Measures of consumer and business sentiment"? [No response] Okay. So let us do that. And, Brian, do you want to then walk us through what we will vote on? That will be the only change—to unbracket "Measures of consumer and business sentiment."

MR. MADIGAN. Thank you, Madam Chair. As you indicated, this vote will be on the policy statement for alternative B as shown on pages 6 and 7 of Thomas Laubach's briefing materials, with the inclusion of the phrase "Measures of" in the first paragraph. It will also include the directive to the Desk as it is represented in the implementation note on pages 10 and 11 of Thomas's briefing materials.

Chair Yellen	Yes
Vice Chairman Dudley	Yes
Governor Brainard	Yes
President Evans	Yes
Governor Fischer	Yes
President Harker	Yes
President Kaplan	Yes
President Kashkari	Yes
Governor Powell	Yes
Governor Tarullo	Yes

Thank you.

CHAIR YELLEN. Okay. Now, we're going to do something new that was described in Tealbook B. If you read this discussion, starting at this meeting, whenever we have an FOMC decision on the funds rate, the Board is going to vote on the matters under the Board's jurisdiction—namely, interest rates on reserves and discount rates. The purpose of doing so is to reinforce the message of consistency of the Board's decisions with the FOMC's monetary policy decision. So even if there's no change in the stance of monetary policy, the Board will, from now on, vote on these matters to signal, in order to the public that our decisions are in accord and consistent with each other.

So let's proceed to do that. I need a motion from a Board member to leave the interest rates on required and excess reserve balances unchanged at 75 basis points.

MR. FISCHER. I'm happy to make this precedent-setting proposal. [Laughter]

MR. TARULLO. Second.

CHAIR YELLEN. Thank you. Without objection. Finally, I need a motion from a Board member to approve establishment of the primary credit rate at the existing rate of 1¼ percent and establishment of the rates for secondary and seasonal credit under the existing formulas specified in the staff's January 27 memo to the Board. Do I have a motion?

MR. FISCHER. So moved.

MR. TARULLO. Second.

CHAIR YELLEN. Thank you. Without objection. Okay. And that completes our work. Let me mention that the date of—

MR. LACKER. Madam Chair.

CHAIR YELLEN. Yes.

MR. LACKER. May I ask a question about this new procedure of the Board?

CHAIR YELLEN. Yes, of course.

MR. LACKER. At a conference call at the very beginning of January 2001, the FOMC voted to reduce the federal funds rate target 50 basis points. A number of Banks had put in for a 25 basis point decrease in the discount rate. The Board voted to approve those changes and, in its statement, invited other Reserve Banks to submit 50 basis point decreases, which Reserve Banks subsequently did and then the Board approved. That was consistent with what I understood to be the current practice of the Board—acting only on requests of Reserve Banks. We're not changing that precedent, are we?

CHAIR YELLEN. No, we're not changing the precedent. We change the discount rate only on the requests of Reserve Banks.

MR. LACKER. Okay. Thanks.

CHAIR YELLEN. Brian, you're—

MR. MADIGAN. I believe that's been the precedent. I don't know if Scott wants to mention the Legal Division's view.

MR. ALVAREZ. It's a little more than the Legal Division's view. That has been the precedent, and, indeed, the Federal Reserve Act provides that the Reserve Banks must put in a recommendation for a rate every 14 days unless the Board requires that to be done more often. And that was, I think, the legal statute that was used for the 2001 request. But the Attorney General has stood by a Board interpretation from almost 100 years ago that the Board may determine the rate for the discount rate even without a request or recommendation from the Reserve Banks, and that would be the rate that would be established by the Reserve Banks. I have found no situation in which the Board has in practice acted without a recommendation from a Reserve Bank. But that is the state of the law.

MR. LACKER. I ask only because the wording of the discussion in the Tealbook was ambiguous on this point. So thank you for that conversation.

CHAIR YELLEN. There's no intention to change it, but I think what Scott said goes.

Okay. Well, we're done relatively early. But I will say that the staff anticipated this might be the case and has modified our usual lunch arrangements in order to take account of the possibility that we would finish early. So the situation is that boxed lunches are available now for those who want to leave soon or take a box back to your office, but there will also be a small buffet lunch available at 11:30 for anybody who will still be here. So, whichever way you go on this: *Bon appétit*, and we look forward to seeing you in March.

END OF MEETING