Meeting of the Federal Open Market Committee
January 29–30, 2019

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 29, 2019, at 10:00 a.m. and continued on Wednesday, January 30, 2019, at 9:00 a.m.

PRESENT:
Jerome H. Powell, Chairman
John C. Williams, Vice Chairman
Michelle W. Bowman
Lael Brainard
James Bullard
Richard H. Clarida
Charles L. Evans
Esther L. George
Randal K. Quarles
Eric Rosengren

Patrick Harker, Robert S. Kaplan, Neel Kashkari, Loretta J. Mester, and Michael Strine, Alternate Members of the Federal Open Market Committee

Thomas I. Barkin, Raphael W. Bostic, and Mary C. Daly, Presidents of the Federal Reserve Banks of Richmond, Atlanta, and San Francisco, respectively

James A. Clouse, Secretary
Matthew M. Luecke, Deputy Secretary
David W. Skidmore, Assistant Secretary
Michelle A. Smith, Assistant Secretary
Mark E. Van Der Weide, General Counsel
Michael Held, Deputy General Counsel
Steven B. Kamin, Economist
Thomas Laubach, Economist
Stacey Tevlin, Economist

Thomas A. Connors, Rochelle M. Edge, Beverly Hirtle, Daniel G. Sullivan, Christopher J. Waller, William Wascher, Jonathan L. Willis, and Beth Anne Wilson, Associate Economists

Simon Potter, Manager, System Open Market Account

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

Ann E. Misback, Secretary, Office of the Secretary, Board of Governors

Matthew J. Eichner,[1] Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors; Andreas Lehnert, Director, Division of Financial Stability, Board of Governors

Jennifer J. Burns, Deputy Director, Division of Supervision and Regulation, Board of Governors; Michael T. Kiley, Deputy Director, Division of Financial Stability, Board of Governors; Trevor A. Reeve, Deputy Director, Division of Monetary Affairs, Board of Governors

Jon Faust, Senior Special Adviser to the Chairman, Office of Board Members, Board of Governors

Antulio N. Bomfim, Special Adviser to the Chairman, Office of Board Members, Board of Governors

Brian M. Doyle, Joseph W. Gruber, Ellen E. Meade, and John M. Roberts, 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

Christopher J. Erceg, Senior Associate Director, Division of International Finance, Board of Governors; David E. Lebow and Michael G. Palumbo, Senior Associate Directors, Division of Research and Statistics, Board of Governors

Edward Nelson and Robert J. Tetlow, Senior Advisers, Division of Monetary Affairs, Board of Governors; Jeremy B. Rudd, Senior Adviser, Division of Research and Statistics, Board of Governors

Marnie Gillis DeBoer,[1] Associate Director, Division of Monetary Affairs, Board of Governors

Jeffrey D. Walker, Deputy Associate Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors

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

Glenn Follette and Norman J. Morin, Assistant Directors, Division of Research and Statistics, Board of Governors; Christopher J. Gust, Laura Lipscomb,[1] and Zeynep Senyuz,[1] Assistant Directors, Division of Monetary Affairs, Board of Governors

Dana L. Burnett, Michele Cavallo,[1] and Dan Li, Section Chiefs, Division of Monetary Affairs, Board of Governors

Sean Savage, Senior Project Manager, Division of Monetary Affairs, Board of Governors

[1] Attended through the discussion of the long-run monetary policy implementation frameworks.

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

Kurt F. Lewis, Principal Economist, Division of Monetary Affairs, Board of Governors; Christopher L. Smith, Principal Economist, Division of Research and Statistics, Board of Governors

Ayelen Banegas, Senior Economist, Division of Monetary Affairs, Board of Governors

Luke Pettit,[1] Senior Financial Institution and Policy Analyst, Division of Monetary Affairs, Board of Governors

Pon Sagnanert, Financial Analyst, Division of Monetary Affairs, Board of Governors

Yvette McKnight,[2] Staff Assistant, Office of the Secretary, Board of Governors

Meredith Black, First Vice President, Federal Reserve Bank of Dallas

David Altig and Sylvain Leduc, Executive Vice Presidents, Federal Reserve Banks of Atlanta and San Francisco, respectively

Bruce Fallick, Marc Giannoni, Susan McLaughlin,[1] Anna Nordstrom,[1] Angela O'Connor,[1] Keith Sill, and Mark L.J. Wright, Senior Vice Presidents, Federal Reserve Banks of Cleveland, Dallas, New York, New York, New York, Philadelphia, and Minneapolis, respectively

Roc Armenter,[1] Kathryn B. Chen,[1] Joe Peek, Alexander L. Wolman, and Patricia Zobel,[1] Vice Presidents, Federal Reserve Banks of Philadelphia, New York, Boston, Richmond, and New York, respectively

Samuel Schulhofer-Wohl, Senior Economist and Research Advisor, Federal Reserve Bank of Chicago

[2] Attended Tuesday session only.

Transcript of the Federal Open Market Committee Meeting on January 29–30, 2019

January 29 Session

CHAIRMAN POWELL. Good morning, everyone.

SEVERAL. Good morning.

CHAIRMAN POWELL. I think I'll start with a scheduling announcement. As you probably know, we're expecting today as much as two inches of snow [laughter], which, as a native Washingtonian, I feel comfortable calling "a mighty blizzard." And so we're going to cancel tonight's dinner. In fact, I think looking at today's work, there is a good chance that school can get out early, maybe around 4:00. We'll see how that goes. So there's that.

To begin: This meeting, as usual, will be a joint meeting of the FOMC and the Board, and I need a motion from a Board member to close the meeting.

MR. CLARIDA. So moved.

CHAIRMAN POWELL. Without objection. As you know, we have a very full agenda for this meeting, so we're starting earlier than normal in order to ensure that we've got ample time for a full discussion of the topics.

Effective today, Presidents Bullard, Evans, George and Rosengren are voting members of the FOMC this year. Welcome back to each of you as voters.

I'd also like to take a second to congratulate Stacey Tevlin. As many of you know, it was announced Friday that the Board had appointed Stacey as director of the Division of Research and Statistics, effective February 4. She brings to the division many years of leadership and research experience, a keen understanding of the U.S. economy, and extensive public service at the Fed. Stacey, we look forward to working with you in this new capacity very soon. Won't you please join me in welcoming Stacey. [Applause]

Finally, I just want to remind everyone that later in the day the Board's photographer will come in for 5 to 10 minutes to take pictures—exciting action pictures [laughter]—of the Committee.

With that, let's dive into the organizational items on the agenda before moving on to the regular portion of our meeting. The first agenda item is the "Election of Committee Officers." Following historical precedent, I will turn the floor over to the Board Vice Chairman, who will handle the nominations and elections for the positions of Chairman and Vice Chairman of the Committee. I will recognize Governor Clarida.

MR. CLARIDA. Thank you. I will be calling for two sets of nominations and votes. First, I'd like to ask for a nomination for Committee Chairman.

MS. BRAINARD. I would like to nominate Jay Powell.

MR. CLARIDA. Is there a second?

MR. QUARLES. I second that nomination.

MR. CLARIDA. Any other nominations or discussion? [No response] Without objection. Now I'd like to ask for a nomination for the position of Committee Vice Chairman.

MS. BRAINARD. I would like to nominate John Williams.

MR. CLARIDA. Is there a second?

MR. QUARLES. Second.

MR. CLARIDA. Any other nominations or discussion? [No response] Without objection.

CHAIRMAN POWELL. Thank you, Governor Clarida. Next, we turn to the selection of staff officers by the Committee. Jim, would you please read the list of nominated staff members?

MR. CLOUSE. Sure. Thank you, Mr. Chairman. For Secretary, James A. Clouse; Deputy Secretary, Matthew M. Luecke; Assistant Secretaries, David W. Skidmore and Michelle A. Smith; General Counsel, Mark E. Van Der Weide; Deputy General Counsel, Michael Held; Assistant General Counsel, Richard M. Ashton; Economists, Steven B. Kamin, Thomas Laubach, and Stacey Tevlin; Associate Economists, Thomas A. Connors, Rochelle M. Edge, Eric M. Engen, William Wascher, and Beth Anne Wilson, and, from the Reserve Banks, Beverly Hirtle, Daniel G. Sullivan, Geoffrey Tootell, Christopher J. Waller, and Jonathan L. Willis.

CHAIRMAN POWELL. Thank you. Is there a motion to approve these selections?

MR. CLARIDA. So moved.

CHAIRMAN POWELL. A second?

MS. BRAINARD. Second.

CHAIRMAN POWELL. Without objection. Next on the agenda is the "Selection of a Federal Reserve Bank to Execute Transactions for the System Open Market Account." Do I have any nominations?

VICE CHAIRMAN WILLIAMS. I humbly suggest that we would be willing, at the New York Fed, to serve in that role.

CHAIRMAN POWELL. Is there a second?

MR. CLARIDA. I second.

CHAIRMAN POWELL. Without objection. Next—

VICE CHAIRMAN WILLIAMS. Well, wait. We didn't have a chance for the others. [Laughter]

CHAIRMAN POWELL. Next is the "Selection of a Manager and Deputy Manager for the System Open Market Account." Vice Chairman Williams, do you have any nominations you'd like to make?

VICE CHAIRMAN WILLIAMS. I do. I would like to nominate Simon Potter and Lorie Logan to continue in their roles as manager and deputy manager of the System Open Market Account, respectively.

CHAIRMAN POWELL. Is there a second?

MR. CLARIDA. I second.

CHAIRMAN POWELL. Thank you. Without objection. Let's move on to approval of Desk-related governance documents. Simon, would you please introduce the vote.

MR. POTTER. Thank you, Mr. Chairman. As part of the annual review of the Committee's Authorization for Open Market Operations, the Desk requests approval of the Authorization for Domestic Open Market Operations, with a single change that would make clear that small-value tests of rollovers and maturities are included in the $5 billion limit of the operational readiness testing program.

Additionally, as discussed in the memo "Request for Votes on Desk-related Governance Documents" that you received prior to the meeting, the Desk recommends approval of the Authorization for Foreign Currency Operations and the Foreign Currency Directive, without amendment. Staff will come back to the Committee later this year with some proposals for clarifying the language and governance regarding counterparties in the authorizations.

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 Open Market Operations in Federal-Agency Issues in light of the Federal Reserve's programs to purchase agency debt and agency MBS. The SOMA contains a significant amount of agency securities, and the Desk may need to reinvest principal payments on agency securities if their combined monthly total exceeds the current $20 billion cap imposed by the Committee. I therefore recommend a continued suspension of these guidelines. No Committee vote is needed to continue the suspension.

CHAIRMAN POWELL. Thank you, Simon. Is there a motion to adopt the domestic authorization with the proposed revision and the foreign authorization and foreign directive without revisions?

VICE CHAIRMAN WILLIAMS. So moved.

CHAIRMAN POWELL. Second?

MR. CLARIDA. Second.

CHAIRMAN POWELL. Without objection.

Next up is the "Reaffirmation without revision of the 'Program for Security of FOMC Information.' " As we all know, proper attention to information security is vital for allowing this Committee to function well. In light of this, we have a practice of voting on the program every year, regardless of whether there are changes. There are no changes proposed at this meeting. Is there a motion to reaffirm the program without changes?

VICE CHAIRMAN WILLIAMS. So moved.

CHAIRMAN POWELL. Is there a second?

MR. CLARIDA. Second.

CHAIRMAN POWELL. Without objection.

The final item in the organizational part of our meeting is the "Proposed update to the 'Statement on Longer-Run Goals and Monetary Policy Strategy,' " sometimes known as the consensus statement. The only proposed change this year is the usual update to the reference to the median of the projections of the longer-run normal rate of unemployment. With that update, which is based on the December 2018 SEP, the relevant sentence will read "In the most recent projections, the median of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.4 percent."

This is an important document—and I would suggest that, in a moment, we proceed, as we have in the past, with a straw poll of all Committee participants. By doing that, the minutes of the meeting can report the strength of support for the statement. Following the straw poll, we'll have a formal vote of members of the Committee. Before the straw poll, though, I'd like to provide an opportunity for any comments that participants may have about the document.

I'd note that, as you know, we have started a process of collecting input from the public on how we do our job. It is certainly possible that this process will lead to discussions later in the year about substantive changes to the consensus statement. Would anyone like to offer comments at this point? President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. As many of you know, when this particular version was adopted, I voted against it, although historically I have generally supported the idea of a statement of long-run principles and, certainly, an inflation target for the United States. My objection is that I think that the statement, as it stands, is insufficiently forward-looking. It currently says that we would be concerned if inflation ran persistently above or below our inflation target, which is a backward-looking concept. I think the Committee could do more, and should do more, to be forward-looking and say what we mean by "hitting the inflation target over the medium term." However, I don't think we're in a position to make that change today, so I support the statement for today. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Any further comments? [No response] If not, I'd like to now ask for a show of hands of all participants who support the statement with its minor update. [Show of hands] Are there any opposed to the statement or any abstentions? [No response] It looks like the statement receives unanimous support among Committee participants.

Now we need a formal vote of members. Can I ask for a show of hands among all voters that support the statement in its updated form? [Show of hands] Any opposed? [No response] Thank you very much. That completes our organizational items. Let's now turn to "Financial Developments and Open Market Operations." Lorie, would you like to kick us off?

MS. LOGAN.[1] Thank you, Mr. Chairman. I'll begin on the first exhibit of your handout titled "Material for Briefing on Financial Developments and Open Market Operations."

Over the past few months, increased concerns about economic and policy risks, against a backdrop of weakening global growth momentum, have prompted a rise in financial market volatility and sustained declines in risk asset prices and interest rates, as shown in the first column of the top-left panel. Notably, the S&P 500 index remains nearly 9 percent lower since the September FOMC meeting, high-yield credit spreads are more than 100 basis points wider, and nominal Treasury yields are as many as 34 basis points lower, led by a significant narrowing in inflation breakevens.

While financial conditions have eased slightly, on net, since the December meeting, which you can see in the second column of the table, this belies significant volatility observed during the intermeeting period. Investor concerns initially intensified following the December meeting, as the communications were perceived as indicating a lack of policy flexibility in response to tightening financial conditions and growing uncertainty about the U.S. economic outlook. In the last two weeks of the year, declines in interest rates and equities accelerated, as shown in the top-right panel. At one point, markets had even fully priced in a 25 basis point cut to the federal funds target range by early 2020, before retracing.

To better understand these moves, we asked respondents to the Desk's surveys to rate the importance of various factors driving market volatility in the fourth quarter and, specifically, in late December. As shown at the top of the middle-left panel, the most highly-rated factors in the fourth quarter were uncertainty about the U.S. and foreign economic outlooks, perception of the FOMC's reaction function on interest rate policy, and the actual foreign outlook—largely echoing the list of drivers that we

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

have gathered in our discussions with market contacts and that were described in the October and December FOMC briefings.

In the December episode, however, seasonal factors and perceptions of the FOMC's reaction function on balance sheet policy, rose in prominence compared with the quarter as a whole, as demonstrated with a shift from the red diamonds to the gray bars in the second- and third-to-last lines of the chart. The shift in importance of seasonal factors by survey respondents in December is broadly consistent with data and commentary we received. Trading conditions were described as orderly, but some market contacts indicated that price volatility was amplified by typical year-end factors, including thinner market liquidity, tighter balance sheet limits, and staff absences. As you can see in the middle-right panel, benchmark Treasury securities market depth was lower, in line with holiday periods in previous years.

With respect to the change in ranking for the December episode regarding perceptions of the reaction function for the balance sheet, it appears that risk assets have been more sensitive to communications than to the recent realized changes in the SOMA holdings. Indeed, despite the increased market attention to the potential effect of so-called quantitative tightening, our survey respondents rated changes in global central bank balance sheets as a relatively unimportant factor in driving recent volatility, as reflected in the last line of the middle-left panel.

Furthermore, survey respondents generally estimated that the implementation of reinvestment policy had only a modest effect on markets over 2018 and this year. As shown by the red diamonds in the bottom-left panel, the median estimate of the effect on the 10-year Treasury yield, 30-year MBS spreads, and the 10-year term premium, was an increase or widening of 8 to 10 basis points in each year. This is roughly consistent with responses to similar questions posed in September of last year and in 2017 just after the reinvestment policy was announced. As shown in the bottom-right panel, though the distribution of responses was wider, the median estimated effect on the S&P 500 index was a decline of just 1 percent for both last year and 2019.

There were, however, large and discrete risk asset price changes, particularly in equities, during the December press conference in response to remarks concerning the perceived degree of balance sheet flexibility in the future. The moves reportedly reflected market concerns that balance sheet normalization, or perhaps policy more generally, might be inflexible to tightening financial conditions and downside risks to the outlook. A consistent message taken by investors from remarks given by FOMC participants following the December meeting was the emphasis on flexibility in balance sheet policy in the event of adverse economic developments and patience with respect to changes in the target federal funds rate range. These messages were widely cited as contributing to the recovery in risk asset prices later in the period.

As shown in the top-left panel of your second exhibit, survey results suggest that respondents do expect some degree of flexibility in balance sheet policy. That is, if the target federal funds rate range were to stay at the current level or rise, respondents expected the size of the SOMA portfolio to reach a level consistent with the staff forecast for the end of 2019, assuming no change in the reinvestment policy. However, if even a modest number of rate cuts were to materialize by end-2019, respondents expected some change to reinvestment or balance sheet policy. Perhaps unsurprisingly, the expected size of SOMA appears to be larger for lower federal funds target range outcomes. This seems to imply a lower perceived threshold associated with adjusting the rate of redemptions than was perhaps suggested by the 2017 Policy Normalization Principles and Plans.

With respect to patience in rate policy, relative to the previous survey, respondents now anticipate that rate hikes will occur later and there will be fewer hikes in total. As shown in the top-right panel, the median survey forecasts for the most likely level of the target rate now imply increases this year in June and the fourth quarter—compared with March and July in the previous survey—and the median forecasts no longer imply any rate increases in 2020 and 2021.

Meanwhile, probability-weighted mean expectations for the target range at end-2019 declined, as the perceived probability of no further hikes this year rose significantly, as shown in the middle-left panel. Several respondents attributed changes in their policy rate expectations to FOMC communications endorsing a "patient" approach to future policy actions in light of subdued inflation pressures and looming downside risks to the outlook.

With respect to ongoing downside risks, the ECB and the Bank of Japan have recently acknowledged a worsening balance of risks, while market participants continued to see Chinese activity data as suggesting slowing economic growth, even as Chinese policymakers continue to make efforts to support the economy. While there have been some recent signs of progress in U.S.–China trade negotiations, ongoing frictions reportedly continue to weigh on sentiment, and trade policy changes enacted to date are generally viewed as having had an adverse effect on the Chinese economy as well as the earnings outlook for some large U.S. firms. Similarly, while the perceived probability of a so-called "hard Brexit" has reportedly declined, contacts emphasize that significant uncertainty and risks remain as the end-of-March deadline for Brexit legislation approaches. Tentative optimism with respect to China and Brexit contributed to dollar depreciation against the renminbi and pound, respectively, over the intermeeting period, as shown in the middle-right panel, while the shift in FOMC policy rate expectations led to dollar weakness more broadly. Steve will discuss these downside risks further in his briefing.

Looking ahead, survey respondents expect that Federal Reserve communications will continue to emphasize patience and flexibility. In the bottom panel, we have summarized survey respondents' expectations for the statement and press conference. Outside the universal expectation that the federal funds target range will remain unchanged at this meeting, views on changes to the statement language are unusually varied: About half of our survey respondents expect that the reference to "some further gradual increases" will remain, while about a quarter expect the phrase to be removed, though, regardless, respondents expect the language to emphasize patience or data dependence. Similarly, roughly half of the respondents expect risks to be characterized as "roughly balanced," while about a quarter anticipate that downside risks or uncertainty may be acknowledged. Expectations regarding the press conference are more uniform: Nearly all respondents anticipate the Chairman will stress patience or data dependence and reiterate the flexibility of monetary policy or adopt a similar tone as recent Federal Reserve communications.

Beginning on your third exhibit, I'll turn to money markets and Desk operations. Overall, the current implementation framework continues to work well. As shown in your top-left panel, money market rates averaged within the federal funds target range over the intermeeting period, and the technical adjustment of lowering the IOER rate within the target range implemented after the December meeting passed through effectively across money markets.

As shown in the top-right panel, since the December meeting, the effective federal funds rate remained equal to the the IOER rate, and the distribution of trades in the federal funds market was little changed.

Daily changes in reserve balances and the spread between the federal funds rate and the IOER rate continued to show no correlation, as shown in the middle-left panel, suggesting that the federal funds rate continues to remain insensitive to daily changes in reserves supply. For example, over year-end, shown by the red diamond, reserve balances declined by as much as $100 billion, to $1.5 trillion. Nevertheless, unsecured markets showed no visible signs of pressure that would indicate reserve scarcity.

While unsecured rates remained relatively stable over year-end, repo rates, as shown in the middle-right panel, rose in December and increased substantially at year-end. Volatility in repo markets around quarter-ends is not unusual; however, the increase in rates this year was much larger than anticipated. This has been attributed to the combination of typical balance sheet management around the year-end regulatory reporting date and a large net settlement of Treasury securities coinciding on the same day. The effect of these factors was likely exacerbated by the record-high dealer positioning in Treasury securities.

As shown in the bottom-left panel, dealer inventories have risen to historically high levels because of the increase in Treasury security issuance as well as reported selling by foreign official investors. As dealers often fund securities in the repo market, higher levels of dealer inventories have historically put upward pressure on repo rates. Indeed, due to the combination of these effects, repo volumes actually increased around year-end rather than contracting as in prior episodes. That said, there were no reported difficulties in market-functioning, and rates subsequently retraced their increase.

As noted in previous briefings, bank lending of reserves into the repo market has picked up over recent months in order to take advantage of persistently elevated repo rates, suggesting that the banks engaged in this activity had not reached their lowest comfortable level of reserves. For a few banks already active in the repo market, the higher repo rates over year-end represented an attractive investment opportunity, and they increased volumes accordingly. Other banks that had sizable surplus reserve balances did not respond to the higher rates, noting that they either don't make changes to their liquid asset allocation for transitory opportunities or are not currently operationally prepared to invest in repo. Taking this into consideration, as well as the fact that repo rates quickly returned to normal levels shortly after year-end, suggests the temporary spike should not be taken as a potential sign of pending reserve scarcity. Over time, if repo rates remain elevated, we would expect more banks that hold surplus reserve balances to adjust their liquid investment strategies and become operationally ready for repo investments. A few banks may even reconsider what is their lowest comfortable level of reserves. We intend to ask more about these practices in the next Senior Financial Officers Survey, which the staff intends to conduct in February.

As we look ahead, staff projections suggest that reserve balances will remain little changed, on net, over the first quarter of 2019. The decline in reserves from ongoing principal payments on Treasury and agency MBS holdings is likely to be offset by decreases in nonreserve liabilities. As shown in the light blue line of the bottom-right panel, this is most notably expected to come from a temporary reduction in the Treasury General Account to $200 billion on March 1, as the U.S. Treasury will need to comply with debt-limit legislation.

Before concluding, let me note a few operational announcements. First, the Federal Reserve Bank of New York intends to release a notice in early February for public comment on plans to include selected deposits into the OBFR calculation.

Second, the staff has also begun work on publishing a series of backward-looking average SOFR rates in order to support reference rate reform. The plan is to solicit public feedback later this year and initiate publication of these averages by the first half of 2020.

Third, the Desk expects to release a statement about our plans for the aggregation of Ginnie Mae I CUSIPs in February in order to lower custodial fees and improve back-office operations. We do not expect this to draw much reaction, as CUSIP aggregation is a common process and one that the Desk has been involved in previously in the case of Fannie Mae and Freddie Mac securities.

Finally, our plans for upcoming small-value exercises are summarized in the appendix. Over the previous intermeeting period, the Desk conducted only one small-value exercise of outright MBS TBA purchases.

Thank you, Mr. Chairman, that concludes my prepared remarks. We would be happy to take questions.

CHAIRMAN POWELL. Thank you. Questions for Lorie? [No response] No one?

President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. Lorie, just a quick question on your exhibit 1, panel 4, "10-Year Cash Treasury Market Depth by Year." And you may have said it, and I missed it, because I was staring at the chart. What is your "takeaway" from this? I would expect, I think, depth to go up just because there are more Treasury securities outstanding. If you could, walk me through it again.

MS. LOGAN. The dark blue line is representing 2018, and you can see that over time it was a little bit above what we were seeing in 2017, 2016, and 2015. But it dropped precipitously on the year-end, down to levels that we've seen in other previous year-ends. The objective of showing the chart was just to say that depth was low at year-end, and so amplification of some of the price action that we saw is probably a factor that makes sense there. I don't have a chart of how trends have developed more broadly. But I think you would expect volumes to, generally, increase, as the amount of Treasury security issuance has grown. But I think the main point of the chart was just to show you the year-end effects.

MR. KASHKARI. Just the year-end. Okay. Thank you.

CHAIRMAN POWELL. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Lorie, I think chart 3 is particularly interesting this time—the different factors that the respondents indicate could be increasing volatility. I'm thinking back on our December meeting and what this can inform us about. I think the surprise to me was the market reaction to the balance sheet discussion at the press conference.

Now, I wonder if there is anything in the survey, or your discussions with market participants—looking at the chart, the interest rate reaction function is important, but the balance sheet reaction function initially wasn't as important, and then it moved up at the end of the month. I know my own reaction to Jay's answer on the balance sheet was, "Yes, I've heard that before, and I've given answers like that, too." But it seemed to be interpreted quite differently than most of us were expecting. Anything from the survey respondents that could help sort through some of that?

MS. LOGAN. I think in the briefing at the December meeting, Simon showed a chart that had the central bank flows of activity, and I believe President Kashkari asked a question about that. We wanted to emphasize that quantitative tightening (QT) had picked up in conversation, but it was difficult for us to see the effects of the actual change in flows affecting asset prices. Nevertheless, the conversation had really picked up in markets.

I think this chart is interesting because, for those who we survey who may have a broader and stronger understanding of the Fed, the actual flows don't seem to be influencing prices. But the reaction to the balance sheet did increase, and I think that is because there is some dispersion of expectations about how long the balance sheet normalization process is going to continue.

I think we've seen markets coming to a closer estimate regarding the completion of balance sheet normalization than in recent surveys. Last time the survey showed that the median estimate was that the balance sheet would come to an end in Q1 of next year, but there is still quite a bit of dispersion there. And so I think when that communication was in the market, that wider dispersion of audience reacted. And I think, over the year-end, maybe that wider dispersion was the marginal investor, particularly as so many market participants had closed their books going into year-end. And I think there was just a lot more volatility in reaction to that.

MR. EVANS. One question that comes to mind, and it's impossible to answer, because it's a hypothetical counterfactual, but is there a way to get a better idea of the independence of the attention on the balance sheet dynamics, as opposed to the Committee's decision at the meeting to increase the target range, which was expected? But given, perhaps, the marginal investor thinking that wasn't the best move, then on top of that, the rigidity of the balance sheet answer—if, in fact, we hadn't raised the target range, would they have reacted the same way? So, independently they care about the balance sheet? Or is it they're getting caught up together?

MS. LOGAN. My perception from the market participants that we talked to—and we talked to a much wider range over this intermeeting period to better understand it—I think it is the combination—

MR. EVANS. Yes.

MS. LOGAN. —of those two, and whether one is moving in the opposite direction of the other, that is confusing the signal of the main one, which was on interest rates.

MR. POTTER. And I'd like to emphasize that the balance sheet has been coming down; rates have been going up. This was the first meeting where a rate increase wasn't 100 percent priced in. So there was some viewpoint that was a little bit different. It was more like 80 percent. So that was a change in the circumstance.

MS. LOGAN. I think in the conversations we did have with this much wider set of market participants, their understanding about the balance sheet and its connection to the long-run framework is a lot less expert than maybe the people that we're normally surveying here who follow the Fed much more closely. And I think we were seeing the reaction in December of that audience that just isn't able to tie the connection between the balance sheet and the long-run framework. So maybe they had an idea about the magnitude that the balance sheet could be declining that wasn't really in the set of expectations that we're really talking about here.

MR. EVANS. Great. No, thanks very much. These are very helpful comments, and this is the kind of information that we need to be taking onboard. So I appreciate this.

CHAIRMAN POWELL. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I notice President Evans said that he was going to ask an unanswerable question, so I hope mine's answerable. Just to follow up on this a little bit, do markets think that the two tools of monetary policy always have to move in the same direction, otherwise there will be a conflicting signal given and they won't know how to interpret that? Because that's something I sometimes hear from people.

MS. LOGAN. The type of market participant that we're collecting the survey from, I think they understand that one tool could be in the background and the other tool could compensate for that second tool. So I think that, logically, they understand that, but I think for this much broader audience who are less familiar with these things, the two going in different directions would confuse the signal for them, because they're just less knowledgeable and comfortable regarding the balance sheet.

MR. BULLARD. For the Committee, I guess my comment on this is that this is not something that the Committee contemplated previously. I think we always did our projections, and the rates were going to go up to some neutral level, and the balance sheet was going to come down to some appropriate level, and then everything was going to be in steady state. And so I think this is a difficult issue for the Committee. Thank you, Mr. Chairman.

CHAIRMAN POWELL. President George.

MS. GEORGE. Again, on this theme, Lorie, in exhibit 2, under the list of expectations for the statement and the press conference, for the press conference there was an expectation that it would "Reiterate the flexibility of monetary policy." I'm curious whether there was any distinction between the primary tool of interest rates or the balance sheet. Or do you think it encompasses both of those?

MS. LOGAN. In the survey's qualitative answers, I don't think I saw a lot of distinction there between those three themes. I think those three themes represented both of those things.

MS. GEORGE. General flexibility.

MS. LOGAN. General flexibility and patience.

MS. GEORGE. Okay.

CHAIRMAN POWELL. Thanks. President Rosengren.

MR. ROSENGREN. You hear market commentary, occasionally, that certain words trigger particular kinds of program trading, and I was wondering, have we done any surveys to understand which words in our statement actually may be preprogrammed in some of the kind of artificial intelligence programs? You do hear market commentary, particularly about certain correlations that generate subtle signals, and I'm just wondering if our own communications—have we spent any time thinking about whether there are buzzwords, or the use of buzzwords, that are more likely to trigger market reactions?

MS. LOGAN. I agree, we sometimes hear from market participants that a Bloomberg headline or the way it was done may have triggered some activity. So I think that does happen. I haven't myself heard any discussion of that with respect to specific words used by the FOMC.

One interesting thing is, there was one other factor that we included in the survey that's not on here, which was about algorithmic trading, and it didn't change much even in that December period. We've heard some people talk about whether the electronic trading amplified things in December, and that factor didn't really change from Q4 to December, which I thought was interesting.

CHAIRMAN POWELL. President Barkin.

MR. BARKIN. There have been some commentators who would suggest that our balance sheet moves have, in fact, started to tighten the market and have, in fact, contributed to volatility. I know that's not our view for the most part. If you took a generous view of those comments, what would be the indicators that would best support that situation, just to allow us to see the other side?

MS. LOGAN. There is a chart that's been widely circulated in the market that shows the MSCI World Equity Index and central bank holdings. And, if you do that chart just right, it shows a high connection between those series. There are a lot of questions about that chart, particularly the inclusion of emerging market (EM) foreign reserves holdings in the central bank holdings. But I think that market participants who believe that story use that chart.

We tried to get at that more systematically by asking these questions in panels 5 and 6, and for those that we're surveying, they're not seeing those effects from those flows. But if you look at panel 6, there are those outlier dots there, and so even in our survey there are a few participants who think the effects could be quite large.

On the basis of talking with some of those participants, though, I think it can be just the investor beliefs that affect risk sentiments and may not necessarily be the actual flows. But I think the best chart that's been going around is that chart giving the MSCI World Index and central bank holdings.

MR. LAUBACH. Mr. Chairman, if I can just quickly add one observation: Participants have in the past, of course, communicated that, in fact, balance sheet reduction is removing accommodation. So there are estimates out there—I remember that Chair Yellen in early 2007, in one of her speeches, made that pretty clear—and we have FEDS Notes out there, et cetera. I know that now some of the commentary makes it sound as if this was all news. That's not quite accurate. That point has been made by participants.

MS. LOGAN. Yes, and I think in chart 5, with 10-year Treasury yield effects and the term premium, those line up to what the estimates in the research have shown. So the median market participant in the survey is giving back answers that line up with those research studies, the actual effects.

CHAIRMAN POWELL. President Daly.

MS. DALY. I just wanted to have a clarification and make sure I understand. I'm trying to figure out how much signal to take from the disruption that happened after the use of the term that we've been using for a while in the press conference. And I thought you referenced the fact that some of the investors closed their books at the year-end and so the marginal investor might be some of these individuals who have less understanding of the Fed, moving the market more than we normally would see. So do you expect that to have amplified what we saw and then go away as we move off this year-end? And so should we be less worried about our future communications being so misinterpreted and then having real effects? How should I think about that?

MS. LOGAN. With respect to the year-end story, I was trying to say that I think there was some amplification, but I still think there were some people who were reacting to the communication itself. And I think that President Bullard's question is where I would go, that when the two tools were working in the same direction, it was really in the background, but then when they were working in different directions, I think the balance sheet reduction schedule maybe came to the forefront, particularly for investors who don't understand the connection of the balance sheet to the long-run implementation framework. For those who don't have a sense of how the balance sheet would likely unwind in order to transition into the long-run implementation framework, maybe they had different estimates of where the balance sheet was ultimately going to be.

MR. POTTER. Just to help—If you go to panel 8, you can see the market path around the December FOMC meeting, and that was pretty flat. So this was a point, as President Bullard said, where there was an option for the two tools to be not necessarily working in the same direction, and that might be what amplifies it.

MS. DALY. Okay. That's helpful. Thank you.

CHAIRMAN POWELL. President Kaplan.

MR. KAPLAN. Just to follow up on all of this, I might suggest—and I think you're already having these conversations—a contextual question, away from the Fed. There's a lot of discussion in the market about how two-way liquidity today is substantially lower than it was 10 years ago. And then there are a number of hypotheses as to why. One is, is it algorithmic trading? Is it ETFs? There's lately been a discussion of the fact that Treasury issuance is going to be substantial, and that's going to take money out of the private sector.

And this subject comes up a lot more when the market is going down, and when earnings are going down, than when they're going up, and we're in one of those periods. But I do think, for me, I would find it useful—away from the Fed, questions about us—what is, in fact, going on with two-way liquidity in these markets? Because I think that's the context in which the Fed balance sheet then enters the discussion. And I think it reached its zenith in December, but I don't think we've seen the last of it.

And, no, I don't think this is the last episode, because—and it could be related to the Volcker rule, or could be other things—but two-way liquidity in these markets, from the numbers I've seen, is substantially lower. Then the question is, do you see the same thing, and why might that be going on?

MS. LOGAN. I think Mike Kiley is going to talk a little bit about this in the financial stability briefing later, and I believe he has a chart that's going to show some decrease in liquidity measures for equities over the broader Q4 period, not just December.

We do hear a lot of commentary from market participants about, in a period of stress, with dealers less willing to hold inventory, that would amplify price action. But I would say that I was surprised by the focus among the respondents to this survey. There was some seasonality as an effect from amplification, but some of those other factors didn't come up in higher ratings.

MR. KAPLAN. I would back off to maybe 50,000 feet and, maybe in your next questions, take a longer term—not about the past quarter, but over the past several years.

MS. LOGAN. Yes.

MR. KAPLAN. What are the market structure changes that are going on? I think this may have a lot to do with that, before you even get to the role of the Fed.

MS. LOGAN. I think Mike Kiley will talk a little bit about that.

CHAIRMAN POWELL. President Kaskari.

MR. KASHKARI. Thanks. I'm sure you're ready to move on, Mr. Chairman. One quick follow-up. I'm stuck on the notion that people perceive these two tools as working in opposite directions because, when I look at this, I'm trying to understand: How can the balance sheet roll-off explain low rates—low Treasury yields—and high spreads?

The way I can explain that is, if people looked at the increase in December, and our commitment to the roll-off, as an overall "hawkish" signal, that the Committee has a "hawkish" posture, that would cap inflation expectations—so, keep rates low—and then that would affect corporate earnings, which would then lead to higher spreads. So I guess I looked at it as just a hawkish interpretation of the Committee, not that these two tools were working in opposite ways. I'd welcome your response, because I may not have it right.

MS. LOGAN. I think that's what I was trying to get at, in talking about when the two tools are working in different directions and you get information about one. Maybe it reshapes your thinking about how the reaction—

MR. KASHKARI. But I'm saying they're working in the same direction. I'm saying, we raised rates in December, and the statement says "further gradual increases," and the Chairman says—which we have all been saying—"the balance sheet runoff is going to be like paint drying. The balance sheet is just going to keep rolling off." I think, in the context of a somewhat weakening global economy, people said, "Wow, the Committee is really 'hawkish' overall," and then that led to these lower rates and higher spreads.

MR. POTTER. The version that someone said to me was, an 80 percent chance that rates were going to go up at the meeting, and 20 percent that the balance sheet would look more flexible at that point. You came out of the press conference with a 100 percent likelihood of a rate increase and zero flexibility on the balance sheet, in the perception of these investors. So that is one version of it being more "hawkish." I'm not sure that that completely captures how complex it might be to communicate about both tools.

MR. KASHKARI. I see.

CHAIRMAN POWELL. I have a question that relates to how to operationalize all of this in going forward. So this group of people, very focused on QT, seems to have reacted positively to the message that "We hear you, we're listening carefully, and we don't agree with you, but if we do come to a conclusion that any aspect of normalization is presenting problems for the achievement of our goals, we wouldn't hesitate to make a change." They seem to have reacted well to that. So the question, I guess, I have for you is, in your discussions, if these are people who, to some extent, aren't close Fed watchers, but are more learning about this—are they learning about this? In other words, in your conversations—all of the newsletters that we all read support our position. Do they read these newsletters? Are they coming around, or are they out there waiting, and still believing that they're right and still wanting satisfaction? I don't know if you can shed any light on that.

MS. LOGAN. It's hard for me to say. I would say, in some of the conversations, even within an individual firm—if you talk with different trading desks within an individual firm, you have the same strategist writing the piece that's shared broadly with them, and you'll get very different answers to some of these questions. For some of those who believe the QT story, I'm not sure they changed their views. Maybe they got more comfortable with the language, but I think they still, in the background, may be thinking that the QT part of it does matter.

CHAIRMAN POWELL. Let me just say, a couple of weeks ago we had two very well-known economists from major firms—who completely see this as we do—come in and deliver a message from their risk people, which is the QT message. I'm just delivering this message. If you ask them outside the meeting, they say, "No, that's not how we see it at all," but that's how these people see it. So it seems to me that the working hypothesis has to continue to be that they still believe this, and they are still out there and are looking for some kind of satisfaction. And that satisfaction would come in the form of stopping, or slowing the pace of balance sheet shrinkage, I suppose, as opposed to something else.

MR. POTTER. Well, there could be some absolute truth out there, but the hope that we could pass on absolute truth might be difficult.

CHAIRMAN POWELL. Darn. [Laughter] No, but I'm saying—anyway, this is a crucial question that's very hard to answer, I realize.

MS. LOGAN. I would just reemphasize, I think, the point that you made: I think within an individual firm, if the person believed in the QT story, I think they still—

CHAIRMAN POWELL. Well, the person making the investment decisions is not our friendly economists sitting at this table who are visiting with us. It's the people back in New York who are actually trading. And that's who they are speaking for.

MR. POTTER. And they all respect that chart and the fact that they can see risk assets move a lot when there are any words about the balance sheet that some people don't understand.

CHAIRMAN POWELL. President Bostic.

MR. BOSTIC. Yes. I guess on this point, for me the question I wrestle with is, how do we weight across the different views? I don't know that it's reasonable to expect that we should get 100 percent consensus supporting our take on the world, and so there has got to be some handicapping across the distribution of viewpoints, and each of us has to make a decision about how we're going to take that information to inform us on what our right course of action is. And for me, I'll say I haven't seen the QT argument rise to the level of broad-based consensus, that it gives me very much concern. But that's just my perspective, and I think each of us has to weigh that.

CHAIRMAN POWELL. I'll just say, I'm not weighing whether it's persuasive. I'm weighing whether it will affect market conditions in a way that interferes with our normalization process. That's the question for me. I'm not going to wind up agreeing that they've got this figured out. They seem to be reacting to a signal about tightening, I think, that they see it as too much. It's sort of a signaling channel, if you will. At least that's how I see it.

MR. POTTER. I would just add that we don't completely understand what asset purchases do for the balance sheet. I would say, over the past six weeks, I might have put a small weight on some of these people. My weight has actually gone up, but I want to understand a little bit more why it has this impact. I'm not saying it's a big weight, but we should be humble in this, because we don't completely understand all of the channels by which asset purchase affect financial markets, and then declines in assets as well.

CHAIRMAN POWELL. President Evans.

MR. EVANS. And that was really the point of my initial question, because the other thing that has happened in the time that we started to pay more attention to QT is that we've gone out and said that we've got to be more patient, and the entire trajectory of rates is now more in question. So it's those two things together that make disentangling the real contribution of whether it was QT, or was it the entire view "I'm nervous about the stance of monetary policy. Since you've said you've raised rates in December, I'm really worried about the balance sheet." But now, looking forward with the rate path, it might be that this isn't quite as big of an issue. I don't know the answer to that, and that's why—

MR. POTTER. The one difference is that, in the taper tantrum, interest rates moved up, and risk assets moved down. This time, interest rates went down, and risk assets went down. So that's something that we should be looking at and studying. And, as President Kaplan said, we need to talk to more people to understand if there is something that we could explain better, or there is a feature of the market that is producing this, or was it just some freak of a particular part of December.

MR. KAPLAN. My sense is there is a structural change going on in the market, independent of the Fed, and then we walk into that. But if we did some more diagnostic work, I would support that.

CHAIRMAN POWELL. Last point. I'll get into this more later. But, to me, the real echoes of the taper tantrum here were market participants clearly conflating the taper with interest rates. And, try as we might, it was very hard to fix that. We just had to address it as a reality.

Anyway, this has been very interesting. Thank you very much.

Next we need a vote to ratify the domestic open market operations conducted since the December meeting. Do I have a motion to approve?

VICE CHAIRMAN WILLIAMS. So moved.

CHAIRMAN POWELL. Without objection. Thank you. And now we move to our special topic of "Long-Run Monetary Policy Implementation Frameworks." And we'll begin this with briefings from Simon and Trevor. Simon, would you like to begin?

> MR. POTTER.[2] Thank you, Mr. Chairman. We will be referring to the handout labeled "Material for Briefing on Long-Run Framework for Policy Implementation and Transition Plan."
>
> Since late 2008, the Federal Reserve has implemented interest rate policy using administered rates and has not actively managed the level of reserves to achieve the FOMC's policy rate target. For some time, the FOMC has indicated that, over the longer run, it wants to operate with asset holdings that are no larger than necessary for the efficient and effective implementation of monetary policy. In this briefing, I will provide an assessment of how effective the current regime has been, then discuss how the FOMC can use the efficiency criterion in an ongoing manner to judge the appropriate level of reserves and thus operate with asset holdings no larger than necessary. I will conclude by discussing how you might transition from the current pace of reserve decline to one that will facilitate the FOMC's assessment of appropriate reserve levels and other decisions it will need to make about the portfolio

[2] The materials used by Messrs. Potter and Reeve are appended to this transcript (appendix 2).

over time. Trevor will then discuss how the Committee might communicate to the public about the progress on balance sheet normalization.

The standard interpretation of an effective implementation framework is that it provides excellent control of the central bank's policy interest rate, strong transmission of the policy rate to other money market rates, and it more generally helps ensure that the monetary policy stance is reflected in broader financial markets. The current regime has been, and is expected to remain, a success along these dimensions. Over the past 10-plus years, there has only been one day when the effective federal funds rate was outside the FOMC's target range. Over this time, there have been dramatic changes in money markets, regulation, and financial institutions' business models. Further, the level of the reserves in the banking system has ranged widely. The regime has been adapted over time in light of experience—these adaptations including, most notably, the introduction of the overnight RRP facility to provide a firmer floor for all money market rates. A critical test of the effectiveness of the current system was met in the Federal Reserve's ability to raise rates smoothly in December 2015 in a situation of around $2.5 trillion of reserves in the banking system.

As reserves have come down from their peak of $2.8 trillion and overnight rates have moved substantially above the zero bound, concerns raised by academics and some money market participants that the regime would be less effective, with increased dispersion across money market rates, have not been realized. Indeed, as shown by a measure of dispersion in individual trades in money markets in panel 1, the effectiveness of the regime has increased. An important adaptation behind this improvement last year was two technical adjustments of the location of the interest rate on reserves in the target range.

The main strength of the current system is that it works effectively with a wide range of reserve levels. The effectiveness criterion does not, however, help you judge the appropriate level of reserves. For this, the efficiency criterion becomes relevant. There are a number of perspectives from which you could consider efficiency, all of which have been touched on in previous staff analyses and in your own discussions. First, from the perspective of financial institutions transacting in money markets, a sufficiently high level of reserves allows these institutions to avoid inefficient efforts to economize on reserves or plan how they would respond to shocks that would make reserves temporarily scarce. Second, however, keeping a too-high supply of reserves will weaken money market participants' incentives to reform business models to align with liquidity regulations and, due to market segmentation, will reduce incentives for competition. Third, from the perspective of the central bank, there are operational and communication efficiencies associated with not having to engage in active management of the level of reserves. In the current regime, increases in reserves do not have to be managed. Operational efficiency will need to assess whether reserve-adding temporary open market operations should be used to enhance rate control in the face of potentially large transitory decreases in reserves, such as those we observed on the recent year-end.

These considerations suggest providing a buffer of reserves above financial institutions' minimum comfort level. The appropriate size of this buffer will depend on the variability and predictability of autonomous factors affecting reserves, on how efficient temporary open market operations are in enhancing rate control, and on your view of the efficiency costs and benefits of operating with a smaller balance sheet on average versus conducting open market operations more frequently. We expect to learn more about these dynamics as we go forward, but I want to stress that this learning and adaptation will be ongoing well after balance sheet runoff has ended.

Financial institutions' demand for reserves remains another topic about which we will continue to learn. In various memos, the staff has described how the Committee can use surveys, structured dialogs, money market activity, payments activity, and patterns of behavior in Federal Reserve accounts to assess the minimum comfortable level of reserves. It is important to stress that U.S. money markets are very dynamic, and this minimum comfortable level is likely to vary over time as market participants innovate more efficient ways of transacting with each other. In addition, improvements in regulation and business models have led to a situation in which minimum comfortable levels are likely to vary even without innovations—for example, because of temporary distributional frictions. This is another reason why, in the longer run, for operational efficiency you are likely to need some buffer over a static minimum comfortable level. It also means that it is quite possible that minimum comfortable levels could decline over time as business models adapt.

As shown in panel 2, reserves have already declined $1.2 trillion from their peak and, on the current trajectory of asset redemptions and growth in other liabilities, are likely to decline a further $300 to $400 billion by the end of the summer. Because of seasonal variability in autonomous factors, this decline will not be smooth, with much of the decline starting in the spring. The staff's current estimate of the minimum comfortable level of reserves needed by the system is about $800 billion. As indicated in a memo for the November meeting, one very rough estimate of the buffer is $200 billion. This reflects just one potential buffer level that could balance the tradeoffs of balance sheet size and efficiency.

As the staff has emphasized, these are estimates and we continue to assess different approaches to the buffer. As we learn more about the tradeoffs of different buffers and relevant developments in business models and money markets, we will report to you. In view of the uncertainty associated with these estimates, at some point it may be prudent to slow the decline in reserves to give the Committee more time for learning about the appropriate level of reserves without creating unintended periods of reserve scarcity that could result in market volatility, and also to allow financial market participants time to adjust their business models. A simple way to slow reserve decline without sending any signal about the stance of policy is to use growth in currency and other nonreserve liabilities to reduce the supply of reserves, similar to the period between October 2014 and September 2017 when the par value of the SOMA was held roughly constant, as shown in panel 2.

A memo sent to the Committee over the intermeeting period examined three possible dates at which to start slowing the pace of reserve decline. All of these dates are likely to imply reserve levels above $1 trillion, as shown in panel 3. The staff's current assessment is that slowing reserve decline by October 2019 would enhance your ability to learn about the appropriate level of reserves and allow time for any necessary adaptation in the operating regime. Trevor will discuss some other considerations related to communications.

The slowing of reserve decline will require a change in the current reinvestment policy to hold the par value of the SOMA roughly constant. In the case of Treasury securities, the staff would propose rolling over all maturing Treasuries at auction. This approach is fully anticipated by markets. In the case of MBS, the issues involved are more subtle. As the Committee intends to return to a portfolio primarily comprising Treasury securities, the market is expecting agency MBS paydowns to be reinvested into the secondary Treasury securities market. However, there has been no direct communication by the Committee about how a reallocation strategy might be implemented. In particular, the public does not know whether the Committee would maintain its approach of reinvesting paydowns above $20 billion into agency MBS and, for the portion below $20 billion, what sector of the Treasury securities market the Committee would direct the Desk to purchase in. The public is not expecting that the Committee will announce in the near term more precise details on the longer-run desired duration of its Treasury securities portfolio. And it seems important to avoid giving potentially misleading signals through any decisions related to the reinvestment of MBS paydowns. Thus, we recommend that any near-term communications about agency MBS paydown reinvestments maintain flexibility for the future decision on long-run composition. The staff intends to provide more briefings on the long-run portfolio composition at upcoming FOMC meetings. In addition, the staff will soon present to the Committee options for how it might direct agency MBS paydowns into the secondary Treasury market. Some of these options would allow the Committee to learn more about how to operate most efficiently to reach its eventual desired composition.

A harder, but perhaps less consequential, issue is whether to maintain the cap on runoffs in the MBS portfolio. Under current interest rate projections, the cap is out of the money. But, this summer, there is a reasonable probability that paydowns will come in slightly above the cap. Recall that the cap was designed to reassure mortgage investors that flows from paydowns to the SOMA portfolio needing funding in the private market would be gradual and predictable. There was a very small market reaction to the discussion of MBS sales in the December minutes, indicating some sensitivity to news about the likely path of the SOMA MBS portfolio. That said, relative to some earlier estimates of the likely effect of the agency MBS runoff on spreads, most market participants currently seem to expect a more muted effect. I would note that, as shown in panel 4, after this summer, the probability of paydowns exceeding the cap is low unless interest rates decline substantially.

To conclude: The current system has served, and will serve, the Committee well. We will learn more about money market dynamics over the next few years, allowing the Committee to adapt the system to ensure it remains efficient and effective with the smallest asset holdings.

MR. REEVE. Over the past five years or so, the Committee has had extensive discussions about policy implementation and normalization. Out of these discussions have come many important decisions and communications. As noted at the top panel of your next exhibit, in 2014, you released your Policy Normalization Principles and Plans, which specified that the first steps of the normalization process would involve raising the target range for the federal funds rate, with the gradual reduction in the balance sheet to come later. In 2015, as the timing of liftoff came into view, you released specific details for how you would raise the target range for the federal funds rate for the first time in an environment of superabundant reserves. And in 2017, you provided additional information on your approach for reducing your securities holdings. These policies and communications have been successful, as the process for both raising interest rates and reducing the balance sheet has gone very well, effectively promoting your maximum employment and price stability objectives.

For more than a year, your balance sheet reduction program had indeed been as interesting for the public as "watching paint dry." But as the process has continued, and, as Lorie noted, market participants have become increasingly attuned to the future path of the balance sheet. A key concern among many market participants is how far you will allow the balance sheet to shrink, which, of course, depends importantly on your choice of how to implement policy over the longer run. Accordingly, you may judge that now is a good time to provide greater clarity about your preferred approach for implementing policy and to set the stage for future communications that would explain the plan for transitioning the balance sheet to the longer-run operating regime.

Based on your previous discussions, there appears to be a general consensus for continuing to operate in a regime like the current one, in which control over the federal funds rate and other short-term interest rates, is exercised primarily through the setting of the Federal Reserve's administered rates and in which the quantity of reserves is sufficient to ensure that active management of the supply of reserves is not required. If this is the case, then it would seem advisable to announce a decision on the operating regime sooner rather than later so as to reduce unnecessary uncertainty. As noted in the middle panel of your exhibit, the first bullet of the "Statement Regarding Monetary Policy Implementation" would make it clear that you intend to continue to implement policy with the current framework.

The second bullet of the statement reaffirms and modifies some important principles from previous communications. The first sentence, which is taken directly from the 2017 addendum, reiterates the primacy of interest rate policy as the active tool of monetary policy. The second sentence, however, replaces the similarly placed sentence from the 2017 addendum, which stated that "the Committee would be prepared to resume reinvestments . . . if a material deterioration in the economic outlook were to warrant a sizable reduction in the Committee's target for the federal funds rate." This sentence has recently received some scrutiny, in that, viewed in isolation, it could be taken to say that the FOMC would never stop shrinking its balance sheet unless the federal funds rate had been cut significantly. The new sentence, which draws on the 2014 principles, states that "the Committee is prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments." This formulation is not intended to signal that the balance sheet is an active tool of monetary policy. Rather, it is meant to provide the Committee with the flexibility to alter the details of the normalization plans as needed during the transition to the longer-run operating regime and to avoid circumstances in which balance sheet policy and interest rate policy could be working at cross purposes. The last sentence of this bullet, which also appears in the 2017 addendum, reaffirms that "the Committee would be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the federal funds rate."

While it is always difficult to gauge how statements like this will be received by the public, the substance of this communication seems unlikely to come as a surprise because the minutes of previous meetings going back to 2016 have already conveyed your general views on your implementation framework. The clarification provided by the second bullet also seems unlikely to elicit a notable market response, as it essentially confirms communications from policymakers over the intermeeting period. Indeed, as Lorie discussed, results of the Desk surveys suggest that respondents already expect some degree of flexibility in balance sheet policy.

Having taken a decision with regard to the operating regime, the next question is how the Committee will transition to the longer-run size of the balance sheet and quantity of reserves. The draft communication titled "Revised Policy Normalization Principles and Plans," summarized in the bottom panel of your exhibit, provides an early take on how you might choose to explain your approach at some point in the future. Announcing a date on when the balance sheet will stop shrinking should allay concerns that the Committee might allow the process of reserve decline to go too far or too fast, potentially resulting in heightened volatility or other market stresses.

Regarding the choice of a date, a relatively early one, such as the end of June, could signal undue concerns about the implications of balance sheet reduction and would likely lengthen the time it would take to reach your desired longer-run level of reserves. Conversely, a later date, such as the end of December, could increase the risk that reserve scarcity is reached while the balance sheet is still contracting or could amplify year-end pressures in money markets. To balance these risks, you may judge the appropriate date to be the end of September, which would mark two years of balance sheet reduction.

Another issue to settle, as Simon discussed, is whether to maintain the cap on MBS paydowns during the transition period. On the one hand, such a cap could provide some insurance to the mortgage market in the event that a significant drop in interest rates leads to a surge in prepayments. On the other hand, announcing the retention of the cap adds to the complexity of the revised principles and plans and signals a somewhat more active stance with regard to transacting in the MBS market. Moreover, the economic consequences of the cap are likely small, and, in the event that interest rates drop significantly, you may be reconsidering a broader set of policy issues.

Announcing a set of revised principles and plans would likely go a long way in reducing uncertainty about the course of the balance sheet over the next few years. The current draft, however, leaves open some key policy decisions that you do not have to settle now. Importantly, the decision to stop shrinking your asset holdings does not fix the quantity of reserves. As currency and other nonreserve liabilities grow, reserve balances would gradually decline to whatever level you judge to be consistent with the efficient and effective implementation of monetary policy. Indeed, subject to remaining in the current operating regime, these draft principles and plans have no bearing on the longer-run quantity of reserves; they only pertain to the path you choose to get to the longer-run destination. And once that destination is reached, as the draft notes, the SOMA portfolio will hold no more securities than necessary for efficient and effective policy implementation, consistent with your earlier guidance.

In a similar vein, the draft revised principles and plans do not specify how you will structure your asset holdings other than to note that after you stop shrinking the balance sheet, principal payments from MBS holdings will be reinvested in Treasury securities. This should not come as much of a surprise to the public given your previously stated intention to hold primarily Treasury securities in the longer run—an intention that is repeated in the revised principles and plans.

The draft revised principles and plans maintain continuity with previous communications by repeating some points that remain relevant. In addition to the intention to hold primarily Treasury securities in the longer run and to hold no more securities than necessary for efficient and effective policy implementation, the draft repeats "the Committee's view that limited sales of agency mortgage-backed securities might be warranted in the longer run to reduce or eliminate residual holdings."

On the basis of your discussion today, we plan to circulate for comment an updated draft of the Revised Policy Normalization Principles and Plans during the intermeeting period. The remainder of your handout contains the draft communications that you received yesterday, along with the questions for discussion. We would be happy to answer any questions.

CHAIRMAN POWELL. Thank you. Questions for Simon or Trevor. President Rosengren.

MR. ROSENGREN. So, looking at what we got over the weekend, it looked like there was a word search that deleted any form of the word "abundant." It doesn't appear in any of these documents that you just discussed. It wasn't in the paragraph that we had. And I think it relates a little bit to the conversation we just finished, which is, when we're trying to do something that we haven't done before, communication becomes really important. So if I were to say the words "quantitative tightening continued to September," or instead I say, "going forward, supply abundant reserves," those two things may be synonymous, but they may not be viewed the same by people who are listening. And so I'm just wondering why we're choosing not to use the word "abundant,—which I think actually had some fairly consistent meaning around the table before.

When I read that first bullet in the statement regarding monetary policy implementation, I interpreted the reference to implementing policy in a manner that active management of the supply of reserves is not required as synonymous with the word "abundant." But the absence of the word "abundant" means that it's open to interpretation, so that the current framework could be interpreted differently. And the problem with the word "abundant," I think, is a political problem—that some view "abundant reserves" as politically explosive words. But I do think markets also listen to the word "abundant" as it's commonly used. And so if we try to avoid using the word, we may not have the same reaction in the markets as we otherwise would have.

I know that there are different constituencies that are listening to the same statement and interpreting it in very different ways, but I do think we have to think very carefully about whether we want to talk about a current framework that doesn't talk about "abundant." So what are your views on whether "abundant" is too explosive a word to use and whether synonyms for "abundant" might be clarifying, in terms of what "current framework" means?

MR. REEVE. Those are all great concerns. I'll take a stab at addressing that and welcome other thoughts. One issue regarding the use of the word "abundant": You noted the sensitivity that word may connote in certain circles in which preferences for a smaller balance sheet may still be quite firm, and that the word "abundant" would tend to convey some notion of profligacy or excess. And so that may be counterproductive to the overall message of the transition plan and long-run framework.

But—going beyond that, to something perhaps a little more substantive—the word "abundant" is, in and of itself, fairly ambiguous and doesn't really—when we talk about what an abundant reserves framework looks like, we end up defining what we mean by "abundant." And those, in fact, are the words that are in the first bullet, in the sense that the definition of "abundant" is a regime in which you don't need to actively manage the supply of reserves. So I was viewing the communication as more directly going to what you mean by "abundant" without getting into what "abundant" means or does not mean.

CHAIRMAN POWELL. Vice Chairman Williams.

VICE CHAIRMAN WILLIAMS. I actually had the same view that you have, Trevor, that we want to explain how we're going to operate the system. But I think President Rosengren does bring up an important point. We do talk in jargon here quite a bit. We've talked about a floor system quite a bit in the past few years, and we have also stopped doing that. I think people actually thought they knew what was meant by "abundant reserves." But I do think that the point is, after hearing that comment, "the quantity of reserves is sufficient to ensure"—you know, "sufficient to ensure" could be open to some interpretation. So maybe there's a way—I won't suggest "abundant," but "sufficiently," "plentiful," or whatever, something—of getting that in there. Because I think "sufficient to ensure"—as someone who, from a mathematical point of view, is clear, but maybe it is not as clear as we could be.

I do think, though, your point that we want to actually explain what it means—and what it means is, we're going to use administered rates to set policy, just as we've been doing for the past decade.

CHAIRMAN POWELL. Can I offer a thought, which is that I think there are diverse views on this around the table, and maybe we can actually take care of this as part of our go-round? If people would agree to that, because pretty much everybody around the table will have a view here. So we'll have a separate go-round on the word "abundant." It's a very good question. Is that acceptable? You can have a two-hander, President Mester.

MS. MESTER. Can I just ask a clarifying question? I think we've used "abundant" in the minutes. Am I right?

MR. REEVE. The November minutes definitely used the word "abundant."

MS. MESTER. Okay. Thank you.

MR. POTTER. December didn't.

MR. REEVE. December did not.

MS. MESTER. Okay. But we have used this nomenclature before in our official communications.

CHAIRMAN POWELL. Further clarifying questions, or are people dying to have this discussion separately, too? I mean, I'm flexible here.

MR. EVANS. Could I just ask one question?

CHAIRMAN POWELL. Yes, Charlie.

MR. EVANS. President Mester touched on something that I noticed, too. It's in the November minutes, but not December. Has this received any market commentary at all, the lack of appearance of "abundant" in December when it was highlighted early on in November?

MR. POTTER. No. Just to be clear: If the Committee intends to continue to implement monetary policy, everyone is supposed to think, "They've been doing something for 10 years; they're going to keep on doing that." And, depending on how people then interpret the minutes, the press conference, and the next meeting, they're going to understand pretty quickly what this means, subject to the learning that you will need to do about where you want that resting point to be and how you communicate and understand that as you go forward, because, as I said, shocks are going to keep on hitting. So I think the crucial thing here is that a decision has been made to continue in the regime you've been using for over 10 years.

CHAIRMAN POWELL. I have a clarifying question, which is: In this world, does "abundant" really just mean the size of the buffer? I mean, does it boil down to the difference between "abundant" and "scarce"? Can you just say that it's the buffer if you're thinking about a $200 billion buffer? Because, presumably, you're scarce at that point, and you're not scarce at $200 billion and above. Or is that too simplified?

MR. POTTER. I want to be careful to—

CHAIRMAN POWELL. What would be the "delta" in size between the two regimes? That's really my question.

MR. POTTER. That's a decision that I think you will be making, and I would be very careful in using the $800 billion number as the one that sticks. In the memo that we sent to research directors, we stated that we heard that one big bank is reassessing that number, and that was up; I know another bank wants to reassess it down. What we will learn is how we can efficiently operate the system without superabundant reserves. And part of the point of my panel two was that we're moving from supersuperabundant reserves to superabundant [laughter] to abundant. And I'm not quite sure how to capture that, because it's definitely a better situation for money markets—if there are no other considerations—to have the smallest amount of reserves that allows you to operate the system. I think the system is more effective than the other one, but there is no reason to have extra reserves in that system, once you've made it as effective as it can be.

MR. REEVE. If I could just add one point on that question. I think it probably is a bit of an oversimplification to think that "abundant" is really just about the estimate of this buffer, because financial institutions' demand for reserves is going to depend on the rate environment in which they are operating. And so, in a different rate environment, they might have a different demand for reserves—they likely would have a different demand for reserves—which would then sort of shrink that first piece of reserve demand that we're talking about. But, you know, that's just an added margin of adjustment in the system that we don't really understand all that well.

CHAIRMAN POWELL. Okay. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. Just to stick with this question: I think that the relevant comparison and the reason this is so hard to communicate is that the pre-crisis regime had only $30 or $40 billion in reserves in the system. We're talking about increasing that by a factor of 30 or 35. And so this leaves a wide-open issue about why you need so many reserves, and so I think that's the difficulty. For most older Wall Street hands, that's what they're thinking of. If you say "minimal" or "lowest level possible" or "a little bit bigger than lowest level possible," it's an order-of-magnitude issue, and it seems to me one thing that's not in this discussion is that the reserves are being used to meet the liquidity coverage ratio. And so this is a very different situation from what it was pre-crisis, which does not have much to do with these buffers on other dimensions. So I just thought I'd make that comment.

I do have one clarifying question, if I could ask it, Mr. Chairman. I'm looking at exhibit 2 here. It says, "Key policy issues remaining: Longer-run composition of asset holdings." Then it says in the next bullet point, "Continuity with previous communications: Intention to hold primarily Treasury securities in the longer run." So it would seem like our previous communication has already suggested that there's consensus on the Committee, and are we saying that that's an open question or not an open question?

MR. REEVE. No.

MR. BULLARD. Or what is the point there?

MR. REEVE. There are many other dimensions of the longer-run composition of the asset holdings that you have not specified. So, it's absolutely true that the intention to hold primarily Treasury securities in the longer run is still there, and that leaves open many decisions about, say, the maturity composition of those Treasury security holdings and the amount of duration on the portfolio. And there are also decisions regarding, as also noted, limited sales of MBS, future decisions you may wish to consider in reducing the size of the MBS portfolio, or making a decision to just let it passively roll off.

MR. BULLARD. If you're going to hold primarily Treasury securities in the longer run, presumably the MBS holdings would drift away in the longer run.

MR. REEVE. It would take a very long time.

MR. POTTER. It would take a long time, and the issues about how quickly you want to get to that long-run distribution of Treasury securities that we are hoping to present to you—you can get there in 20 years, or you can get there in 5 years. There are different choices.

MR. BULLARD. Thank you.

CHAIRMAN POWELL. Thank you.

I would encourage everyone to offer your thoughts on "abundant" as we go around the table. I'm going to actually begin this round with my own comments, and I want to start by thanking the staff for a very helpful analysis of our options. I'm looking forward to everyone's comments, but I'm also going to lay out my own thinking here. This has been an unusually challenging intermeeting period, as we lost a couple of weeks to holiday vacations and that we nonetheless needed to make some consequential changes, both in the stance of policy, and in the normalization plan. I want to thank everyone for your patience and your persistence as we work through this together, and I thank each of you also for your thoughtful input on these tricky issues.

As I will describe, I think we've actually come to a very good place regarding balance sheet normalization. My own thinking on balance sheet normalization has evolved since the December meeting, as I suppose is obvious. From our decision in December 2013 to taper asset purchases and wind down QE3 and through most of last year—a period of almost five years—the markets exhibited little sensitivity to news about our balance sheet. In my thinking, that meant that we could take our time and proceed gradually and predictably in moving toward the end stage of the normalization process. Of course, markets weren't going to ignore QT forever, and we could only hope that the shift in market focus would be a smooth one.

In the event, that shift came suddenly toward the end of last year, and not smoothly at all. At least some portion of market participants became very focused on aspects of normalization that, in our typical standard reasoning, should not have been all that consequential, since they were telegraphed and should have been priced in. And the unpleasant feeling of a sharp, unexpected tightening of financial conditions, along with serious questions about whether the market was behaving rationally, gave rise, at least in my case, to painful flashbacks of the taper tantrum. But questions about the market's mental state are not going to be settled any time soon and, in a sense, are beside the point.

What this means for us, I think, is clear. We should continue to make our decisions in a thoughtful and careful manner, and to explain them as best we can. At the same time, we must be realistic about the fact that we are, at least for now, operating in an environment of heightened sensitivity to news about the balance sheet. And I think it behooves us to settle issues that we're in a position to settle, and also to display a thoughtful openness to concerns that people are raising. Exactly what this means, of course, is something we are probably going to be discussing. In the meantime, I feel very good about where our discussions on the long-run operating framework have gotten to. We've had a robust discussion of our framework over the past couple of meetings. I believe there's strong support for remaining in our current framework. We've "socialized" that idea in the minutes, and we've all had a chance to go home and live with the arguments.

To summarize briefly, the regime provides good control of short-term money market rates in a variety of market conditions and effective transmission of those rates to broader financial conditions. The main alternative, our return to a corridor system, seems more problematic. Reserve demand is much larger and more variable than in the past, and it seems likely that a corridor system would involve the Fed playing a very active role in markets, intervening in size and with great regularity. We could probably make that work from the perspective of execution, but our current framework seems much preferable. I had previously been an advocate of leaving this decision open for a while longer, letting the paint dry a little bit more, as we learned more about the minimum level of reserves our current system might require.

With the markets' renewed focus on QT, you might think of this as the end of the honeymoon, and I now see the benefits of waiting as lower—probably close to zero—and the benefits of confirming our choice now as substantial. I encourage all to weigh in on these issues, including both the choice to remain in our framework, and the merits of announcing that decision tomorrow. One benefit of settling the long-run operating framework question, is that it would clear the path to provide clarity in coming meetings on a number of further issues.

In particular, we've all read the briefing material with estimates that reserves will be somewhere in the neighborhood of $1.3 trillion in June, falling to $1.1 trillion in September. There is some uncertainty associated with those numbers, but I think it's clear that, presuming we remain in our current operating system, the final stages of balance sheet shrinkage are on the horizon. Thus, it's time we begin settling some of these issues about how we'll manage the end of that process. The goals are clear: We want to reach the smallest balance sheet consistent with the effective and efficient implementation of monetary policy, and we want to do that in a way that minimizes risks to achieving our dual-mandate objectives and avoids needless disruption in financial markets. I'm hoping that you'll express your views on these transitional issues that were nicely summarized in the staff memo.

In these final stages of our balance sheet normalization process, it makes a ton of sense to me to proceed more gradually as we probe for the right level of reserves. Thus, I see a lot of appeal in what we've been fondly calling the "Harker plan" and what President Harker is referring to as the "Armenter plan," which involves ending balance sheet runoff at a specific date later this year and allowing reserves to decline more gradually for a time thereafter, as we feel our way to the minimum efficient level of reserves. I hope we can have a thorough discussion of this idea today, and I think the memo summarized the arguments for various dates pretty well. September seems to me like a reasonable choice. I hope folks will weigh in on that.

I don't sense urgency in announcing a date for ending balance sheet runoff or in settling balance sheet composition issues. The markets don't seem to be expecting a big reveal on these issues tomorrow. More important, when we have made changes in our balance sheet normalization plans in the past, we've done so after much deliberation and thought around this table. This careful process has served us well in the past, and I'm very pleased that we're sticking with it. Finally, there are some other issues, such as what to do with the redemption caps on the MBS. I guess my baseline instinct is to do away with them and reinvest in Treasury securities. You should feel free to take this opportunity to comment on those features and others as you see fit. Ideally, we'll be able to arrive at a consensus on whether or not to proceed with some version of the Harker–Armenter plan as soon as the March meeting.

Finally, in the spirit of communicating that we're sensitive to the arguments being made about quantitative tightening, and with reference to our earlier discussion, I think it's important that we make clear as a Committee that we view the normalization plans as subsidiary to our overall pursuit of the dual mandate. That is, if we find that any aspect of the approach we've chosen to implement normalization puts our dual-mandate goals at risk, we will alter the plans as appropriate. I am strongly of the view that normalization is not a primary contributor to turbulence in markets, a view I suspect is widely shared. And, for now, the hue and cry for slowing the pace of normalization seems to have died down somewhat.

I think the prudent course, however, is to expect those arguments to emerge again, perhaps in force, and to think about how we would handle that if that happens. I think we should remember that in our standard reasoning, the pace of normalization doesn't matter much within a wide range, implying that slowing down a little bit in the name of respecting an alternative position, would not be of great consequence. I hope it doesn't come to this, but if it does, this is something we may have to consider.

On "abundant," I don't have a strong prior on whether we need to change "abundant" or whether "abundant" is a strongly problematic word. If there's an alternative that's less problematic, like "plentiful," I could be open to that. So I'll be interested to hear other voices around the table on that. Let me stop there and open the floor for your comments, beginning with Governor Clarida.

MR. CLARIDA. Thank you, Mr. Chairman. I support a decision to continue to operate in our existing framework in which reserves are ample and sufficient [laughter], so that adjustment in our administered rates is the primary tool for implementing monetary policy. I also urge that, if we reach agreement on our framework today, we communicate this decision to the public in the statement regarding monetary policy implementation that was discussed a moment ago. With regard to the transition process by which reserves are reduced to the level consistent with this operating framework, my views since December, have evolved. At our previous meeting, I indicated a preference to operate with the smallest balance sheet possible that is consistent with this framework, and some willingness to tolerate uncertainty and volatility as we learned over time, as the balance sheet shrank, what that level would be.

Surveys of market participants indicate that the level of reserves consistent with our existing framework could be in the neighborhood of $1 trillion. If we allow for a buffer of reserves, as has been discussed, so as to minimize the volatility in front-end rates, that would put estimates of the expected minimum level of reserves consistent with this framework at $1 trillion or somewhat above. On the current trajectory for our balance sheet rolloff and growth in our nonreserve liabilities, we could reach this level of reserves as soon as the fourth quarter of this year or, if not, sometime in 2020.

The question before us, then, is, do we let this process play out passively along the current trajectory, which would have the benefit of letting us find out eventually what the absolute minimum size of our balance sheet is, consistent with this framework, or do we, as President Harker suggested in December, reach agreement before that point on when to stop our balance sheet runoff and to reach the final destination for reserve levels solely via growth in nonreserve liabilities? I have concluded that we should be willing to make this decision sooner rather than later and thus support our trying to reach agreement soon on a Harker plan to conclude our balance sheet rundown later this year, and once agreement is reached, to communicate this decision promptly to the public.

I believe that by eliminating the remaining uncertainty about our destination and pace regarding balance sheet normalization, we do address one concern, which is that uncertainty about our plans, not the plans themselves, contributes to somewhat tighter financial conditions. So, as an aside, we step away from certainty equivalence and realize that right now there's a huge range of speculation about what this destination can be. And if we reach agreement and eliminate uncertainty, that in itself, I think, could be a positive development, so long as we have agreement. The cost of this approach is, of course, that we may, for a time, operate with a somewhat larger balance sheet than we would if we were to allow the process to proceed passively—until, of course, a spike in funding rates signals that we are at or close to the kink in reserve demand. But under the staff's estimates, and according to the dealer surveys, the expected difference in balance sheet destination between the passive and the Harker approach is likely to be rather modest, in practice.

Moreover, regardless of what we decide, if we maintain the existing operating framework as just described, we are likely, sometime in 2020, to have to begin to allow our balance sheet to be growing again under either option. That would mean that if we end the balance sheet runoff sometime later this year, then that level will turn out reasonably soon to be a minimum consistent with our current framework. So, on balance, I think that the benefits to the public of eliminating uncertainty about our balance sheet destination is greater than any cost of forgoing a modest further reduction in the balance sheet that could prove to be ephemeral.

Finally, I support the language in the proposed statement regarding monetary policy implementation that makes clear that we are prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments. This language, of course, would revise the Committee's 2017 language, which has been and is, subject to misinterpretation by even savvy Fed observers. The new language says simply that we're prepared to adjust the details on balance sheet normalization in light of economic and financial developments. What we are discussing in the context of our revised policy normalization principles and plans is certainly, I think, reasonable and should not be seen as inconsistent with our overarching principles in support of our dual-mandate objectives. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Harker.

MR. HARKER. Thank you, Mr. Chairman. I want to thank everyone, once again, for all of the work on the long-run framework. So the deal is, if it works, it's the Armenter plan. If it doesn't work, it's my plan. [Laughter] And, in fact, to minimize risk, we'll just go off the Philadelphia plan and be done with it.

I believe that the proposed plan actually will serve us very well. It enables us to communicate clearly and precisely our policies for asset redemptions, keeping up with our stated objective of being gradual and predictable. At the same time, we are reducing the risk of interest rate volatility by taking a prudent approach in our quest to find the long-run level of reserves. I am on board with our planned strategy to continue reducing MBS holdings by reinvesting exclusively in Treasury securities. I'm also comfortable, actually, with maintaining the cap on MBS as normalization proceeds, because I think that the probability of the cap binding, as we saw in a previous analysis, is low, and minimizing the number of changes we make all at once has value in and of itself. Perhaps at some later date, once we are comfortable with our ability to control the federal funds rate in an environment of lower excess reserve balances, we can and, I think, should revisit the topic of whether it is appropriate to accelerate the selloff of our MBS holdings. But I think we can push that off. I don't think we need to make that decision right now.

Staging the two issues sequentially will allow us to assess the effects of a smaller balance sheet, without the complication of rapid changes to the composition. I'm also in favor of basing the start of redemptions on a calendar date. The explicit calendar date has two distinct advantages over a stopping point for the level of reserves. First, in our balance sheet, the level of reserves is inherently volatile, as unexpected movements in the U.S. Treasury's account at the Federal Reserve are both large and fairly common. This volatility makes targeting the liability side of the balance sheet fairly complicated. For example, reserves could drop unexpectedly and reach our target level, leading us to stop redemptions, only to find that the level of reserves recovers soon thereafter. And we've seen those swings of $100 billion as a sort of regular feature of what we do. Using a stopping date allows us to target an expected level of reserves in a way that is easy to communicate to the public. In that regard, I actually prefer September, as reserves at that date should likely still be greater than their lowest value compatible with interest rate control. Reserves would also be closer to what I believe is their eventual level than would occur if we stopped in June.

The second reason is that traders in financial markets appear concerned, as we have been talking about, with the eventual size and composition of our asset holdings. With interest rates falling as the balance sheet contracts—and as to what we are talking about, I'm not quite sure why that's a concern, and we have lots of hypotheses, but it appears to be a fact of life that we have to accept. Setting a calendar date will remove the uncertainty about the path of asset redemptions, allowing markets to infer exactly what size the balance sheet will attain.

Now, there are some risks with the plan. Reserves could fall substantially below $1.3 trillion before September, and to maintain interest rate control, we could be forced to raise the level of reserves and assets through open market operations. Or, if for some unexpected reason the demand for reserves slopes upward at a higher level of reserves than expected, we then could find ourselves in the uncomfortable position of announcing a change of plans. That possibility is deemed to be unlikely, but it may be worthwhile emphasizing in our communications that our primary concern is interest rate control. And the balance sheet, while important, is not our overriding concern. If everything goes smoothly, we should begin letting currency growth further shrink the level of reserves, as we search for that minimal level that allows for the effective conduct of monetary policy.

Along those lines, it would be worthwhile exploring the creation of other reserve-creation facilities that could aid the Desk operations. Also, it is very likely that the first question out of someone's mouth is, "Why September?" I think the economics of the situation govern how best to keep the balance sheet reduction gradual and predictable, while maintaining interest rate control, and that will need to be communicated. Similarly, it is what the level of reserves are in relation to where the upward sloping part of the reserve demand begins, that will determine how effective we are at achieving both goals. The communications strategy outlined in the memo, while still subjecting the Committee to some uncertainty, seems to me to be the best way of achieving both goals, with the primacy given to interest rate control. I also think it would be a good idea to craft these explanations well in advance—that is, having some talking points well in advance, for the Committee to use. Thus, a March release of the information seems to be the most prudent course of action, as it gives us some time to craft these explanations, and also gives the market six months to prepare for the execution of this plan.

And last, on the question of "abundant," we had an abundantly rich conversation about "abundant." But I'm not a big fan of the word "abundant." If we are to make any change to the statement regarding monetary policy implementations, instead of saying "sufficient," we could say "more than sufficient." That would signal the same thing. But I actually like the word "sufficient," because I think it balances—as President Rosengren talked about—what we've said previously, but also some of the political realities of the negative connotations associated with the word "abundant." Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. In terms of the questions asked, my view is that it makes sense to have a statement clarifying that we will continue to implement an abundance-of-reserves regime. I interpret the first bullet as being consistent with that view, but the absence of the use of the word "abundant" could leave it open to interpretation. So "sufficient," "plentiful," "ample," and "abundant" have very potentially different connotations. When I first read that bullet, because of the active management of the supply of reserves, I didn't even notice that "abundant" was no longer in that paragraph, because that to me was synonymous with "abundant." That's the only way that you could operate without active management of the supply of reserves. But I do think that it will be interpreted differently how we actually phrase this, and I don't view "sufficient" as close to being synonymous with "plentiful," "ample," or "abundant." And so I'm worried that if we allow "sufficient" to stay there, we run the risk that people will misinterpret what we're actually saying.

And I would personally prefer to use the word "abundant," because it is consistent with what we used in the minutes before, but if a synonym is preferred, I think that's fine. But I do worry that we don't want to—the whole purpose of having this bullet is so that people understand what the regime is that we're operating in. Leaving it technical, in terms of active management of the supply of reserves, I think is going to be somewhat misleading. And different people are going to interpret it differently, and we don't want to come out of this meeting with a lot of people interpreting us doing different things. So whether it's "plentiful," "ample," or "abundant," I don't really care which of those three words we use, but I actually am a little concerned that "sufficient" doesn't have the same connotation.

In terms of the other two questions, I am comfortable stopping the decline in aggregate security holdings in September. In terms of the cap, I would prefer removing the cap rather than planning on selling MBS in the future. In terms of the statement, maintaining a sufficiently abundant average level of reserves so that frequent open market operations are not expected to be necessary, is appropriate to disclose in the statement. Pushing reserve levels close to the steep part of the demand curve could increase interest rate volatility with little apparent offsetting benefit. In fact, I would be comfortable growing the balance sheet with the expansion of securities, tracking increases in nonreserve liabilities starting in September.

I do think that the announcement poses some communications challenges. I am concerned that some market participants view recent volatility in financial markets as being associated with our balance sheet policies. I find these arguments implausible, for some of the reasons that we were discussing earlier: the shrinkage relative to the stock of assets is quite small, and the program was announced much earlier and with surprisingly little reaction. Furthermore, the supposed correlation with the balance sheet actions comes at a time of significant declines in interest rates. If our balance sheet decline was too restrictive, we would be worried about interest rates moving up, not down. I am concerned that if we do not "push back" on these narratives in the Chair's press conference and in our future speeches, the opposition to any future balance sheet action will grow. We cannot afford that, because in the next recession we are very likely to need to engage in asset purchases again.

My final comment is that my preference would be to quickly build up our Treasury bill holdings and to let the Treasury know of our plans. Lengthening duration is a critical option for using our balance sheet to stimulate the economy, so we should quickly move to add more short-duration securities to our balance sheet in order that we have that option. This will, of course, make it possible to swap short-term securities for long-term securities in the next economic downturn. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I have remarks that are evolving as we're talking here. I think, first of all, the Committee is talking about an operating system, but the market is talking about monetary policy. So I think that's a fundamental conflict here, and it runs through the discussion. Also, as a general comment, I would say this may be a case in which we've had a difficult intermeeting period, and less might be more at this particular juncture.

Let me start with the statement regarding monetary policy implementation. Let me begin with comments on the wisdom of making any statement on the balance sheet without providing supporting details. One read of this would be that there is no new information really being put out here, as seemed to come through in Trevor Reeve's comments. These are things that have been said in the past by the Committee, and so we're not really communicating anything. I think what will happen is, people will say, "Why are you putting out a statement that doesn't really have that much content?" That will trigger a barrage of questions concerning details that aren't specified in this document. So I don't know if we really need to go in that direction or want to go in that direction. Sometimes, that can spiral out of control.

It may be better to simply state that we are continuing to work on these issues, but that there are a lot of technical details that remain to be worked out. We're very likely to be ready by March with a comprehensive plan. We can float ideas over the intermeeting period—and that is essentially what was going to happen in the March meeting anyway—and see if we get a bad reaction to any of those. If we don't, then we can go ahead with the comprehensive plan in March. And we would certainly communicate, as we have already, that the amount of reserves in the system is going to be much larger than it was pre-crisis, once the normalization process is complete. I think that might set up a good intermeeting communication, and then we can come at the March meeting with a more detailed plan.

If we don't go that route, and we go ahead and release this as some comments on the organization of bullet points here in this statement regarding monetary policy implementation, I suggest putting three bullet points under the preamble, instead of two as we have it right now. The first bullet point would be the first sentence of what is currently the second bullet point. So it's "The Committee continues to view changes in the target range for the federal funds rate as its primary means of adjusting the stance of monetary policy." That would become the first bullet point, all by itself, and I think it's always good to have a one-sentence bullet point, and it puts it out there that, look, we're thinking interest rates here, not balance sheet, as far as the tools of monetary policy. Then we would come with the existing first bullet point, which should become the second one now, and then the third bullet point wouldn't have the first sentence anymore. You'd cross out the "however," and you would talk about being prepared to test the details for completing balance sheet normalization in light of economic and financial circumstances.

A question I would have for the Committee and for the Chair here is, are we deciding against the overnight bank funding rate as the official policy rate? We're mentioning the federal funds rate here. I thought there was some consensus around the table that we were eventually going to switch to something else—I guess are we leaving that for another day, which is okay, but it does mention the federal funds here.

Now, I have comments on the last bullet point in this statement. This bullet point brings up issues about the general stance of monetary policy in a statement that is ostensibly about monetary policy implementation. For that reason, I think it's somewhat out of place in this particular communication. The wording "the Committee is prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments" seems to set a low bar for turning to the balance sheet tool for monetary policy purposes. Previously, we have set a very high bar for that, and I think the Committee's sentiment, at least in my own judgment, is that there is a high bar. We do think we would go to balance sheet policy, I guess, if we got back to the zero bound, although we do have forward guidance, and we could use forward guidance instead, in lieu of balance sheet policy. But I'm loath to get back into the game of having possibly two pieces of policy to be adjusting. It was very difficult for the Committee when we were doing that. And that's why we got to the situation today in which we want to emphasize interest rate policy. And I'm going to give an argument at the end about why we may only have to use interest rate policy anyway.

The very last sentence seems to suggest that the Committee may return to quantitative easing if conditions warrant, but the large balance sheet decision that we're essentially making here for policy implementation would seem to restrict the use of QE in the future, as there would not be sufficient policy space to go to QE on the same scale that we did in the post-crisis era. It's not clear that we really want to put this expectation in play. You could get into another recession. You go to zero. Are you really willing to go to \$5 trillion or \$6 trillion on the balance sheet? Is that really what we're talking about, or not? I don't think the Committee has really addressed that question, but if you're going to run with a very large balance sheet in normal times, and you're saying QE is still on the table, it seems to me we haven't created the policy space that was part of the goal of the normalization policy on the balance sheet. Overall, the statement may work out okay but could raise questions that would be better answered with a more detailed statement coming in March. It might be better to wait for that. We could simply say we're working on this and talk about some of the features of the likely statement in March during the intermeeting period and see if we get a good response to those features.

Let me turn to the revised policy normalization principles and plans. I begin with comments on calendar-based policy. I've long been an opponent of calendar-based policy around this table. It's, generally speaking, poor monetary policy practice to name specific dates at which the specific changes in policy will occur. The issue, to me, is that the data sometimes do not cooperate in the dance just before the penciled-in action is about to take place, putting the Committee in an awkward position. One live example that's occurring as we speak, or has occurred recently, is the European Central Bank ending their QE policy at the end of 2018. They had to do that even on the heels of poor data in Europe in the second half of 2018, because they had penciled it in, and they had to go ahead with it anyway, and then try to talk about the implications of that. I just think it puts the Committee in a bad position if events aren't corroborating the situation.

My preference would be that the Committee not proceed with date-certain statements unless absolutely necessary. Accordingly, I would simply use the phrase "later this year" or possibly the phrase "in the quarters ahead" and allow the Chair to cherry-pick a perfect moment that seems appropriate to make this move. I think this kind of optionality is the way the Committee should operate. I don't think you'd have any trouble with response to that or with the way markets would take that.

Concerning the MBS cap question, I don't think it's necessary to retain the cap. So I agree with the Chairman on this. I think it's unnecessarily complicated. On the question of "abundant," "plentiful," and many other descriptions here, I had in my notes that we like the phrase "minimally abundant reserves." [Laughter] We think it's good practice to keep reserves minimally abundant. If nothing else, this creates maximum policy space for the Committee, should it wish to return to QE in the future. Another point on this is that to the extent banks can meet their liquidity coverage ratio requirements by holding reserves, we should push them gently toward holding a close market substitute like Treasury securities instead. And my last point is, we continue to think that the Federal Reserve should open a standing repo facility that would accept Treasury securities at a ceiling rate not too far above the target policy rate. This is a method often used by other central banks worldwide. Not operating in this manner risks keeping reserves far in excess of what is needed for this Committee.

Overall, then, number one, I'm supportive of a floor system based on "Friedman (1969) rule"–type logic. Number two, reserves should, therefore, be abundant, but minimally so, on the grounds that the Committee should retain maximal policy space in the event of a possible return to QE in the future. Three, the Fed should open a repo facility to complement the existing RRP, thereby adopting a standard operating framework used by central banks worldwide. I also wouldn't mind returning to the language of "floor." I'm not quite sure why "floor" got rejected or whether it did, but a floor system, to me—for people that are in the know—would immediately say that you're doing this because of Friedman rule considerations, and that means a lot of reserves.

Finally, let me give an antidote to the market agitators on quantitative tightening. There is a very good argument, I think, that we can make—and that I have floated in the past at these meetings and elsewhere—about why what we're doing is not quantitative tightening. Often you'll hear in markets "Well, you did quantitative easing, and you said that that was easier monetary policy, why is the reverse not tighter monetary policy?" There's a good answer to that. When the policy rate is pinned at zero, and we do quantitative easing, the leading theory is that

that sends a signal that you'll stay at the lower bound for a longer period of time. There are many other theories, but the leading theory is that it's a signal to markets that when the policy rate is zero, we'll stay at zero for longer, and that seems to have worked both in the United States and abroad. Once the policy rate comes off the lower bound, however, there's no signaling about the future path of the policy rate, other than the signal that the Committee is sending anyway about the future path of the policy rate. And in that circumstance, you can shrink the balance sheet without signaling consequences, and therefore there is no quantitative tightening going on anymore. So I think that the gist of that argument could be used to rationalize the idea that the two tools are not moving in opposite directions, that the one tool becomes neutral once the policy rate comes off the lower bound and you return to ordinary monetary policy away from the zero bound. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. I want to express appreciation for all the work that has gone into the memo as well as the statements. I support affirming that the Committee has chosen to establish the current framework as the long-term operating framework. This framework—I'll call it the "adequate reserves" framework, but I have no attachment to that term—prioritizes the funds rate as the primary active tool by ensuring there are adequate reserves to satisfy demand.

I'm going to make four simple points, which will be familiar to you from previous things I have said. First, as I said in November and December, I support announcing in advance a stopping date for runoff at a point when we can be confident that there are adequate reserves to meet demand. This is the best approach to exercising effective interest rate control and providing clarity to the public about our plans. Put differently, I believe it is inadvisable to probe for the lowest level of reserves in a late-cycle environment when markets are fragile and prone to volatility, particularly associated with misinterpretation of balance sheet communications. The process of probing for the kink between the flat and steep parts of the demand curve is likely to be fraught. It will necessarily entail spikes in funds rate volatility. New tools would be needed to contain that volatility. As we have seen, markets can be quite volatile in the face of uncertainty or lack of clarity about our balance sheet policy, and I don't believe the value to what is likely to be a very modest further decline in reserves is sufficient to merit taking that kind of risk, especially since we know reserve demand itself can vary quite a bit.

Second, as I noted in December, I favor announcing in advance that we will end runoff when reserves reach $1.2 trillion, which corresponds to the September 2019 option in the staff's very good memo. According to the Federal Reserve Bank of New York's survey, it appears that reserves below $800 billion will put us in a regime of reserve scarcity. To avoid the risk of stumbling onto the steep part of the demand curve, which could lead to substantial volatility in a fragile environment, we should plan an adequate buffer above that level. Today, reserves are about $1.75 trillion, I believe. A stopping date of September 2019 corresponds to a reduction in reserves of almost 60 percent from the peak. This is a noteworthy achievement, and we should declare victory and move on.

Driving reserves down further beyond that point—for instance, with a stopping date in December of this year or beyond—would provide, at best, marginal improvement in the optics while incurring substantial risks. In fact, after the stopping date, I would prefer to allow the balance sheet to expand at the trend rate of growth in nonreserve liabilities, like President Rosengren, rather than being held fixed in nominal terms. On balance, it isn't clear that the advantages of achieving some very modest reduction in reserves for a limited time thereafter, in the tens of billions over the first half of 2020, is worth the complexity, at a very late stage in our cycle, of needing to explain again how we will decide when to stop the reserve runoff policy and allow the balance sheet to start growing.

I'm not entirely convinced that that modest further reduction merits the cost, in terms of greater uncertainty and risks of volatility at what is likely to be an even more fragile time, unless things improve quite markedly between then and now. However, I recognize some members of the Committee put a very high priority on probing for the kink in the demand curve, and I'm willing to support the flat nominal balance sheet approach suggested by President Harker. In this case, I would propose emphasizing in our communications the notable slowdown in the pace of reserve runoff this will entail after the stopping point.

Third, in our communications today and in the statement we'll release in the future, I also strongly support making clear that the Committee stands ready to adjust balance sheet normalization, if necessary, to ensure it doesn't work at cross-purposes with the federal funds rate in promoting our goals of maximum employment and price stability. It's now clear that the language that was used to convey this point in our September 2017 statement was framed with too high a bar, when in fact the underlying intent was relatively simple. It's hard to imagine that this or any future Committee would set its policy instruments at cross-purposes in pursuing the dual-mandate goals.

Fourth and finally, although I strongly support moving to a Treasury securities-only portfolio, I would prefer to do so in the least disruptive way possible. This likely argues in favor of retaining the cap during the paydown period, but I am open to further analysis.

Let me just summarize by saying that balance sheet communications, as we all know, can be quite tricky. So I would defer entirely to the Chair on the most effective sequencing and timing of how we get these messages out. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. Last week, judging from the documents I saw, I thought we had reached a point at which we could have released the revised policy normalization principles and plans after today's meeting. But I guess that's not the case, and I am supportive of releasing as much information as we can today. However, I am having some difficulty seeing how the proposed brief statement for Wednesday will be received by the public. I agree with announcing that we are staying with our current implementation regime, and I interpret that to mean that our current regime is a floor system with abundant reserves—"abundant," "adequate," "plentiful," "wildly sufficient." But I'm not so sure that the current wording will successfully convey the significance of the statement. It's as if we are trying to avoid saying that this decision implies a larger balance sheet than we thought a couple of years ago.

My reading of the weight of opinion on the Committee following both the November and December meetings was that we should continue to operate in a regime of abundant reserves. I can only guess that some participants have discomfort over publicly describing this using the term "abundant," but the alternative language in the first bullet is pretty opaque—"current system." Simon said the same as we have been doing for the past 10 years. As the SOMA shrinks, what is the characteristic that describes "current"? That's a question that people are going to have. It was pretty obvious 8 or 10 years ago, but now it's a little different. Frankly, I believe this is language that only professional Fed watchers can love. The terminology of "abundant reserves" or "floor system" is much clearer and more transparent. As it is now written, I can imagine that more casual readers of Fed statements will be asking why we are bothering to tell them that we're not making a change.

The short statement that we're planning to release looks different than most things that I've seen in the past. It's just very short. It's got a couple of different ideas in it, and I wonder about how that's going to be received. And I thought the second sentence in the introduction was a little—I had to read it five times to have a better idea of what it was referring to, the first bullet or other parts of that. Regarding the second bullet on that statement, I am fine with the intent of the second bullet. It reaffirms that the funds rate is our primary means for adjusting monetary policy while usefully stating that the Committee is prepared to adjust the specifics of the normalization plan in response to economic and financial market developments.

I think we are well served by reminding the public about the sequencing. We want to avoid the perception that we are prone to making frequent changes to balance sheet policy, as this would add unneeded uncertainty to financial markets and likely boost interest rate risk premiums. However, we must also recognize that circumstances could arise that would call for some adjustment of plans to complement interest rate policy. The June 2017 policy normalization principles addendum mentioned the possibility of recommencing reinvestments if the funds rate dropped sizably, I think. Presumably, this language makes the threshold easier to hit with this adjustment, so I support that. I think the current statement strikes the appropriate balance with regard to these considerations.

Turning to the revised principles document and the second question, I am also in favor of the proposed plan for concluding the reduction in our aggregate security holdings and then following the Harker proposal of gradually probing for the lowest level of reserves that still safely characterizes a floor system with abundant reserves. I am fine stating in March, or even now, that we plan to do this in September. The calendar date guidance doesn't bother me the way it does some. Furthermore, we should recognize that determined probing still might only allow us to reduce reserve levels by $100 billion or $200 billion. I think probing could be fine, but the overall benefit seems small. I agree with Governor Brainard and President Rosengren on that. I don't see a big difference myself, in the substance or in the "optics," between reserves at $800 billion and reserves at $1.1 trillion. I think the benefits are on the optics. I would not see this as beneficial if the smaller reserve levels make policy implementation more difficult. So I would be fine with the larger number, myself.

Indeed, I do not like opening the discussion of the first sentence of the first bullet by saying that "the appropriate long-run level of reserves is below current levels." I don't believe this view is free of policy risks. If the Committee communicates too many concerns about the size of the balance sheet and reserves, we will reinforce the belief that we will only grudgingly pursue unconventional policies to provide accommodation if we ever return to the zero lower bound. That would make it harder to commit credibly to do "whatever it takes,"—which is really the key to success with such important policies, in my opinion. This is the one thing at the top that I learned from the entire time since the Great Recession and everything that we tried to do—that if we in any way indicate that we are not really "in it to win it" and willing to do what it takes when we're at the zero lower bound, we are not going to be successful. And little choices here and there that would suggest that you might not be amenable to doing that with as much amplitude as is needed, I think, will not serve us well. In my view, it is time to clearly state our preference for an abundant reserve system—or whatever the right synonym is—no matter how large the needed level of reserves turns out to be.

Turning to the third question, I support the retention of the $20 billion redemption cap on MBS. The $20 billion cap is consistent with the current practice and provides a little added insurance against market disruptions, especially in situations in which there could be a spike in redemptions caused by a decline in rates.

Let me conclude with the observation that while the revised principles contain a lot of useful information, I know market participants will clamor for more. In our financial contact calls this round, we heard questions regarding every aspect of the balance sheet that you could think of. When will we stop running off assets? When will we start growing the balance sheet again? When will we sell MBS? And what will be the future maturity structure of our assets? There was a good deal of complaining that we have not revealed more of our thinking on these matters, and it is my opinion that this uncertainty may be affecting risky asset prices now. The revised principles give the answer to the first of these questions: When are we going to stop the drawdown? But market participants are then going to immediately ask: What are we going to buy in October, once we stop shrinking the balance sheet in September? Are we going to buy across the maturity spectrum, or will we concentrate on shorter-maturity assets to reduce the duration on our balance sheet faster? And so how will we answer this question? And, by the way, on this issue, I think any decision of whether or not to reduce dramatically the duration of our assets in the longer term should only follow an intense evaluation of the macroeconomic consequences of such a change. I fear this is a complicated topic and may take a major commitment of resources and time. For example, I think we need to assess simulations where we find ourselves in a deep recession, and we find if we use the short duration in order to run a maturity expansion plan, like we did with Operation Twist—and maybe we need to do more with open-ended QE like we did with QE3. How long would it take after all of that is settled to get back to a short-duration resting point?

Is such a short-duration balance sheet going to be a touchstone for where we expect to always return at the end of an economic cycle? Or is it just a one-time insurance program now because of all of the political issues we might be facing? I think we need to talk about that and see how it turns out, because if we can never get back to it, I'm not sure how useful that is. Even though we haven't done enough analysis on this or other questions to make final decisions yet, we don't want markets to think that we're ignoring key issues. So I think it would be useful in the Chair's press conference to explicitly acknowledge a number of other important questions we realize we have to answer. And to the extent we can, we should soon provide technical documents, systematically describing the key tradeoffs that we're dealing with. The Committee and the Chair should be seen as leading the intellectual narrative about the balance sheet. This is the best way to avoid public misperceptions and market disruptions as we work our way through this process. So while our communications now and in March will be helpful, we'd better be ready soon to provide the public with more detailed information on other aspects of future balance sheet policy. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. I'm going to recognize myself for a brief two-hander—just to, maybe, leaven the discussion of these issues. So, first, we can talk about "abundant" versus "plentiful" and that kind of thing, but I'm in no way backing away from a sizable balance sheet—in fact, if I make sure of one thing, it will be that estimates of the equilibrium size of the balance sheet have risen, because estimates of reserve demand have risen, and that means a bigger balance sheet, and it means that we hit the end of runoff sooner. I intend to confirm that either in my remarks, or in Q&A, and I think it may be better to do it in the remarks. So I'm not backing away from that. I think that's critical. I will also say, and hope it will persuade people, that the equilibrium level of the balance sheet, at the end of the day, is really a function of technical factors, particularly demand for reserves. It's not some monetary policy choice that the Federal Reserve makes, although I would like to be able to say that our framework is sort of a second-order importance, compared to the level of demand for resources. So that's one thing.

Second, as I referenced in my remarks, I am going to say that this decision to adopt this framework opens the road ahead to resolve the very issues that we're talking about, starting with the stopping date, but also moving on to things like MBS and, more importantly, the composition of the balance sheet. So I do see us—I hope, in March—as making a decision on a stopping date along the lines that President Harker has mentioned and laying out all of this. I'll create an expectation that we're going to be chopping through these issues, because I completely agree with what many of you have said that there are burning issues that we're going to need to get to. Okay, I'll stop there. President Bostic.

MR. BOSTIC. Thank you, Mr. Chairman. I support the decision to formalize and announce the FOMC's long-run framework as one featuring abundant reserves. As I stated during earlier discussions on this topic, the risks of going home to a framework featuring a limited reserves requirement are significant, and an abundant-reserves regime is more robust and agile in the face of financial and economic distress. With this decision made, attention turns to the balance sheet and its implications for its runoff. Given that there is uncertainty about the precise level of demand for reserves, I am in favor of slowing the rundown of the balance sheet in such a way that does not risk our shrinking the balance sheet beyond a threshold level that would move us into a limited reserves regime. A strategy involving stopping active runoff at some point clearly above the threshold, followed by monitoring how demand for reserves evolves and learning how reserve dynamics change when the balance sheet arrives at that level—

which is the now-named Harker plan, and which is the approach contemplated here—seems prudent to me. I'm also fine with the larger number, in terms of stopping, so $1.2 trillion seems reasonable to me.

Regarding the transition plan, I'm fine with specifying a date. Before this meeting, I didn't have a strong opinion about what date is preferable, but I will say that my first reaction to the exhibits presented today suggests to me that a supplemental buffer of $100 billion seems a bit small. So waiting until the end of the year seems to me to not be appropriate, and I'd be open to either the June or the September date. June seems fine to me. I'm certainly undecided about the redemption cap for agency MBS. I can see pros and cons, and I haven't gotten to a comfort point one way or the other. I will say that there are a lot of moving parts right now, and trying to simplify the space in which there is uncertainty and change, might argue for keeping it for a while as we think about this.

I also want to say that I do believe it's optimal to delay announcing many of these balance sheet details to a future date and not have this happen tomorrow. One reason is because I have a "one decision, one memo" policy that I like to stick to. But the second is that I think taking more time, and hinting about the likelihood of additional balance sheet decisions in the future, as you mentioned you might do in the press conference, preserves the view that we are a deliberative body and that we continue to work together to come to conclusions in a way that may be less clear if it were all bundled together in such a short fashion.

Now, regarding the specifics of the communication, I have a few thoughts. For the statement regarding monetary policy implementation, like President Bullard, I struggled with that second bullet. I think that the last sentence is perhaps a bit more situation-specific than I'd like. I don't know that I have a good solution. One solution might be to drop it altogether, but if there is importance in saying that we're willing to use the full range of tools, I would suggest adopting language such as we saw in exhibit 2, which is just to say "if justified by circumstances" and leave it at that.

I'd also like to point to an issue that I raised in the first discussion about the long-run framework—namely, that this approach explicitly links monetary policy and bank liquidity regulation. I believe there would be value in exploring whether there are regulatory reforms that could reduce the volatility of reserve demand without adversely affecting bank liquidity and financial stability.

And then, finally, I'd like to thank the staff for their hard work on this, and there's a lot that went into this, up to the very last minute, and I very much appreciate their diligence and care in moving this forward. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Barkin.

MR. BARKIN. Thank you, Mr. Chair. I'm fine with the floor system. I'm fine with the Harker plan, which I think is quite an elegant way to land the plane here, and I'm fine with the proposed two-step communication timing, recognizing there's risk of market reaction no matter what we do, and I do think there will be market chatter regardless of what we do. I hope we are still planning continued Committee conversations on how to minimize the level of reserves in the floor system. We're taking it as a given, but I'd like to imagine that it could someday be billions, not trillions. The political and public perception risks of a large balance sheet do still concern me, and as I said last time, the staff has identified interesting mechanisms for reducing the demand for reserves, including a differential pricing scheme that I do think we should explore further.

On the choice of when to end remittances, I'm comfortable with September. It diminishes the perception that we're making this move as a reaction to the market turmoil that followed the December meeting. It also allows reserves to fall further before slowing the pace at the time. I would prefer not to reinvest into more MBS. Reinvesting only in Treasur securities moves us more rapidly toward our stated long-run goal regarding the composition of the balance sheet, and I've seen no evidence of fragility in MBS markets that would warrant a slower approach. On the statements—and, I guess, I apologize to the staff for all of the help you're getting with these statements. [Laughter] They did come in yesterday. So [laughter], a point of view. I might suggest looking at the words "extensive" and "thorough" in the first sentence. In law school, I learned that when you use the word "clearly," it actually means not that clear. [Laughter] And, to me, it just seems to protest too much. On the phrase "abundant," I was one of the people with President Rosengren, who suggested we take it out for the political economy reason you suggested. I think I've been convinced by today's conversation that referring to this as a floor system might actually be a simpler, easier, cleaner way to communicate what is really important that we communicate here, which is that this is the system we're using. I would agree with those who have said the paragraph we've got now is just a little confusing on what it is. An alternative would be to take out the words "is sufficient to" and just say "a regime in which the quantity of reserves ensures that control over the level" et cetera. But, again, you've gotten a lot of help with that.

On the March statement, I would add a sentence that makes the case for what we've done to reduce reserves, and I would use that statement to focus attention on reserves, rather than the entire balance sheet. As Governor Brainard said, I'd like us to declare victory here, perhaps a subbullet that says "by September"—if we chose September—"reserves will be 60 percent lower than they were at their peak." If we don't focus readers on what the right metric is—reserves—and what our real accomplishments have been—taking it down 60 percent from its peak—I don't think we can expect them to get there on their own. Thank you.

CHAIRMAN POWELL. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. I support the statement regarding monetary policy implementation and it being issued in January, with the view that in the press conference you will foreshadow the work we're doing on the revised normalization principles and plans. I'm assuming, regarding the statement on monetary policy implementation, that we reserve the flexibility to tweak elements of the current framework down the road—alternatives to the federal funds rate, introducing the ceiling facility, and so on. I support announcing a specific date later this year when we plan to end the balance sheet runoff. I do think an announcement regarding a date would reassure market participants and remove one source of uncertainty, and I come at this from a view that there are significant structural changes going on in the financial markets, and we talked about some of those earlier. The Federal Reserve is a part of that. I'm not sure we're the cause of these things, but I would like to get us out of the way. And I think, in addition to us getting out of the way, it would not surprise me that there will need to be some study of the role of algorithms, exchange traded funds (ETFs), and other structural elements in these markets. I'm pretty confident this debate is not going away, and I think it's unlikely to go away, because when corporate earnings are weaker, and the market is more likely to go lower, these issues are raised with a lot more zeal than when it's going the other way. And I think that an adverse scenario is very likely in front of us. So I'm glad to get us out of the way of this discussion and remove that—at least making sure that the Federal Reserve is not part of that uncertainty. I believe the end of September makes sense. I'd be supportive of that. I don't like December, because you've got these year-end idiosyncratic pressures in the securities markets. That gives people enough time to get ready for September, in terms of the gradual approach to the final level of reserves, and also gives us a chance to make a little bit more progress in normalization.

I do favor a portfolio weighted heavily toward short-term Treasury securities, and I gather that this $20 billion cap—which we all agree on MBS is unlikely to be reached—at least protects against the scenario when there is a downturn: there's a decline in rates, you've got unexpectedly high prepayments, I could see why we might be glad that we've got a cap on. But that's against the objective that I would like to see—us eventually getting to a portfolio that is composed mostly of short-term Treasury securities. And the reason I'd like to see that is that I want us to be well positioned to provide balance sheet accommodation should a future recession threaten to push us back against the lower bound. In this interim period, while we're doing this work, I would like us to take advantage of the time to—again, as we've talked before—tweak banking regulations, if possible, and look at other adjustments that will allow the banks to more easily hold Treasury securities in lieu of reserves, or encourage a more efficient distribution of reserves across banks, or both. It would also give us time to introduce, as has been mentioned, a no-stigma, or low-stigma, repo facility ceiling mechanism that might limit upside potential moves in the federal funds rate. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. As I listened to this morning's discussion, it took me back to conversations we had around this table some years ago about the use of balance sheet policy and its cost and benefits. And one of the costs that the staff highlighted in one of their memos was complications to setting monetary policy in the future. So comments today, I think, point to that, and as Simon and some others said, there are some things we think we know and some we are still learning, and I think we'll have to be flexible about that. For me, what seems very important about the release of the statement and communications is that we really separate our choice of an operating framework, and what we need to do to control interest rates, from the use of the balance sheet as a policy instrument.

So that's the context that I think about those three questions. I do support a statement that would come out of this meeting that indicates our intention to continue with the current operating framework over the longer run. And I think, with thoughtful staff work, and past Committee deliberations about the various attributes of that operating regime, I'm comfortable that we can settle that aspect of balance sheet normalization. I, too, was one that "pushed back" on the use of the word "abundant," and the reason I did is not because we hadn't used it, generously. But, when we did, it was always in the context of a contrast to where we were pre-crisis: Trying to say, "pre-crisis, we had a very small level of reserves, that's how the Desk would try to manage interest rate control,"—and we were contrasting that to "abundance." I did have in mind, in wanting to move away from that, both the political economy issues that associated it with big balance sheet and whatever that connoted, but really to go back to saying this isn't really about a specific size issue as much as it is to say it's about a framework that focuses not on controlling the supply of reserves, but focuses on using an administered rate. So I think, again, in order to be clear about why we're choosing this path, I'd want to separate it from the policy implications.

I also support releasing additional details about our plans. I think there's going to be continued appetite for that, particularly after they see this statement tomorrow, and so we can clear those up, I hope, at upcoming meetings. And I, too, am comfortable with the proposed September date for the conclusion of reducing our asset holdings.

With respect to the composition of the balance sheet, I favor an active approach in transitioning to a shorter-duration, Treasury securities-only portfolio, and to that end, I have a strong preference for continued runoff of agency MBS. But I would support retaining the $20 billion cap to avoid unnecessary disruption if we had an economic shock that drove down long-term rates and might lead to an increase in prepayments. Thank you.

CHAIRMAN POWELL. Thank you. President Mester.

MS. MESTER. Thank you, Mr. Chair. Regarding question 1, over previous FOMC discussions there has been an emerging consensus to continue to use an abundant reserves operating framework, and I support that, as well as announcing that decision after this meeting. We have referred to the framework as "abundant reserves" in the minutes, and I guess I would favor continuing to refer to it that way, in order to avoid confusion. Whatever we call it, we will have to explain in subsequent communications what this framework is, how it will work, and that it's consistent with normalization, especially to those, including legislators, who have expressed concerns about the size of our balance sheet.

Now, I'm going to go to a place you might not want to go. Instead of issuing a separate statement on implementation after this meeting, as suggested, I think it would just be cleaner to include a revised first bullet point in tomorrow's post-meeting FOMC statement as just a bottom point in that statement and then include this revised second bullet with the communications that we'll release with the revised principles and plans at the March meeting, or a later meeting if that's what we decide. I interpret the added bullet point here as basically saying that, if we see the balance sheet normalization adversely affecting market conditions, we will be ready to revise the plan, and not that we're going to be using the balance sheet as an active tool unless we see a material change in the economic outlook.

This really pertains to the plan that we're not going to be talking about until March. So, in that sense, I think maybe just keeping this bullet point, and the revisions here, to when we give out the whole revised principles, might make more sense to me than just announcing that we made our decision that we're going to continue in the framework we're in. I don't think that delaying the release of this bullet point is going to have any kind of cost. I think that the possibility of consternation in the markets in the intermeeting period can largely be avoided by providing communications in the press conference. So I don't think delaying this will necessarily change anything, and you have the press conference to alleviate any concerns.

On question 2 regarding the transition plan, the memo suggests that $1 trillion of reserves is a plausible estimate of the minimum amount of reserves necessary to operate in an abundant reserve regime. And this would include the buffer to ensure that we operate consistently on the flat part of the reserves demand curve and to minimize excess volatility in money market rates from reserve demand and supply shocks. But, as the memo says, there is uncertainty regarding that estimate. So the idea of any redemptions in slowing the decline in reserves before they reach a $1 trillion level seems like a prudent thing to do.

Now, the choice of stopping date, then, is a choice of how far above $1 trillion we want to be when we slow the current pace of decline in reserves to a much slower pace. Stopping redemptions earlier means stopping them at a higher level of reserves, so it takes longer to get to $1 trillion: According to the staff memo, that period of slow decline in reserves would last two and a half years with a June stopping date, one and a half years with a September stopping date, and half a year with a December stopping date. And, of course, there is some uncertainty about $1trillion, which would also add some uncertainty. But I would be comfortable with ending redemptions in December. I think there is some benefit of having the balance sheet normalize sooner rather than later and before the next downturn, whenever that occurs.

Regarding the communications, I appreciate the changes that have been made in successive drafts of the revised normalization principles and plans. I was concerned that the earlier drafts did not adequately communicate the rationale for selecting the particular date for when redemptions would end. This draft provides the context—namely, that we would like to end redemptions to allow the level of reserves to decline more slowly to our longer-run desired level of reserves, consistent with efficient and effective policy implementation under the abundant reserves framework. I think we can actually go farther and include our current $1 trillion estimate of that level, with appropriate caveats about the uncertainty of that estimate, and noting that it could change as we gain experience. We are, after all, making the decision on the basis of our current estimates. So I think that should be conveyed to the public. I do understand, however, there may be some reluctance to do that, and I think the inevitable question about our estimate of the desired longer-run level of reserves, and our projection of our balance sheet asset size when redemptions end, could be handled in a press conference or other communications. I do think we should think through in advance how the Committee would handle the case in which the $1 trillion estimate of the desired amount of reserves turns out to be off. If $1 trillion is too high, it wouldn't jeopardize operating in an abundant-reserves regime, but it would mean that getting to the minimum effective and efficient size would take longer, and it increases the chance we may not be done normalizing before the next recession. If $1 trillion turns out to be too low, the Committee might have to end redemptions before the announced date. So there are tradeoffs and communication issues to consider, and we should do that now so we'll know how to handle each situation.

Finally, on question 3, regarding balance sheet composition, my preference is that when we stop redemptions, we begin reinvesting all of the principal payments received from agency MBS into Treasury securities. This would allow a slightly faster return to a portfolio of primarily Treasury securities—which I support. I would also support shortening the duration of the SOMA portfolio. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chairman. These meetings are getting harder. I support the strategy of bifurcated communications—announcing the policy framework with this meeting, followed by further details on the normalization plan in March—as opposed to some of the comments that perhaps those should be combined. I also support the announcement at this meeting of our decision to continue to operate in our current regime, with administered rates serving as our primary policy instrument. We've discussed that subject at length. We have benefited from extensive and excellent staff analysis, and because of the communication given in the minutes and elsewhere, I don't think it will be a tremendous surprise to markets or the public that we intend to do that.

There have been plenty of last-minute suggestions on possible changes to the language that would be released today. I don't have any suggested change to the language. I do worry a bit about how the phrase "in which active management of the supply of reserves is not required" will be interpreted. As we have discussed in previous meetings, there is a tradeoff between the size of the buffer that we carry on the balance sheet, and the frequency of open market operations that will be needed to smooth through temporary shifts in reserves demand. And if what we're saying here is that—if the phrase "no active management" is interpreted to rule out all open market operations—that's implicitly promising a very large buffer. And I think we should retain the flexibility to react to shocks in reserve demand if necessary and not rely wholly on the size of the buffer. I think that's principally a communication as to what "active management" means, and we may want to more precisely define what we mean by "active." Does that imply no daily operations, but still allow infrequent operations? That would certainly be my preference. I think that can be handled simply by communicating what "active management" means, as opposed to proposing yet another change in the language for today.

On the revision to the normalization plan, we were all watching paint dry, but we thought it was beige paint, and it turns out that others thought it was heliotrope. [Laughter] So I support providing additional certainty. I do wonder, with the language that we have now in the normalization plan, whether we're providing enough information on how the balance sheet would evolve once we have essentially stopped it. We had always said in the past—and indeed it has occasionally been mentioned around here, but it's not in the proposed language anymore—that the level of reserves would be the lowest level consistent with efficient and effective operation of the system. And it no longer says that. It says it will be a level that is consistent with the efficient and effective operation of the system with respect to reserves. Simon had an interesting discussion that I need to understand better, and following the Chairman's desire, I left that for these comments, as opposed to asking the question at the time, as to how "effective" does not provide any sort of content for what the level of reserves might be because there are a broad number of levels of reserves, that might be "effective." "Efficient"—there might be some way to say—well, "efficient" does sort of imply a particular level of reserves, but I'm not sure it provides enough information. And will people really understand what we're saying, or will they be asking for more information about, "well, what is this 'efficient and effective level of reserves,' if you're not saying it's the lowest level that is efficient and effective?" But there's plenty of time to talk about that before March. I think that's principally a question that I have now as to whether we have overremoved information from that.

On the question of keeping or removing the cap on MBS rolloff, I am not agnostic, but I don't have strong feelings. I strongly support a return to a Treasury securities-only portfolio, so I'd support seeing the cap go as a way of expediting and simplifying the process. But I think I share President Bostic's view that removing the cap is potentially just one more moving piece. On the basis of my understanding of Trevor's presentation, the cap isn't likely really to be binding very often in any event—it's not actually that operational. So it might be just as well to keep the cap in place if we don't think it's actually making a difference, and it just removes a certain amount of confusion.

On when the balance sheet rolloff ought to stop, as the staff materials make clear, the choice of June, September, or December has a relatively small effect on the evolution of the balance sheet. So the choice of months seems more important from a communication standpoint. My preference is for a December stop. I think that's in line with what the market expectations were at the end of last year, but the market's views have been particularly fluid of late. Expectations could be shifting forward. I certainly take note of President Kaplan's remark that December is a squirrelly month, so maybe you don't want to add additional "squirreliness" into it. On the other hand, if this is a stopping date that one has announced in advance, I think that probably wouldn't necessarily add to the general unusual market activity in December. But still, I would be willing to reassess my preference for December in the lead-up to the March meeting as we discuss this further. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Mr. Chairman. I also support announcing that we will continue to use our current operating regime. The current regime has many benefits, and using our administered rates as the primary tools to influence the federal funds rate is simple and straightforward, and it's a regime that's been working well to control interest rates since the financial crisis.

I note from reviewing minutes and transcripts that the Committee has discussed this choice thoroughly and has come to a deliberate decision. And, now that we have reached this conclusion, it is time to tell the public. This is a unique moment. By choosing a long-run operating regime, we're bringing to an end the extraordinary measures that the Federal Reserve took during the financial crisis and setting our course for the future. This announcement will show that monetary policy is getting back to normal.

The statement on monetary policy implementation in my mind does a good job of laying out our thinking. I particularly support the second bullet that makes clear our approach as flexible and subject to change if developments warrant. We have emphasized that monetary policy is data dependent, and that philosophy should apply to the balance sheet normalization as well. Deciding to keep the current operating regime still leaves some important questions: How many reserves do we need to supply? And how big does our balance sheet need to be? They should be sufficient to avoid scarcity. We should operate efficiently and should not force banks to hold more reserves than make safe and sound business sense. There should be a safety net for the banking system, but the right size. Still, to me, this is mainly a matter of getting supervision and regulation right. And given the regulations that are in place today, we need to supply enough reserves for banks to be able to comply without difficulty. So I'm in favor of stopping balance sheet runoff before reserves become scarce. But as all of this recent staff work has made clear, there is a lot of uncertainty about how many reserves banks need and want to hold. I don't think that we should resolve that uncertainty today, or that we need to today, but just announcing our choice of an operating regime will show that we are making significant progress.

Deferring a decision about that exact stopping point for the balance sheet will have two important benefits. First, if we announced an end to the balance sheet runoff right now, we could appear to be reactive to the recent volatility in financial markets. Deferring an announcement on the balance sheet will demonstrate that we're deliberative and intentional about our policymaking and that the FOMC makes decisions on the basis of what's best for the long run. Second, we are set to make two major announcements this week, a significant change to our policy statement, as well as a decision on the long-run operating regime. And we're laying out a lot of information. Adding a plan for the balance sheet would make the communications even more complex. If we defer the balance sheet decision, we can spread these announcements out over a period of time and make it easier for the public to understand it, and absorb it, as well as provide time for sufficient deliberation.

When the time comes, I would be comfortable with the proposed transition plan for the balance sheet. It will reduce uncertainty about our intentions while helping us figure out how to get a level of reserves that is no larger than necessary and appropriate to implement policy. Regarding that exact stopping date, I'd be comfortable with either September or December as the time frame, although I do recognize that December can create some issues, as Governor Quarles and President Bostic noted earlier. But June seems to me to be too soon and too reactive to the market developments.

With respect to the MBS holdings and the redemption cap, I would be inclined to drop the cap. I agree with the Committee's long-standing plan to hold primarily Treasury securities in the longer run, and moving away from MBS holdings is an important part of unwinding the response to the crisis. And with that now in our past, I think we can safely remove the cap and let the MBS portfolio fully run off. Of course, there could be extreme scenarios where we would want to slow the runoff of MBS holdings again. But, as our new statement on policy implementation makes clear, we have the flexibility to adjust our plans in light of developments. Thank you.

CHAIRMAN POWELL. Thank you, President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. In response to the questions from the staff, first, I support indicating in January that we intend to operate in a floor framework. I'm agnostic as to the use of the word "abundant."

The second bullet, though, introduced a bunch of questions for me and my staff. It strikes us as being somewhat ambiguous. We say that the target rate for the federal fund rate is our "primary means of adjusting the stance of monetary policy," but then in the next two sentences we say that we reserve the right to do whatever we need to do, depending on market conditions. It seems like it opens us up to questions about whether the balance sheet is becoming an active policy tool. I'll give you an example. So let's imagine that the economy slows down over the next couple of quarters. It seems conceivable that we could pause the rolloff before we cut the federal funds rate, and so that means, whether we like it or not, the balance sheet is somewhat becoming an active policy tool.

I actually like President Bullard's suggestions of calling out the federal funds rate as our primary tool as the first bullet; the second bullet is we're going to operate in a floor system; and then the third bullet is simply that the Committee is prepared to adjust any details for completing our balance sheet normalization in light of economic developments. I agree with President

Bostic. I don't think the last sentence is actually necessary. It strikes me as being duplicative of the second sentence in the second bullet, and it's just doubling down on this active element of the balance sheet where we need more accommodation. I think we're entering into an ambiguous area from a policy standpoint. It strikes me that simplifying this would serve our interests. So that's one comment.

On the second question, I understand the logic of the Harker plan, or the Armenter plan, depending on how it turns out, and I support it. Between September or December, I have a slight preference for December. A lot of our discussions in the past couple of meetings were about trying to make sure that we have QE available to us in the future, and that means rebuilding political credibility to support this as a policy tool, and that means demonstrating that we can shrink the balance sheet back down. Now, I appreciate the comments of Governor Brainard and President Barkin about defining success, and we need to do that, because we haven't done that yet. But I do think it's worth exploring how low we can get reserves. I guess I don't see a huge cost. If banks have to own Treasury bills instead of reserves, so what? There are a lot of Treasury bills out there, and they're highly liquid, and if banks have to work a little bit harder to own T-bills, it strikes me as not that problematic, from our perspective. So I'd want to better understand what these costs are.

When I think about the statement—the revised normalization principles—the words that gave me pause, were that we "will likely hold the size of the SOMA portfolio roughly constant for a time." That strikes me as limiting ourselves to too short a period of time. Maybe we might want to hold it for an extended period of time, while we explore how low we can get the reserve levels, and how we see if banks can pivot to owning T-bills. That strikes me as reasonable. So I would want to try to not box us in, to make this pause in the balance sheet so limited; maybe it'll end up being a longer pause, because maybe it's not that difficult for banks to transition to T-bills.

My last comment is that I'm agnostic as to the MBS cap. I don't have a strong view. In terms of our holdings, long term, I also support going to a Treasury securities-only portfolio. At the previous meeting I expressed a concern—I wasn't sure about just going to a portfolio of short-term Treasury securities. I see the benefits of having that, because it gives us policy space. But there are some political economy concerns, the more I think about it, because if we announce—and I don't have a strong view yet—that we're going to own short-term Treasury securities, it seems like it's easy then for the Treasury Department to say, "Well, great. We're going to fund ourselves short," and then all of a sudden that may compromise our independence through no fault of our own, just through uncoordinated action that it seems like we're ending up coordinating—as opposed to, if we say, "We're going to buy across the Treasury curve." It strikes me that that's a stronger position to be in, in terms of preserving our independence, regardless of how the Treasury chooses to fund itself. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Daly.

MS. DALY. I'll just start by thanking the staff. I appreciate all the work, even over this weekend. And, from the sound of it, there'll be more work to do. So thank you in advance.

I am broadly in favor of the proposed plans. I will tell you that when I first saw them, I thought it would be better to bundle it all and release it in March, simply to get us some space between the policy statement, which is going to be quite a bit different than December, and this, largely to attend to what President George said, which is that we want to distinguish our operating framework from active balance sheet policy. But with the conversations around the table and just thinking about this again, I can absolutely support doing the first part of it tomorrow, and the actual plans for it in March. That's mainly because, I think, the announcement of this abundant-reserves operating regime will be really a surprise to no one. They can look at the minutes, the speeches, our discussions. We've had considerable deliberations weighing the pros and cons. And so I think that would not be a big event.

I do think it will already start to bring more questions to us that we haven't yet figured out, which is, is the federal funds rate going to be our policy rate that we'll go forward with? Will we have floor or ceiling facilities in there? So there are all of these questions that will probably be asked of you tomorrow, Chair Powell, that we will start to have to deal with. And so as soon as we're done with this, I think we're going to have to go back to asking those questions and deliberating on that.

Many people around the table had reservations about the second bullet point, and I'm going to add my own reservations. They're not that different. I think, as Trevor indicated, the second bullet point was set up as a complete replication of the June 2017 statement, just replacing the tone of the second and third statement. But I think it runs the risk of conflating the idea that we're going to manage the balance sheet actively—the normalization program—and the funds rate target. I originally had a proposal in mind very much like, I think, what President Kashkari last said, which is to separate the funds rate from the normalization details, from the balance sheet framework in general. I don't end with a strong view of whether we should do that as much as I think, in the press conference, you will have to distinguish balance sheet normalization policy in which we roll off more slowly or more rapidly in light of financial and economic developments, from our operating framework, and from the fact that our primary tool is the federal funds rate. And I don't think that is going to be immediately clear just from the statement draft that we've seen. So whether we do it in the press conference and subsequent communications, or we change the bullet points, as some have proposed—I think either one of those would be acceptable.

Now, regarding the transition plan, I actually made a case for doing something similar to taper our pace in December, so I'm quite comfortable with this approach—the Harker plan. I think it will help us get a soft landing, and it will help us figure out where the steep part of the demand curve is. And I'm for September, because I like the idea of a buffer and slowly finding where that steep part is, as opposed to quickly finding it and increasing volatility.

On the MBS, in the long run, I would be in favor of removing it, but for now, for no other reason than reducing uncertainty, I would be in favor of keeping it. I also think it's worth more consideration about whether it gives us some low-cost insurance if, I think as President Kaplan said, we get an adverse scenario where interest rates drop and prepayments surge, having such a cap will help calm markets. And so it's a low-cost insurance policy that doesn't seem likely to be used, but it could be in the future.

Finally, before I turn to whether I think we should do "abundant," in terms of the future discussions, I think one of the things that's on the top of my mind is the SOMA portfolio and what we are going to do. And I don't have a view yet about whether the move should be of short duration. I think that gives us the ability to do an Operation Twist, but I'm with President Kashkari: If we have something that looks very much like the stock of Treasuries out there, that eliminates some of the political risks. So I think more robust conversations about that, and sooner rather than later, would be a good thing to have.

Now, regarding the floor, I hadn't really thought about this, but I am at the Reserve Bank that runs the game "Chair the Fed." I can guarantee you that if we put in there, instead of "we have a corridor system" or that we had one—if we put in there that "quantity of reserves is sufficient to ensure that control over the"—that paragraph, that's not going to work. So I would suggest that we go to something like saying it's a floor system. You can look it up on Wikipedia. [Laughter.] People will figure it out. I would propose that we say "policy in a floor regime in which the quantity of reserves is more than sufficient." I like the "more than sufficient." I think there is concern over language on "abundant" and "ample"—those are undefined in and of themselves—but a floor system is just a mechanism; it's a production function of how to do this. And then "more than sufficient" just says we're not going to get right to the very end before we decide to quit. So, with that, I will conclude.

CHAIRMAN POWELL. Thank you. Vice Chairman Williams.

VICE CHAIRMAN WILLIAMS. Thank you, Mr. Chairman. Just to start off, I think we all know there's a great deal of attention out there in the markets on the subject of our balance sheet normalization—far more than we anticipated—but I don't think that's going away anytime soon. So I think there are some meaningful advantages, as many others have said, to providing some greater clarity at this time. I would love it if we could provide the whole package and describe all of the pieces of that, but I think that, as many others have commented, that's a lot to digest at one time. And also, I do believe, like others have said, that this is a group that works best when it has a chance to deliberate, to think through, to study carefully, what are some pretty technical issues.

I do think we are in a good place, and we can provide some greater clarity regarding our longer-term operating framework, and some other issues, at this juncture. And then, as the Chairman said in his opening remarks, this opens the road ahead to a sequence of discussions for this group, supported by deliberate work by our staff—I'm sure they're excited about that. As we sequence this through, there's a natural way of providing greater clarity over the next six months or year on some issues. And I'll come back to that.

I think, right now, on the basis of our discussions in November/December and today, there is clearly strong support for an abundant reserves floor system long-run operating framework. I support that fully. I'm not going to go through all the reasons, because we've talked about it, but it works well.

It does get to this issue the Chairman mentioned, which I think is important. When we actually did the homework about how would we operate in this new world, more of a corridor system, there was a realization that the Federal Reserve's "footprint"—in particular, the New York Fed's "footprint"—in markets would be extremely large and very extensive. And when you think about, well, how does that sound in terms of an operating system, I think there are some disadvantages. So I think that the approach that we're taking is a very good one. In terms of the words, again, I think there are different ways to describe it. I do think "floor system" has some advantages in some audiences; "abundant reserves" has advantages in others. Basically, it's incumbent upon all of us in our communications to describe it in a consistent way.

On the second point—and this gets to the second bullet point—I do think that it's really important that the Committee provides reassurance that we are not on a preset course on balance sheet normalization, that we will be focused on economic financial conditions and our dual mandate. I do think a fault of the June 2017 principles that we put out is that, for reasons that I and many in this room supported at the time, it did put a very high bar on thinking about adjusting the balance sheet normalization. I do still believe that the federal funds rate, or the policy rate, is our primary instrument. But as we get closer to that endpoint—now we're in January heading into February, we're thinking about ending this in September and then adjusting further—having that freedom to adjust the balance sheet normalization in response to changing conditions, I think, is appropriate. I don't see this as a signal that we're about to jump into doing QE4 or QE5 or anything. It's really about managing this normalization process, so I strongly support that.

On the comments that a number of people have made regarding bullet point 2, I would just reiterate that this is very closely worded to our June 2017 principles. The first sentence and the third are almost identical. And so changing the third sentence is not without risk, because we've said it before. The second sentence, which is I think the offending sentence, in my view, that we had before—it had this very high bar in the material deterioration—I view this sentence as being closer to our 2014 view and, quite honestly, more appropriate for the juncture we're at today.

I do think you could write this structure in different ways, and think about it different ways. I think that the benefit here is that we're maintaining the 2017 language to the extent that we think it's appropriate, and we're putting in this new sentence just because of the fact that we're in a different situation today than then.

Looking ahead, I heard strong support for this two-phase approach. By the way, it's called the "Philadelphia plan." When this doesn't go well, you'll enjoy the fruits of—

MR. HARKER. The "New York plan."

VICE CHAIRMAN WILLIAMS. The New York plan, right. [Laughter] But I do think this two-phase approach has some advantages. I do support September 30. I think that's a nice compromise. I heard a lot of support for that. By the way, on date-based guidance that President Bullard picked up on, I've gone through the transcripts. I have committed so many sins of supporting date-based guidance in my career that I have actually booked a special room in central bank purgatory [laughter]—many of us will be spending time in there—but I do think it provides the clarity we want. We know that the reserves move around for a lot of reasons. What we're trying to do is simplify our message and clarify it. So I think the date makes sense from that point of view.

In terms of the issue that I think President Rosengren, and I know Governor Brainard and maybe some others brought up, it would be good if, in our discussion next time in March, we could come to some understanding also of what success looks like. At this moment, without hearing that discussion further, I would say our current view is that an amount of reserves of roughly $1 trillion is what we expect. So that would be a runoff for maybe two years beyond September 30. But just have some of that clarity, because I do think that as soon as we say September 30, as soon as we say "We're doing this," the questions will be about "Well, how low are you going to go?" And so I think that what would be important to discuss at our next meeting is, how far are we willing to clarify what we think our ultimate stopping point is.

Now, getting back to follow-ups, in March I am hopeful we'll be able to get close, or to, a decision on the transition plan. I do think there are a bunch of pieces that have to fit in with that, so, like others, I'll just mention that. I think this MBS cap issue is something—obviously, these are operational issues, but I think that we need to get clear on that. My own view, like others, is—I don't want to say ambivalence–I 'm not agnostic, or indifferent—I think the tradeoffs that have been articulated are exactly right about the costs and benefits. I think that this is a tertiary issue. This is pretty low on the kinds of important issues, but we just have to make a decision one way or the other.

I actually think investments in the Treasury securities is a bigger issue. When we decide that on September 30 that the MBS proceeds are now going to be invested into Treasury securities, we need to be clear about what that looks like—in terms of are we going to invest proportionally in the "universe" of outstanding Treasury securities; are we going to tilt to Treasury bills; or whatever—we need to do that as a group. That's a policy decision. Also, my colleagues Simon and Lorie, who are nodding forcefully right now, also need to know what they are supposed to do. So I think we have to come to that decision. My own view—I think that there are some good options that I think we will be pretty clear on that.

That ties in, I think, with our decision about the Harker plan. There are some other issues that I think we should also be—obviously, we have in front of us the overnight bank funding rate (OBFR) issue about switching from the federal funds rate to OBFR. I think once we've made this decision to go to an abundant reserves floor system, I think the arguments for OBFR become compelling, and we should be planning for that and communicating that.

And then there's this ultimate composition of the balance sheet. Actually, I don't think we need to decide the ultimate composition of the balance sheet in March or April or May. But we do have to start thinking about—and we talked about this in the previous meeting. Right now, looking at the end of the year, we are going to have a balance sheet that is heavily in very long-duration Treasury securities. And thinking about, how do we get to our preferred duration of the balance sheet, over what time frame, and how we should best approach that—those are decisions we're going to need to be making as we move along. Late this year we could just continue on the Treasury securities for the reinvestment into the—as we are doing now, we can make a pretty straightforward decision on MBS. But if we ever want to get to these issues about re-creating, as many people said, a balance sheet that gives us more policy space, we're going to have to, actively, buy into T-bills and actively move the balance sheet that way. Again, these are topics that we're not in a rush to come to decisions on. We can do that over a number of meetings. But I do think those are meaningful decisions that follow from the other ones that we have.

So, again, I'm supportive of the approach regarding both the statement to be issued tomorrow and—subject to further editing and thinking—in March finalizing the revised policy normalization principles and plans. I hope we get some clarity on some of these operational issues and then continue to move forward. Thank you.

CHAIRMAN POWELL. Great. Thank you. I'm going to propose that we break for lunch. Thanks for your patience. Thanks for controlling your hunger and your "hangriness." [Laughter] We'll be back here at 2:00.

[Lunch recess]

CHAIRMAN POWELL. All right. Thanks, everyone. We can get started again. So thanks for a very interesting discussion this morning—a lot of common ground there. We're working a little bit with the statement, and we'll come back tonight with something and then, I hope, get everybody to sign off on that in the morning. In the meantime, let's get started again with the review and discussion of the economic and financial situation. Bill Wascher, Steve Kamin, and Michael Kiley will provide the briefings. Bill, over to you.

MR. WASCHER.[3] All right. Thank you, Mr. Chairman. I'll be referring to the materials in the packet labeled "Material for Briefing on the U.S. Outlook." The available indicators—which are fewer than usual because of the partial government shutdown—suggest that real activity ended 2018 on a solid note. As you can see from panel 1 of your first forecast summary exhibit, we now think that real GDP rose at an annual rate of 2¾ percent in the fourth quarter of last year, ½ percentage point faster than our December Tealbook estimate. This upward revision mainly reflects the incoming data on consumer spending; in particular, the Census retail sales data through November—the black line in panel 2—came in stronger than expected. The release of December's retail sales report was delayed by the shutdown; however, other indicators of consumer purchases—such as credit and debit card transaction

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

data received from First Data, the red line—suggest that the pace of household spending remained strong last month.

The December employment report—which was not delayed by the shutdown—also points to continued strength in real activity. On the household side, the unemployment rate rose 0.2 percentage point in December, to 3.9 percent. However, this increase in the unemployment rate was accompanied by a similar-sized increase in the labor force participation rate. Meanwhile, private payroll employment in the BLS's establishment survey—the red line in panel 3—rose 300,000 in December, with upward revisions to previous months.

The strength in the BLS payroll figure was corroborated by our translation of the firm-level data collected by the payroll processor ADP; combining the two estimates with a statistical model—the blue line—implies an estimate of private job gains in December that well exceeds the pace that we judge to be consistent with an unchanged level of labor utilization. We think that some of the December payroll gain is attributable to transitory factors and so expect private employment to rise at a slower—but still well above trend—average pace of 190,000 jobs per month over the first three months of this year. As far as January is concerned, ADP data through the first three weeks of the month are consistent with another solid increase in private employment.

Although we think that the economy entered 2019 with a considerable amount of forward momentum, we anticipate that output growth will moderate some in the current quarter. In particular, growth in consumer spending in recent months appears to have been faster than its fundamentals would have suggested, and we expect to see PCE growth move back down this year to a rate that is more in line with real disposable income growth. This expectation is consistent with the latest readings on consumer sentiment, which have softened noticeably. Likewise, we expect growth in business fixed investment to step down from its pace in the second half of last year. Such a slowing would be consistent with recent readings on durable goods orders as well as the less upbeat tone of the various indicators of business sentiment.

To provide some additional perspective on the current quarter, panel 4 plots the distribution of available System nowcasts for first-quarter real GDP growth, the gray bars, together with our January Tealbook projection, the vertical red line. Importantly, the models underlying these nowcasts draw on a broad range of spending and activity indicators, as well as various pieces of financial market data. Hence, their perspective is especially useful at present, as the government shutdown has delayed a number of key economic data releases and in light of the recent volatility in financial markets. As you can see from the panel, the Tealbook's projection of a 2¼ percent increase in first-quarter real GDP is not wildly at odds with the median model nowcast, especially given that the model nowcasts—unlike the Tealbook forecast—only incorporate the effects of the government shutdown to the extent that they are already present in the various indicators that the models employ.

As noted in panel 5, the partial government shutdown, which ended—at least temporarily—last Friday, was about one week shorter than we had assumed in the Tealbook. Assuming that an agreement is reached in the next three weeks to keep the government open, we now think that the direct and indirect effects of the shutdown will subtract ¼ percentage point from annualized real GDP growth this quarter after having shaved half a tenth off last quarter's growth; these cumulative reductions in growth, which are a touch smaller than we built into the Tealbook projection, should then be reversed in the second quarter.

According to the BLS, the shutdown will have no effect on measured federal government employment from the establishment survey, though there will likely be some private-sector job losses among government contractors and other establishments affected by the shutdown. In the household survey, furloughed federal workers should be classified as being on temporary layoff—and, hence, as unemployed—and so we expect these workers will temporarily add a tenth or two to the January unemployment rate.

Let me return to panel 1. Our medium-term forecast for real activity is a touch weaker than the one we showed you in December. This reflects our lower expected path for equity prices, as well as a judgmental adjustment we made that was intended to capture our view that heightened concerns about the economic outlook will turn out to be a larger drag on private spending than we had previously thought. Indeed, one question we have been wrestling with is whether the recent volatility in financial markets is signaling something about the prospects for the real economy that isn't being captured by our nonfinancial indicators and thus warrants a larger downgrading of our baseline projection. In the end, we decided to put only a little weight on this interpretation of recent financial market movements in formulating our baseline forecast and illustrated the possibility of a more severe slowdown in the economy in an alternative simulation shown in the Risks and Uncertainty section of the Tealbook.

Accordingly, the overall contour of the forecast for real activity is broadly similar to our previous projection. Specifically, we continue to expect that real output growth will outpace potential through 2019. However, as the ongoing removal of monetary policy accommodation and waning stimulus from fiscal policy act to rein in spending and production, real output is anticipated to rise at roughly the same rate as potential in 2020 and then to slow to a below-trend pace in the following year. As a result, the unemployment rate—the black line in panel 6—declines to 3.5 percent by the end of this year and remains at that level in 2020; by the end of 2021, the unemployment rate has edged up to 3.6 percent, which is still a percentage point below our estimate of its natural rate.

Panel 7 on the next page of exhibits plots unemployment rates for various racial and ethnic groups. Over the past year—and in line with the broader improvement in labor market conditions—we have seen continued reductions in jobless rates for most groups. However, persistent differentials across groups remain a noticeable feature of the data.

The panel at the bottom of the page provides a slightly longer perspective on how changes to our conditioning assumptions over the past several months have affected our real output projection. My point of comparison here is the September Tealbook forecast, as September was the month in which stock prices peaked. As indicated by line 1 of the table, since the September Tealbook we have revised down the projected level of real GDP at the end of the medium term by 35 basis points. This downward revision is more than accounted for by the revisions we made to the expected path of household wealth, line 2, which, in turn, mostly reflects the net declines in equity prices since September. Weaker foreign growth, which is included in the line labeled "other," also contributes to the downward revision in our projection. As you can see on lines 3 and 4, these changes were partly offset by lower projected paths for interest rates, line 3, and the exchange value of the dollar, line 4.

The remaining three panels of the exhibit summarize the inflation outlook. Broadly speaking, the recent price data have come in close to our expectations. Using our translation of the CPI and PPI, we estimate that total PCE prices—the black line in panel 8—rose 1.7 percent over the 12 months ending in December, held down by subdued rates of food and energy price inflation. We estimate that core PCE prices—the red line—rose 1.9 percent over that period. It is true that, by our estimate, core PCE prices rose at a somewhat slower annualized pace of 1.6 percent over the past six months. However, we would caution against taking much signal from this six-month reading for two reasons. First, inflation is typically somewhat noisy year-to-year, let alone at higher frequencies. And second, we think that the PCE price data continue to suffer from the presence of residual seasonality, which tends to depress measured inflation in the latter portion of the year. Looking ahead, we anticipate that core inflation on a 12-month basis will remain around 1.9 percent through the middle of this year. We expect that total PCE inflation will dip further below the core measure in coming months—to as low as 1½ percent—as previous declines in oil prices feed through to consumer energy prices.

Our medium-term inflation outlook—which is shown in panels 9 and 10—is not materially different from our December projection. In particular, we continue to expect that core inflation will edge up to 2 percent by the end of this year and then remain at that level over the rest of the medium term. Total PCE price inflation is expected to run a touch below core inflation this year and next, reflecting our projected path for consumer energy prices over that period; by 2021, we expect total PCE inflation will also be running at 2 percent. Steve will now continue our presentation.

MR. KAMIN.[4] Thank you, Bill. I'll be referring to the next handout titled "Material for Briefing on the International Outlook." Like the rest of you, staff in the International Finance Division have been struggling with the apparent disconnect between the panic signals coming in recent months from financial markets and media, on the one hand, and the merely downbeat tone of the incoming data on foreign economies, on the other. Of course, this is not the first time that the markets and

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

media have called for a global recession that never came. But, as in the story of the boy that cried wolf, I'd hate to be one of those townspeople who ignored the boy's warnings when the beast finally came to call. And so, in an effort to assess the genuine threat to the sheep peacefully grazing in foreign meadows, I have been staring at the chart shown in your first exhibit for some time now.

The blue line in the chart is our Recession Fear Index, which is based on counting media references to recession, the global economy, and uncertainty. As you can see, this has spiked up recently, consistent with all the chatter we've been hearing as of late, as well as with surveys of primary dealers and market participants conducted by the Open Market Desk. But it's important to keep this upswing in perspective. First, fears of a global recession appear a bit lower than in the two previous episodes since the Global Financial Crisis: in 2011, when a heightening of the euro-area crisis coincided with worries that the United States would breach the debt ceiling, and in 2016, when prospects of a China hard landing rocked world markets.

Second, our model-based estimate of the probability of recession doesn't show nearly as much enthusiasm for a coming global downturn as our fear index. The red line shows this estimated probability, derived from a probit model that takes into account both incoming data on economic activity as well as measures of stress in financial markets. As you can see, the index has risen only to about its unconditional historical level of around 20 percent and remains well below the nearly 60 percent mark reached during the 2016 China hard-landing scare. As you can see from previous episodes, it's hardly unprecedented for recession fears to outrun the estimated probability of recession, but it does suggest that confidence in the global outlook is unusually fragile at present, something I will return to later in my presentation.

Your second exhibit unpacks the estimated probability of recession abroad into its two main inputs: the Foreign Activity Index, which measures incoming data in economic activity, and the Excess Bond Premium, which measures risk sentiment in financial markets. Both measures are near their long-run averages—which is why the estimated probability of recession abroad is also close to its average level. This supports our relatively sanguine, but hardly upbeat, projection displayed in your next exhibit.

Our baseline outlook is for continued expansion abroad, albeit at a lackluster pace. During the intermeeting period, plenty of economic indicators moved down further, especially for the euro area, as you can see. Accordingly, we've revised down our outlook yet again and now assess that aggregate foreign real growth will register only 2.3 percent this year, a little below potential, before picking up a little further out.

This forecast, subdued as it is, is nevertheless more benign than the Cassandras of the financial pages have been voicing in recent weeks. It may just be that economists are bad at predicting recessions. Your next exhibit compares our Tealbook forecasts of aggregate foreign growth at different points in time, the red lines, to the actual path of foreign growth, the blue lines. As you can see, we didn't predict either the 2001, or the 2008 recessions abroad, until we were already well into them. However, I prefer to think that the current disconnect arises because the financial markets and media have focused on the downside risks to the outlook—we view those risks as extremely important, but not quite as likely to materialize as the baseline scenario.

Let's start with Brexit. As indicated in your next exhibit, with Prime Minister May's agreement with the EU having crashed and burned in Parliament a couple of weeks ago, the path to an orderly Brexit deal by the March 29 deadline is, to say the least, far from obvious. But only one of the other plausible outcomes to this convoluted and capricious process—the no-deal Brexit, depicted at the bottom right—would likely trigger an immediate recession in the United Kingdom and turbulence in global financial markets. The other outcomes, including the one we view as the most probable—an extension of the deadline, followed by eventual agreement on a Brexit plan sometime later this year—would prolong the uncertainty and weigh on the U.K. economy but would have only modest spillovers elsewhere.

Similarly, as shown in the first panel of your next exhibit, there has been a surge in the media focus on a hard landing in China, and such an event would be hugely consequential for the global economy. Indeed, much has been made of the release of Chinese GDP data, with headlines proclaiming 2018 growth to be the slowest since 1990. But to put this into perspective, China's potential output growth has been on a declining trend for years, reflecting such structural factors as the aging of its population, the natural slowing of an economy in the process of technological convergence, and rebalancing toward domestic consumption. In addition, though 2018 saw some cyclical slowing of the economy as well, much of that reflected the falloff in credit growth—shown in the right panel—associated with the government's deleveraging campaign. With the authorities now easing up somewhat on that campaign and providing some fiscal stimulus as well, we expect credit and GDP growth to pick back up later this year before resuming its downward trend. To be sure, the risks of a financial crash remain, but we don't view that as the most likely scenario.

Your next exhibit addresses a third downside risk, trade policy. As you can see in the left panel, trade policy uncertainty, or TPU, has soared this year, whether measured by references in newspaper articles, the red line, or in corporate earnings calls, the black line. As we discussed at the December meeting, your own conversations with interlocutors pointed to trade policy as a key uncertainty facing U.S. corporations. But it's been challenging to square these observations with the quantitative analysis. As shown on the right, even if all the trade actions signaled by the Administration were enacted, and if the knock-on effects of such actions on confidence and markets were also considered, our models—as well as those of outside analysts—suggest an effect on U.S. real GDP on the order of about 1 percent over the next couple of years.

Furthermore, concerns about protectionism don't seem well correlated with the parties most likely to be hurt by it. As seen in the left panel of your next exhibit, the black line charts the differential between the stock prices of U.S. companies with high foreign sales—who are most exposed to foreign retaliation against U.S. firms—and those of companies with low foreign sales. In principle, companies with high foreign sales should have been hit harder by the rise in TPU, but that doesn't seem to have happened. Finally, the right panel focuses on references to trade policy uncertainty in corporate earnings calls, measured along the vertical axis, and compares them to the trade exposure of those corporate sectors, measured along the horizontal axis. Strangely, we see only a very loose correlation between companies' trade exposure, as measured by their foreign sales, and their complaints about trade policy uncertainty.

Now, it's possible that the effects of trade barriers may be more subtle and diffuse than can be captured in this quantitative analysis. Alternatively, it may be that concerns about trade policy stem from deeper anxieties about a changing business environment where the rules of the game are in flux. Either way, financial markets and media seem to be placing considerable weight on the broad range of downside risks to the global outlook, and we are struggling to assess how much signal to take from them. But even if the underlying fundamentals are stronger than the market chatter would suggest, this should provide you with only limited comfort. With confidence and markets as jittery as they are at present, greater worries about recession could contribute to further stresses in financial markets, which, in turn, can raise the likelihood of those fears coming true. And even if those fears center on prospects abroad, they can spill over to the U.S. economy.

To illustrate this point, I'd like to return to the 2016 China hard-landing scare. As indicated in your next exhibit, between mid-2015 and March 2016, U.S. asset prices gyrated along with global markets: equity prices fell, high-yield spreads widened, and the dollar rose. On the somewhat strenuous assumption that these movements in U.S. assets entirely reflected exogenous spillovers from worries about China and other foreign economies, we plugged these movements into our SIGMA DSGE model. As indicated in your next exhibit, compared with the evolution of the economy envisaged by your SEP projection in December 2015, the blue bars, the shocks to asset prices shown on the previous slide would, as indicated by the red bars, have lowered U.S. real GDP growth, reduced inflation, and led the federal funds rate—based on a Taylor rule—to rise only 50 basis points in 2016, compared to the 100 basis points predicted in the SEP. This suggests that concern about financial spillovers associated with worries about foreign real GDP growth can explain most of your decision to raise rates only 25 basis points in 2016, shown by the green bar, 75 basis points less than your December 2015 SEP median forecast.

This is all to say that market and media worries about downside risks, even if seemingly ungrounded in economic fundamentals, may pose challenges for U.S. economic activity and require corresponding policy responses. Mike will now continue our discussion.

MR. KILEY.[5] Thanks, Steve. I'll be referring to the "Material for Briefing on Financial Stability Developments." Since the *Financial Stability Report,* which was based on data through October, we've seen a material step-down in risk appetite. Staff from throughout the System are currently reviewing the full set of developments in asset valuations, nonfinancial borrowing, financial leverage, and maturity transformation, in preparation for the quantitative surveillance report we'll circulate next month. Today I'll review the main developments since October, and particularly focus on our assessment of valuation pressures, beginning with your first exhibit.

Financial markets have seen increased volatility since the end of the summer and especially around the end of last year, as summarized in the upper-left panel. The step-up in volatility was most pronounced in equity markets, the blue line, but was also apparent in fixed-income markets, as summarized by the level of implied volatility in 10-year swaps. As you know, volatility in financial markets had been low, relative to historical norms, for much of 2017 and 2018, excluding the short-lived jump early last year. From that perspective, the increase in volatility seen over much of last fall represented a return to historically more typical levels of volatility. However, the jump last month was outsized. Much of this increase may reflect the tendency for volatility to increase when risk sentiment deteriorates. At the same time, we are attuned to reports by market participants that trading conditions were strained during this period, and this may have further boosted volatility.

As shown in the panel to the right, traditional liquidity metrics, such as the bid-ask spread, the black line, provide some support for the notion that market liquidity was thin, although the level of such metrics does not appear especially unusual, conditional on the level of volatility observed. That said, some other metrics indicate greater strength. We'll be focused on the degree to which markets may have become more fragile in response to changes in technology, investor composition, intermediaries' business models, and regulation. At this point, we would not point to any one factor—such as an increased role for high-frequency trading, or algorithmic strategies—as a clear driver and see the shift in risk sentiment as likely an important factor, as is normally the case.

Now, that description refers much to the developments in December. Maybe I could take an opportunity to take the 50,000-foot perspective. I'm going to follow up on the exchange between President Kaplan and Lorie earlier this morning. Certainly, we have seen an evolution in the way in which market liquidity is provided over the past decade, and we see that as sort of qualitative and quantitative indicators. For example, a qualitative story includes changes in the way that dealers like to provide liquidity. A traditional model would be taking securities into inventory to facilitate trades. For a variety of reasons, related potentially to technology and regulation, there's been an increase in dealers' desire to sort of find matched pairs of transactions and facilitate trades by matching buyers and sellers and not taking securities into inventory. Complementing that, we've seen changes over time—trends like changes in the size of transactions and things. We've obviously been looking at this over time

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

and I would say our broad view, over the past several years, has been that there's no one clear driver, market liquidity has been good, and it's not clear that these evolutions have been indicative of market fragility. Of course, the data continue to accumulate, and what we do when we get more data is that we decide whether we need to change our mind. One of the priorities for us this year that emerged when we were talking last week about our agenda for financial stability, is thinking about whether resilient institutions are being accompanied by changes in the fragility in markets. We'll be reassessing the evidence on that topic.

Now let's return to your regularly scheduled programming and step back from December's volatility. Changes in asset prices show clear cooling in valuations in equity and corporate debt markets. As shown in the middle-left panel, a staff measure of the equity risk premium—that is, the extra compensation investors demand to hold equities relative to Treasury securities—has jumped above the range that has prevailed over the past two years.

Spreads on corporate bonds, shown on the right, have similarly moved up considerably. Our overall assessment of valuation pressures casts a wide net, looking across equity, corporate debt, residential real estate, commercial real estate, and other markets. We have not yet seen much sign of cooling in commercial real estate, which has shown valuation pressures over the past few years. Somewhat in contrast, residential house prices appear to be experiencing pressures in only some regions, and national house prices appear to have remained only modestly above their long-run relationship with rents. As we put things together, we view the cooling in equity and corporate debt markets as signaling a sufficient pullback in risk appetite to downgrade our assessment of overall valuation pressures from "elevated"—where they have been since mid-2017—to "notable," one notch below "elevated" on our ratings scale.

The ebbing of risk appetite in the corporate debt market was also clearly evident in the leveraged lending market. As shown in the bottom-left panel, spreads on lower-rated newly issued leveraged loans blew out last month; we also saw a sizable decline in the price of loans in the secondary market and a slowing in issuance of new loans, both not shown. At the same time, market participants and available data indicate that deals were completed as pricing flexed in a direction more favorable to lenders to clear the market. Moreover, banks did not face notable pipeline pressures despite market conditions, although some of this favorable outcome may have reflected the fact that December is a seasonal low point for deals.

As a final note related to leveraged lending, as shown in the panel to the right, returns on bank loan mutual funds—funds that invest in leveraged loans—turned sharply negative late last year, the blue line, and December witnessed the largest outflows from such funds since 2011, the red bars. In our regular assessments and elsewhere, we have repeatedly emphasized that the ability of investors to redeem shares of such funds on a daily basis could place strains on leveraged lending markets given the limited trading liquidity in the secondary market for loans. While we cannot exclude some effect of fund redemptions in the decline in secondary market prices, reports we've received suggest that redemptions proceeded in an orderly manner, as CLO managers stepped in to purchase loans when secondary prices fell.

Your next exhibit briefly summarizes developments outside valuations. As shown in the first panel, despite slowing in the high-yield bond and leveraged lending markets late last year, the increase in the sum of these types of debt—so-called risky debt—over 2018, was the largest since 2015. Partly as a result, business debt outstanding—the red line on the right—sits near historical highs relative to GDP. We see the elevated level of corporate debt as likely to imply some amplification of adverse shocks through the business sector and will provide a set of memos on this topic as part of the February quantitative surveillance package. In contrast, we judge the risks associated with household-sector debt as moderate, partly reflecting the sizable deleveraging that has occurred in this sector over the past decade, the blue line.

We continue to see risks associated with financial leverage as low, owing importantly to the substantial decline in leverage in the banking sector, apparent in the increase in common equity relative to assets, shown in the middle-left panel. As we have emphasized previously, financial leverage also appears moderate or low elsewhere in the financial system, including at insurance companies and broker-dealers. One sector in which leverage increased during the risk-on period of 2017 was hedge funds, as shown to the right. It appears that net leverage at hedge funds ebbed over 2018, perhaps owing to the increase in volatility and shift in risk sentiment. That said, the indicator of leverage shown is only a partial view of leverage within the hedge fund sector, and more comprehensive data are available only through early 2018.

We also continue to see vulnerabilities related to maturity transformation as low. Important contributors to this assessment are the shift away from wholesale funding at the large banks, shown in the bottom-left panel, and the reduction in assets under management at the prime money market funds. We have seen some increase in assets under management at money market funds since 2017, shown to the left, reportedly reflecting attractive yields relative to alternatives such as bank deposits. This development points to the possibility that banks may need to compete more aggressively to retain deposits. That said, the shift has been modest—while assets at prime money funds have increased more than $100 billion since 2017, most of this increase has occurred in retail funds, which appeared much less prone to runs than institutional funds during the crisis. And this increase is a small fraction of the more than $1 trillion decline in assets under management in prime funds following the SEC reforms in 2016. And that concludes our set of remarks.

CHAIRMAN POWELL. Thank you. Questions now for our briefers? President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. Steve, what I recall from the China slowdown in 2016 was that there was a lot of attention on their foreign exchange reserves. They had been accumulating reserves for about a decade. It seemed like there was a pretty sharp reversal, and there was concern that they might burn through their massive reserves. Is there any such focus today? Do you know what's happening to China's reserves? Is that something we should be paying attention to?

MR. KAMIN. We certainly do pay attention to it, and that is an important difference between now and the 2016 scare. The 2016 scare was a combination of worries that the economy was going into recession, and that there could be a very large Chinese devaluation—both prompted, in principle, by concerns by the Chinese authorities that their economy was slowing down, and also by strong capital outflows at the time. In fact, a lot of the fears were triggered by some rather poorly handled, very small devaluations by the Chinese at that time.

More recently, Chinese reserves have been broadly stable—a little bit of reserve drawdown within the past quarter or two but, broadly speaking, pretty stable. And net capital flows into and out of the country have been in the neighborhood of zero for the past few quarters. So that's a big difference, and that's at least one reason why the current worries about China, pronounced as they are, are not as bad as they could be.

CHAIRMAN POWELL. Governor Quarles.

MR. QUARLES. Mike, just a question. So on the statistic about corporate debt to GDP being at historically high levels, I also hear the argument that the corporate sector relative to GDP is also at historically high levels, so the actual leverage of the sector, as a percentage of GDP, is not particularly hot. So how should I think about that? Is there still a financial stability risk, even if the corporate sector itself doesn't have higher leverage, if it is a higher percentage of GDP, or how should we be thinking about that? Or is that true? Is that a factoid? Is it a fact?

MR. KILEY. I think the factoid is true that the business sector is a larger portion of GDP today than at various points in the past--and, in particular, the corporate sector—both reflecting the fact that the corporate sector is a larger share of the business sector. We still view this as a vulnerability for a couple of reasons. One, the corporate sector is still somewhat highly leveraged. If we look at its debt relative to its assets, it's still high, especially for risky firms. Now, we don't want to go crazy. There are good reasons why there is more debt in the business sector—interest rates are low, the sector is larger. I think a secondary consideration, in the back of our mind, is that while the business sector is a larger portion of GDP, and that suggests that solely looking at its debt relative to overall GDP could be somewhat misleading for the risk in the business sector, it's also important to remember that the business sector is a larger part of GDP. So if the business sector comes under strain, it has a larger effect on GDP because it's a larger part. So it's a mixed bag. There's a good element of it being larger and an element where, okay, if there are strains in that sector, those strains have, just arithmetically, a larger effects on GDP.

So I think when we put that all together, we want to be sure we're attuned and focused on this. I think it's pretty clear if you look at the picture. We're not saying that we think the business sector looks like the household sector a decade ago. The picture shows that really clearly. But we don't want to be saying everything is hunky-dory either.

MR. QUARLES. Fair enough.

CHAIRMAN POWELL. Other questions? President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. So I have a question for Steve Kamin. This deck talks about trade policy and it talks about China, but it doesn't talk about China and trade policy. Do you think trade policy uncertainty is a good reason to think that maybe the Chinese economy is weaker than otherwise? And if the trade war drags on for some length of time, could this be detrimental to Chinese growth prospects?

MR. KAMIN. I think the answer to the last question is certainly yes. But just, to expand on that: Again, if you look at the concrete quantifiable kind of like effects of our trade policy on China, they seem to be pretty small so far. We're putting the effect of measures taken so far to be in the neighborhood of ⅓ percent of GDP in terms of the negative effect on China. And then if we ended up following through with the additional measures that have been discussed, but not yet implemented—which is raising tariff rates on $180 billion of imports from China that we already have started to tariff, and adding tariffs on another $200 billion or so—then we think the effect of that on China could be about ¾ percent of GDP, stretched probably over a couple of years. That's obviously not a negligible amount—that's actually fairly material in the context of their falling growth—but it's something that would be broadly manageable.

This does not take into account, however, the fact that an environment in which China's exports face increasing limitations, particularly with regard to the major trading partners, could lead to a lot of slowdown in investment in China, and a lot of diminishing of sentiment in financial markets. So again, the quantifiable effects are not so large. But, taking into account a lot of likely possible repercussions, they could be quite significant.

MR. BULLARD. But just following up, I'm looking at slide 11 here. This seems like saying that not that much happened in China in 2016, but nevertheless the repercussions for the deliberations around this table might be pretty substantial, because these numbers are actually fairly large.

MR. KAMIN. Right.

MR. BULLARD. From the perspective of policymaking.

MR. KAMIN. In the event Chinese growth had actually already slowed significantly in the last part of 2015 and actually started to pick up later in 2016. So the hard landing that a lot of people were worried about, did not take place, but the knock-on effects on financial markets did take place, and that was something that led to a tightening in U.S. and other financial conditions.

MR. BULLARD. Thank you.

CHAIRMAN POWELL. Any other questions? [No response] If not, we'll go to our first set of comments on financial stability beginning with President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. Market downdrafts such as we saw at the end of the year can provide insight into potential financial stability problems that may deserve more attention. Two fault lines that were partially exposed are worth mentioning.

The first is the freeze-up of transactions that occurred in the highly levered lending and high-yield bond markets. Although amid heightened financial market volatility, it is noteworthy that this freeze occurred during a quarter in which growth is likely to be well above potential, the unemployment rate is low by historical standards, monetary and fiscal policies are accommodative, and delinquency rates are quite low. The market absorbed the freeze largely because of this healthy economic backdrop. But even so, the ability to roll over financing was somewhat impaired. The dynamic could be much more troubling in a weaker economic environment in which there were more significant losses—for example, arising from an unexpected increase in defaults—which could prompt even larger redemptions from leveraged loan mutual funds than observed in Q4 of 2018. Simulating what would happen in an extensive freeze but with less positive underlying economic conditions could provide us some insight into how much risk is being generated by allowing corporate leverage to become so large. Of course, we should model not only what happens to our banks, but also the effect that cascading problems at firms could cause for the economy overall.

The second area of concern is excessive confidence in the protection afforded by healthy bank financial ratios. For the past several years, I've been concerned about the financial stability risks generated by undercapitalized and underperforming European banks that could seriously affect the euro area but would also pose a serious complication for the United States.

As frequently occurs during market downturns, attention increasingly turns to those European banks that are underperforming. Most notable is one of the largest globally important German banks. Its ratios look great. Here, tier 1 common equity is currently 14 percent, and its LCR is 148 percent. Over the past five years, its stock price has fallen 75 percent, and its CDS spread has more than doubled. Press reports indicate that capital and liquidity ratios that are well above minimums are providing little comfort. Financial press reports are highlighting merger proposals, and counterparties have been reported to be reducing exposures. That this bank is under such pressure, once again, even though its capital and liquidity ratios are high, even by our standards, should warn us against complacency following the significant post-crisis progress we've made in strengthening our own banks' capital and liquidity requirements.

We should question whether our supposed gold plating of financial ratios on systemically important financial institutions is really sufficient to ensure financial stability in times of economic stress. Furthermore, gold plating should be thought of not only in terms of calibrating minimum requirements on specific ratios, but also in terms of ensuring that the system of regulatory requirements and supervisory tools as a whole is truly sufficient to protect the financial system and the broader economy against the range of problems that institutions may face in a crisis. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. Although bond spreads are now near the center of their historical range, compared with being well below it previously, risky corporate debt remains at historically high levels. After drying up in December, the pace of risky debt issuance appears to have picked up again in recent weeks. That run-up in corporate debt has brought the ratio of debt to assets for speculative-grade and unrated firms to its highest level in two decades. An analysis of detailed balance sheet information indicates that it's the firms that have high leverage, high interest expense ratios, and low earnings and cash holdings that have been increasing their debt loads the most.

For corporate bonds, credit quality has deteriorated within the investment-grade segment, and market participants are very focused on the share of bonds rated at the lowest investment-grade level, which has reached near-record levels at about $2¼ trillion overall. This is particularly notable because these bonds are vulnerable to downgrades in the face of negative shocks, because total assets under management in bond mutual funds have more than doubled in the past decades, and because these funds now hold about one-tenth of the overall corporate bond market. Forced sales could lead to liquidity dislocations.

Further down the credit quality ladder, leveraged lending grew about 12 percent over the past year, and there too we saw notable deterioration of underwriting standards. Estimates of the amounts outstanding are at around $1 trillion, and commitments were reported at about $2 trillion. Covenant-lite transactions now represent 80 percent of that market, up from less than

30 percent a decade ago when they were associated with primarily stronger borrowers. And deals increasingly involve features that increase opacity and risk.

The most recent shared national credit report assesses that the number of loans identified as “classified” or “special mention” is elevated compared to prior economic cycles. Within this group, 73 percent of special mention loans, 87 percent of substandard loans, 45 percent of doubtful commitments, and 76 percent of losses, are concentrated in leveraged loan transactions. For classified and special mention loans, although the largest share is held by nonbank investors, the share held by U.S. banks is nonnegligible at more than 20 percent.

While those direct exposures of the banking system in the form of loan portfolios and warehousing exposures are closely tracked, there are also indirect exposures, including through bank investments and CLOs that they hold on their balance sheets. In addition, the mutual funds that have built up large exposures to this risky debt have liquidity mismatches that could contribute to market dislocations, and we saw, as Mike Kiley mentioned, that bank loan funds saw the largest outflows since 2011 in December.

Against this background, we need to continue examining whether we consider supervised financial institutions sufficiently capitalized. With the economy still solid and recent bank earnings strong, it’s a good time for banks to be safeguarding their capital rather than racing to return earnings to shareholders. Recent history suggests the business cycle and the financial cycle are increasingly intertwined. The past two expansions actually ended because of financial imbalances, and junk bonds played a key role in the recession of the early 1990s. Sound macroprudential policy should seek to counteract the inherent cyclicality of market-based capital. With risks mounting, if banks are to maintain the same degree of resilience, they actually need to have a higher ratio of capital to assets. Over the past few years, instead of building capital buffers, the amount of regulatory capital, relative to both risk-weighted assets and total assets, flatlined. For G-SIBs, the ratio of common equity to risk-weighted assets actually moved down over the past two years.

Along with several others around this table, I recently participated in a tabletop exercise developed by the COP—the Committee on Financial Stability, under President Mester's leadership. The strongest "takeaway" I saw flowing from that exercise was how valuable it is to have a tool that can be released as an economic downturn starts. It provides a valuable signaling mechanism, separate from monetary policy, that can help to reinforce accommodative communications at a time when the Federal Reserve seeks to buffer the economy and lending from shocks. U.K. authorities echo that conclusion.

For those reasons, it seems wise to ask banks to retain a very small buffer of countercyclical capital over the course of the next year. This would level up the playing field so that banks would feel less competitive pressure to pay out all of their earnings. This buffer could be released if the economy weakened to encourage banks to keep the credit pipes open when most needed. And finally, using tools such as the CCyB to address these financial risks allows monetary policy to focus squarely on its dual-mandate goals. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chairman. So the Grinch tried very hard to stop Christmas from coming last year, and during the market turmoil in December we once again heard from market participants that lack of liquidity contributed to the volatility, and that some of our regulatory safeguards exacerbated those liquidity pressures. In the end, however, Cindy Lou Who prevailed once again, and as we sit here a month later, things appear to have stabilized.

As equity markets have reversed some of their fourth-quarter losses, corporate debt issuance has resumed, and volatility has come back to normal levels.

So what lessons can one reflect on as a result of that episode that relate to the stability of our post-crisis financial system? The first, rather obvious one, is that when asset prices reflect a great deal of optimism, they can get bumpy as investors become nervous or worried that other investors are becoming nervous, or worry that other investors are worrying that other investors may become nervous. And, with the benefit of hindsight, it now looks like investor appetite for risk peaked in late summer of last year, and, after a series of dramatic swings, it has clearly eased significantly.

Concern apparently centered on the corporate sector in equity markets. As Mike noted in his presentation, the staff's estimate of the equity risk premium is notably higher than it was in September. Spreads on risky corporate debt widened. Issuance of high-yield bonds and leveraged loans was almost nonexistent in December through early January. Those markets started functioning again in recent weeks, but spreads on both bonds and loans remain much higher than their lows last year. So on balance, the easing and risk appetite has left asset prices less vulnerable to a big downward shock and reduced the pressures that were generating outsized volumes of risky corporate debt. I think insofar as that goes, that is a positive development with respect to stability, whatever the macroeconomic implications of it may be, and I think we should still obviously be watching developments in commercial property markets where we haven't seen a major retrenchment.

A second lesson to reflect on is the fragility of market liquidity. Lorie, in her presentation, showed that the depth of the Treasury securities market declined in December.

Equity markets showed a similar pattern. Those declines clearly exacerbated the volatility that we saw.

There are a number of factors operating there. The shift to electronic execution of trades means that algorithms have replaced the old floor specialists—the point that President Kaplan has been making—and whatever their faults, specialists guaranteed that a human would gut-check prices. Passive or quantitative investment strategies are more popular now—that encourages herding. And reports are that a number of dealers constrained financing to clients in December, again perhaps exacerbated by regulatory safeguards. So I completely agree with President Kaplan that this is an area in which we need to continue to dig, in which we need to understand more of what is driving these liquidity pressures that I think are clearly there. And no doubt we'll gain additional insight in the coming weeks and months.

We also learned, I think, that the run risk in bond and loan mutual funds may not be as great as we feared. Obviously, mutual funds holding high-yield bonds and leveraged loans offer daily redemption, even though it can take a lot longer than that in order to sell the bonds and loans that are in the portfolio. That can create an incentive to be the first out the door when turbulence hits. Yet in December turbulence certainly hit, but as Mike showed in his briefing, while mutual funds that invest primarily in leveraged loans experienced record outflows—about 10 percent of their total assets under management—we didn't get any reports of a fund experiencing severe distress. We didn't see a repeat of the episode in late 2015 when a lone mutual fund suspended redemptions. So, to me, this suggests that the run dynamic may be substantially less among longer-term mutual funds than it is, for example, among money market funds, because that was a reasonable shock in December that they seemed to handle fairly well.

On corporate debt, I continue to believe we should closely monitor vulnerabilities that are created by the high level of corporate debt, but I see those vulnerabilities as more salient for our discussion of the risks and uncertainty associated with the economic outlook rather than financial stability implications. In particular, large U.S. banks remain well capitalized against their direct and indirect exposures to corporate debt, and in furtherance of that, on February 4 we'll be releasing the macroeconomic scenarios and the global market shock for the 2019 stress tests and comprehensive capital analysis and review (CCAR). As described in our framework, those scenarios will feature a larger increase in the unemployment rate than last year and an associated larger decline in economic activity, along with the usual severe decline in business credit conditions, and that combination of factors should serve to severely stress the corporate loans and collateralized loan obligation (CLO) securities that are held on the books of the banks.

In closing, then, it appears that our financial markets have now proved quite resilient to the types of moderate and reasonably short-lived shocks to risk sentiment that we experienced in the fourth quarter, though the potential strains in liquidity of various markets, I think, are something that we need to study further. And it's also important to keep in mind that these market dynamics played out against a fundamentally sound economic outlook. We're still awaiting the test of the resilience of financial markets to these vulnerabilities in a true downturn, rather than a standard market correction, though of course we also continue to hope that such a test will be indefinitely postponed. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thanks. And now we'll move to the economic go-round, and we'll begin with President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I have several comments here. I'll talk a little bit about broad comments on the outlook, a little bit about whether expansions die of old age, a little bit about the Tealbook, and then a little bit about market-based inflation expectations.

District contacts continue to say that 2018 was either a good year or a very good year, but they view 2019 in a more negative light. They see a slowdown in their business. Some firms are stress-testing against a possible recession in 2019 or 2020. Some of you saw the chief financial officer (CFO) survey from late last year that had 75 percent of large companies' CFOs predicting recession by the end of 2020. I think that is a common view, as that survey would indicate, in the business community and certainly among our business contacts.

Inflation remains low, and inflation expectations suggest that the Committee will actually miss its inflation target to the low side for the eighth year in a row in 2019. The five-year market-based inflation compensation is 1.8 percent today. As reported earlier in this meeting, if you subtract three-tenths off that, to translate from CPI to PCE inflation, you get only 1.5 percent interpreted as straight inflation expectation. That would say that the Committee will miss its target over the next five years actually, not just in 2019. I do think that the policy being contemplated at this meeting may help to address this problem. One thing I like about market-based inflation expectations is they do react to market data, and they do react to policy announcements, and you can grasp some of the effect of the policy announcement by watching these movements.

The real economy looks set to grow slower in 2019 versus 2018, which is almost universally predicted. At this point, it's possible Q1 could be particularly weak maybe, depending on how the shutdown scenarios work out. If that happens, it may behoove the

Committee to wait and see whether the second quarter bounces back, as it has in previous years, or whether the economy slows down further as we go through the year.

U.S. labor markets continue to perform well, but this strikes me as a backward-looking indicator at this juncture. The time has probably passed when we can simply cite the idea that labor markets are performing well as a reasonable indicator about what will happen over the next 12 to 18 months. Also, no matter how tight you think labor markets are, the feedback to inflation is exceptionally weak. The Phillips curve is exceptionally flat. Some estimates would put the ratio at 10–1, so you would need—for instance, in the chart we just saw, the unemployment rate would fall 40 basis points. If the ratio is 10–1, that would cause 4 basis points of inflation, which is something we can't really measure in our inflation sophistication right now.

We have already normalized substantially more than 200 basis points on the policy rate, with real GDP growth naturally slowing anyway. Now may be a good time to see how the economy reacts to our past normalization steps.

On the question of whether expansions die of old age, during our briefing process this round we did a deep dive on this issue. The standard response of all of us, I think, is to say expansions do not die of old age, and I think the Chair and the former Chairs for sure, have used this piece of rhetoric. Our examination of the literature is that the evidence is far more mixed than this one piece of rhetoric would suggest. The papers have actually come out with a variety of results on this question about duration-dependence of expansions. So I think the Committee may wish to be more careful about this. It certainly made me want to be more careful about this talk on Wall Street, or around this table, about "late-stage expansion" or "late in the expansion" or "late in the business cycle," might have more relevance than you think it does.

In a bit of economics humor, the paper by Diebold and Rudebusch, which was published in 1990 on this topic, was written in the late ’80s, when people were talking about, how long can the ’80s expansion go on. And they came to the conclusion in that paper that expansions do not die of old age. And then they published the paper in 1990 pretty much simultaneously with the beginning of the recession. So the expansion eventually did die of old age, but not until they had published the paper. So it was a masterful piece of research. [Laughter.]

I have some comments on the Tealbook. The charts on page 5, which show how the forecast has evolved over the past six months, I think, gave a good picture of a September time frame when we were thinking 3 percent growth in the fourth quarter, 3 percent growth in the first quarter—a very robust winter outlook. And it moderated significantly since that time, so I think that does a good job of bringing in the nature of the shock that hit us and financial markets during the past six months or so.

The Tealbook remains outside the Blue Chip top 10 for both short- and long-term nominal interest rates. The Tealbook continues to have an inverted yield curve at the end of 2020—a substantially inverted Treasury yield curve. This is not something that has ever happened historically in the United States. I’m not quite sure how we can get to that conclusion, given the preponderance of evidence in the postwar U.S. data. Just to put some numbers on this, the Tealbook is 150 basis points above the Blue Chip median on short-term rates during the forecast horizon. So I think this is a case in which the model has outlived its usefulness and probably needs some fixing. You’re talking about a forecast community in the Blue Chip that does this for a living and is giving substantially different predictions on rates, but not on other variables. They are saying you can achieve all of the outcomes on all of the other variables, basically the same as what the Tealbook has, except for rates, which have to be dramatically different according to the Tealbook versus what the rest of the forecast community is saying. So I think we should ask, and demand, that this be reconciled one way or another. And I'd like to see that so that we get a better basis for the discussions around this table here.

The Tealbook page 54 has five-year TIPS-based inflation compensation. It fell about 50 basis points from September through the end of 2018. It did rebound on more dovish rhetoric from the Fed in the early part of this year. I read this as markets interpreting the Committee as overly hawkish in late 2018.

There is a box on longer-term inflation compensation, pages 60 and 61 of the Tealbook. The box argues that observed declines in TIPS-based inflation compensation are due to factors other than declining inflation expectations themselves. As you see when you read the box, they cite two things. They cite survey evidence, and they cite a staff term structure model. I would say that the survey evidence, if you look at it, has long been badly biased to the upside and has other strange features that make me not want to trust the survey evidence nearly as much as it's trusted around this table. So the surveys are badly biased. What you would have to do is come back to me and explain how households could have such bias in their inflation forecasts and still make sensible household decisions and not learn over time that their forecasts were wrong.

On the term structure model, it's well known that these types of models are notoriously sensitive to underlying assumptions. You can cut up the data in a variety of ways. You will get different results. So instead of trying to always argue that we want to ignore the TIPS-based compensation, I think we should embrace it and take what signal we can from it. I think it's simpler to argue that the survey-based measures of inflation expectations are biased, and insensitive to market developments, because these agents do not generally have skin in the game directly in terms of forecasting inflation, and that market-based measures of inflation compensation reflect market predictions based on all available information. In these markets, any misreading of inflation fundamentals represents an investment opportunity for someone who is participating in these markets. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. Since our previous meeting, uncertainty about many events seems to be on the rise. Fortunately, one type of uncertainty has disappeared—the New England Patriots will be in the Super Bowl. [Laughter]

MR. HARKER. Sorry we can't disagree!

MR. ROSENGREN. Unlike football, however, the economic uncertainty we are facing does not look like it will be resolved by next Sunday. Concerns about a global slowdown, with both China and Europe showing some clear signs of stress, are unlikely to be resolved anytime soon. Domestically, we have self-inflicted uncertainty resulting from trade policy and a previously shutdown government that is operating now on short-term funding. Finally, to compound the heightened uncertainty and financial volatility, we are driving the economy partially blind, with a variety of key economic data delayed by the shutdown. The economic data, before the shutdown, reflected continued strong underlying growth. The payroll employment data we received for December showed continued strength in labor markets. But since that time, there have been enough troubling data that it may take some time before our confidence in the underlying strength of the economy is restored.

Certainly, the most striking developments over the past month occurred in the capital markets. The sharp declines in stock prices right before Christmas caught everyone's attention. Research by my staff examined possible determinants of these stock price movements using a composite uncertainty index, updated earnings expectations, and changes in discount rates.

Their findings are supportive of the view that an increase in uncertainty, rather than lower earnings expectations or higher discount rates, is mostly responsible for the stock price declines we have seen recently.

However their work also highlights that increases in uncertainty that generate declines in stock prices often are not associated with significant movements in real variables. Not surprisingly, these stock price declines did not occur in isolation. They were accompanied by very substantial declines in the 10-year Treasury rate, widening credit spreads, and declining oil prices. These correlated movements across markets give me some pause. I usually take more signal from bond markets than stock markets, but this combination across markets is what one would expect to see were financial market participants seeing signs of a noticeable economic slowdown.

The information on such variables for future economic performance can be approximated by recession probability models, and my staff and many others have run an array of such models and, not surprisingly, produced results that are quite consistent with the results reported in the Tealbook. That said, while these models might indicate potential risks, it seems at least as likely to me that markets may be unduly sensitive to some of the current uncertainties, and my best guess remains that the economy will continue to grow somewhat above potential. While this would reflect a step-down in real GDP growth from last year, it would still be enough for growth to further tighten labor markets. This expectation is quite consistent with the broad contours of the Tealbook forecast and most private-sector forecasts, such as the January Blue Chip forecast, which expects 2.2 percent growth this year.

In the absence of the financial market movements and other sources of risk we have experienced over most of the intermeeting period, I probably would have seen little reason to change course from my previous summary of economic projections (SEP) forecast. However, with heightened financial market volatility, potential weakness emanating from abroad and from self-inflicted wounds at home, and data reporting delayed, monetary policy flexibility and patience does seem warranted. However, if I am right that most of this is a financial market overreaction, I can easily imagine the need for further tightening later this year when at least some of the uncertainties are likely to be resolved. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Clarida.

MR. CLARIDA. Thank you, Mr. Chairman. The hard data that we do have at present indicate that the economy appears to have entered 2019 with good momentum. And in terms of the economic outlook, an expectation of solid growth, in line with the SEP numbers in December, should remain the baseline for 2019. I'll talk in a moment about risks to that baseline.

As exemplified by the very strong December 2018 employment report, the labor market remains healthy and ended the year on a very strong note, with the unemployment rate near the lowest level in 50 years and, importantly, average monthly job gains well outpacing the increase needed to provide employment to new entrants. The median estimate of u^* has been falling for several years. I won't predict that that will continue, but certainly the labor market is on our radar screens.

In a welcome development, nominal wage growth continues to pick up, with most measures now running around 3 percent—and those are obviously in line with gains in productivity and our inflation objective—and are consistent with a labor market that is operating in the vicinity of full employment. They are not, I believe, at present a source of upward cost-push pressure on price inflation.

We talk in these meetings about the labor supply. I think one of the pleasant surprises in the December employment report was the increase in labor force participation, up four-tenths for the year, and it reminded us that the unemployment rate can fall either in response to participation or on the employment side, and so that is also something to remember.

Price stability, of course, is the other leg of our dual mandate, and PCE inflation over the past 12 months has been running close to our 2 percent objective. The consensus forecast of core PCE in 2019 is running at around 2 percent, and obviously we saw a similar projection from the staff. That said, and not withstanding strong economic growth and low unemployment, as was pointed out, inflation has surprised on the downside in the last six months of 2018. Although this may be due in part to residual seasonality, it's not yet clear, to me, that PCE inflation has moved back to 2 percent on a sustainable basis. Perhaps more important, it's not clear, to me, that PCE inflation expectations are well anchored at 2 percent, although I do think they are well anchored. And because expectations of future inflation are an important determinant of actual inflation, central banks are as much in the business of anchoring inflation expectations as of managing actual inflation.

To pick up on something President Bullard said, long-run inflation expectations, based upon a straight reading of inflation indexed securities, have drifted down, although after term premium and liquidity adjustments they may be consistent with CPI inflation of around 2.1 percent, according to staff estimates. But again, as President Bullard reminded us, historically PCE inflation is lower than CPI inflation by three-tenths, and if this were to continue, it would suggest that financial markets are expecting PCE inflation of 1.8 percent over the next 5 years. Now, for what it's worth—I looked it up—the average rate of headline PCE inflation for the past 25 years is 1.8 percent. And 1.8 percent, as it turns out, is equal to the Board staff estimate of underlying inflation, which they define as the level consistent with zero slack and stable inflation expectations.

Michigan surveys have been drifting down recently and are bouncing around the lowest levels that we've seen historically. The one bright spot on this topic is that the Survey of Professional Forecasters very reliably every month says long-run PCE inflation is 2 percent. So that's helpful. So while the evidence is not clear cut, I believe that PCE inflation expectations likely are well anchored but appear to be well anchored somewhat below 2 percent. To me, this suggests yet another reason to be especially patient and data dependent this year, because, in addition to learning how the economy evolves relative to baseline, we need, I think, to pay attention to how inflation and inflation expectations are evolving relative to target.

We do have a dual mandate, of course, and for those who haven't yet done so, I highly recommend that they read the paper by President Williams and coauthor presented at the AEA meetings—a very nice illustration on some implications of inflation expectations in a world of a low r^*.

Finally, I'll conclude with some risks to the outlook. I would cite, as we did in our December statement, both financial developments and the global economy. On the latter, the news since our December meeting has been disappointing. Fed staff, the IMF, the World Bank, and the Bloomberg consensus, have all downgraded their outlook for global growth in 2019, and just last week the ECB shifted its view from balanced risk to downside risk in its official statement. Now, this global slowdown in tandem with the lagged effects of the appreciation of the dollar over the past couple of years indicates, to me, that a slowdown in export growth or perhaps even an outright contraction as we saw in 2015 and '16 is a risk to the outlook in 2019.

And, of course, this is before any additional risk associated with an escalation in the trade dispute with the United States and China.

In terms of financial developments, perhaps somewhat surprisingly, financial conditions today are slightly easier than they were right before our December meeting, although, of course, they are materially tighter than they were in September 2018. Importantly, I believe much of the recent improvement in financial conditions is due to our postmeeting communication about policy and the balance sheet via the minutes and public remarks, and the effect these communications have had on market expectations regarding our policy rate path. I'll have more to say about this in the go-round tomorrow. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Daly.

MS. DALY. Thank you, Mr. Chair. In December I noted that a cloud of gloom had come over many of my contacts—I would say most of my contacts—but since that time, and somewhat to my surprise, moods have brightened a bit. They are bolstered by more tranquil financial markets, ongoing strong economic growth, and job growth in December, and, as one contact put it, "a good start to January," where he was referencing foot traffic, sales, and orders at his businesses.

Notably few are still talking about an imminent recession, and they've almost stopped talking about—I think they must have read Diebold and Rudebusch—the end of recession simply because of old age. Instead they are planning for a slower but ongoing expansion. So they've really come to grips with the fact that we're slowing, but it's not going to end in a recession is their current view. So in practice this means that they're moving ahead with plans to hire and invest, but they're avoiding risky ventures, and they're not going after marginal projects.

I view this change as consistent with the hard data, which continue to come in strong. So while I read this as good news, I think it's also clear from them that the past couple of months have really chastened them, if you will, and they're on high alert and ready to pull back if there's any signs of danger. And here I think this context of uncertainty looms large. The long and growing list of worries, including financial market volatility that we just came through, trade tensions, Brexit, the yield curve, global growth—it's getting longer and longer—and, most recently, the disruptive standoffs in Washington, added to this general sense of unease.

Although financial market volatility has come down of late, policy uncertainty remains quite elevated. For instance, if you look at the policy uncertainty index developed by economists Baker, Bloom, and Davis, it shot up in December, and it reached one of its highest readings in over 15 years. Global uncertainty, as Steve mentioned, has also come up sharply. It was pushed higher by Brexit and trade tensions and worries about China slowing, et cetera.

So the question is, how does all of this uncertainty affect the economy? And I thought Steve's presentation gave us one look into that. We all know it's not good, but it's hard to quantify it or pin it down. And so ongoing research by staff at the San Francisco Fed tries to do this using both a theory—and by that, I mean a model—and also empirical analysis. In both of those, they find that higher uncertainty—that is, an uncertainty shock—acts on the economy like a negative aggregate demand shock. It lowers both output and inflation. In the model, this dual effect results from a negative feedback loop—businesses get pessimistic, they stop hiring, consumers react by spending less and saving more, and then that goes on and on around until it amplifies over time. So when you estimate this in the model using an empirical VAR, they find that the effects of this are notable. In fact, according to the model, after the Great Recession, policy uncertainty associated with events like the 2013 fiscal cliff pushed the unemployment rate up roughly 1 percentage point and held inflation down.

More recently, and I think more salient for this current year that we face, their analysis shows that uncertainty subtracted a few tenths from job growth—even though it was strong, it could have been stronger—and inflation for the past year. So a few tenths off both of those, at a time when uncertainty was lower than it is today. Looking ahead, I expect uncertainty to continue to act on the economy in the coming year.

If I balance out the information from the contacts, the fact that financial conditions are tighter now than they were in September, and the fact that this uncertainty looms large, I have marked down my estimate of growth and inflation somewhat relative to my December SEP projection. That said, in view of the momentum in the economy and the strength of the hard data—and job growth is the greatest example of that—I continue to expect the economy to expand at a solid pace this year, slightly above its long-run potential. Continued above-trend growth should further tighten labor markets and put slight upward pressure on both wages and prices. With recent inflation data coming in on the soft side, I view this additional upward pressure as welcome.

Now, in terms of inflation—and I'll finish with inflation—I'm increasingly worried about achieving our 2 percent objective on a sustained basis, and several factors inform my view. First, with greater-than-expected slowdown in foreign economies, I expect the dollar to strengthen, and that will put downward pressure on prices in the United States. This will add to a downward drag already coming from prices for health care and other goods and services that are less sensitive to cyclical pressures. Again, research at the San Francisco Fed, which we now update regularly on our website, in case you want to follow it, shows that inflation in these acyclical industries fell in October, and remained low in November, and contributed to the overall softening in inflation that we've been documenting. This work also shows that the cyclical component of inflation, which should respond to the ongoing tightening, has been treading water for the past year or so.

Now, of course, this is no surprise, given the well-documented flattening of the Phillips curve, and President Bullard mentioned this. But the question, I think, is, what should we expect from the Phillips curve in the future? We've had numerous empirical analyses, some of them done in San Francisco and other places, that said we don't expect a lot of nonlinearities, but it's also important to think about what's making the Phillips curve flat. And here new work by staff at the San Francisco Fed again provides some guidance. This is a theoretical exercise, but I felt it was informative. They innovate from the standard macro "workhorse" models that don't actually have direct labor and firm negotiations over wages, and they directly put such negotiations into a model and ask the question, how does this affect wages and prices in the evolution of inflation in those areas? They have simple search frictions—time to match is the friction—and then firms and workers are directly bargaining. In this more detailed framework, they find that as workers' bargaining power declines, they lose their ability to translate higher labor demand and higher productivity into higher wages, and so you just don't get this relationship between worker demand and higher wages. This flattens the Phillips curve, and this flattening persists as long as bargaining power is constrained. So it's a persistent effect.

Then if you look—do we think worker bargaining power is lower and will it persist? I go back to Alan Krueger's remarks at the Jackson Hole symposium last year, and he documented, I think, very carefully that worker bargaining power has been coming down for two decades and importantly, has continued to decline steadily throughout this expansion because of a variety of things that are secular and about market structure and less about any particular tightness of the labor market. So I think, then, that this flatter Phillips curve is likely to be persistent in our economy. If I put all of this together, I see more downside than upside risk on inflation, and this is something I'll be watching in the months ahead. Thank you, Mr. Chair. And with that, I say, "Go Rams!" [Laughter]

CHAIRMAN POWELL. Thanks. President Mester.

MS. MESTER. Thank you, Mr. Chair. The Fourth District economy continues to expand but at a somewhat slower pace than in the past year. Several contacts told us they expected activity to slow down because last year was such a good year for them. Still, business and labor contacts indicate there's a lot of angst about the outlook, including with regard to trade and tariff policies and global real growth. Most firms reported that the volatility in financial markets has not had any material effect on their firms' activities or on their outlook for the year.

Before the government shutdown ended, most contacts reported that, while it was lasting longer than expected, it had not yet affected their firms. A few contacts noted it had delayed some significant financial transactions that required government reviews and approvals, which could affect some planned activities in the near term.

The January reading of the Cleveland Fed staff's diffusion index, which is a measure of the difference between the percentage of contacts reporting better versus worse conditions, fell from 22 to 7, about the level seen in the second half of 2016. A majority of contacts continued to report stable activity levels for their firms, but there was a smaller proportion reporting an increase in activity.

Manufacturing activity in the District has softened. Some contacts attributed slower activity to typical seasonality. Others cited the effects of trade policy tariffs and weaker growth abroad. Indeed, some contacts noted the anticipation of higher tariffs and freight costs. Some customers pulled orders forward in the second half of last year and, as a result, we are seeing slower activity now. A contact from a large industrial packaging products company noted that the uncertainty surrounding trade policy had lowered demand for the firm's products and that demand from China and major economies in Europe had also fallen. A contact who is from a large multinational power management company also noted declines in orders from some foreign markets.

Now, despite softer activity, District labor market conditions remain strong. Based on the early benchmark data, payrolls grew a bit more than 1 percent last year. That's ¾ percentage point higher than the Cleveland Federal Reserve staff's estimate of the District's longer-run trend employment growth. The District's unemployment rate remained at 4½ percent, where it has been since July. This is about ½ percentage point below the Cleveland staff's estimate of its longer-run normal level. So that's a strong labor market for our District. Firms continue to report a lack of qualified workers. Some firms have shifted from looking for new hires to doing all they can to retain their current workers. Wage pressures in the District remain elevated, and many contacts expect those pressures to persist this year.

Price pressures in the District also remain elevated. Now, costs for some inputs such as steel have fallen in recent months, but many contacts continue to report increases in their non-labor input costs overall and their own product prices. A number of these contacts again cited tariffs and generally stronger demand as contributing to cost increases.

Turning to the national economy, I am very happy the federal government shutdown is over. It imposed hardships for workers not getting paid, and for businesses that rely on the parts of the government that weren't operating. As a result, we will see somewhat slower growth in the first quarter than otherwise, but I expect that to be made up in the second quarter provided there is not another shutdown.

Financial markets have stabilized somewhat since our previous meeting, with stock prices retracing some of their declines since October. The U.S. economy remains largely in a healthy position. I have made little change in my outlook for the economy since our previous meeting, but the elevated risks I noted last time are still in place, including questions about the strength of the global outlook and uncertainties regarding tariff and trade policy. I expect growth to slow from last year's unsustainable 3 percent pace toward trend as the effects of fiscal stimulus and monetary stimulus wane. But note that the path toward sustainability is rarely smooth. The question is whether we are going to see a much sharper slowdown than that.

Now, I can spin scenarios in which that happens, including a sharper slowdown in China or continuing volatility in financial markets and uncertainty regarding trade, leading to the significant declines in business and consumer sentiment and a pullback in spending. But my modal outlook remains that we will see growth at, or somewhat above, my trend growth rate of 2 percent. Labor markets will continue to be strong, and inflation will remain near 2 percent, apart from the transitory effects of changing oil prices.

The strength in the labor market will continue to buoy income growth and consumer spending. For the fourth year in a row, payrolls grew more than 2½ million jobs last year. This is an average of about 220,000 jobs per month, and the pace was even stronger in the last three months of the year where monthly gains rose to over 250,000. This pace is well above estimates of trend employment growth.

The unemployment rate, at 3.9 percent, is near its 50-year low. Despite a downward trend driven by demographics, the participation rate has continued to fluctuate within a fairly tight range over the past three years. Now, it is possible that the participation rate could surprise us and move higher, but it's worth considering that, based on many estimates of trend including several made by economists at the various Reserve Banks and the Board, and the Congressional Budget Office (CBO), the current participation rate exceeds trend almost as much as it ever has. That maximum was reached before the 2001 recession when labor markets were extremely tight. Sustaining the expansion means that the pace of job growth will need to slow to a more sustainable level over the next couple of years.

The ongoing strength of the labor market has produced a steady pickup in labor compensation, which is welcome. Because this pickup has been in line with productivity growth and inflation, it has not added to inflation rate pressures. I'm not concerned with the inflation picture either to the upside or the downside at this point. The decline in oil prices in the fourth quarter of last year will temporarily lower total PCE inflation early in the year, but the recent partial reversal and stabilization of prices means that PCE inflation is likely to rise gradually back to 2 percent over the year. Core inflation has remained near 2 percent. The survey measures of longer-run inflation expectations and the Cleveland Fed's model-based measure have remained stable at levels consistent with our 2 percent inflation goal.

Now, measures of inflation compensation based on asset prices suggest some decline, but I put less stock in these measures during periods of heightened volatility, which can affect term premiums and the risk premiums, making it hard to draw conclusions about inflation expectations for market prices. So looking through the near-term decline in headline inflation, I expect underlying inflation to remain near 2 percent.

If my modal forecast comes to pass, we could chalk up 2019 as another very good year for the economy. But there are risks to the forecast, as many of you mentioned, including slower-than-anticipated growth in Europe and China; the possibility of a hard Brexit or other geopolitical risk, including unrest in Venezuela, an important oil-exporting country; continued uncertainty about tariffs and other government policies; or continued declines in consumer and business confidence, which could lead to pullbacks in spending, losses on leveraged loans to weaker borrowers, and further tightening in financial conditions and a pullback in risk-taking. So though my modal forecast anticipates that, in order to promote the achievement of our dual-mandate goals, the federal funds rate will likely need to rise a bit further this year, the risk to the outlook means there is considerable uncertainty associated with this policy rate path—in terms of both the pace of increases and the stopping point for this tightening cycle.

I see no reason to act preemptively because, with respect to our monetary policy goals, the economy is in a good spot. Growth appears to be slowing from an unsustainable above-trend pace. Labor markets are strong. And although the unemployment rate is lower than its longer-run sustainable level, inflation is near 2 percent and does not show signs of appreciably rising. So, in my view, monetary policy doesn't appear either to be far behind or far "ahead of the curve." The federal funds rate is now at the bottom of the range of estimates of its longer-run neutral rate. Recent policy increases are still working themselves through the economy, and our balance sheet continues to shrink, putting some upward pressure on longer-term interest rates.

In this environment, I believe we can take the time to assess incoming economic and financial information and what it means for the medium-run outlook and the risks to the outlook. If real GDP growth slows more than expected or underlying inflation moves down, it could curtail further rate increases. But it is also important to remember that we want to see growth in employment slow from the unsustainable pace we have seen over the past year. We should not get overly pessimistic about the outlook if we see some softening in the data. If the economy performs as expected and the downside risks don't materialize, we likely will need to move the funds rate up later in the year to sustain the expansion and promote our goals. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. I'm going to suggest that we take a short-ish break until a quarter of 4—15 minutes—and resume, if that's suitable. Thanks.

[Coffee break]

CHAIRMAN POWELL. We'll resume with President Harker. Thank you very much.

MR. HARKER. Thank you, Mr. Chair. Regarding the forecast, I am in general agreement with the staff's near-term forecast of economic activity, although I anticipate that the first quarter may be a bit weaker than the staff projects. We have a number of contacts who have indicated that this quarter will be weaker than 2018:Q1.

The Third District continues to grow at a modest pace, and the regional labor market remains robust, with solid job growth that is broad based geographically and across sectors. The unemployment rate in the region has remained at 4.1 percent since August, which is below its pre-recession rate.

Although the labor market remains tight, however, we have received reports of some softening of wage pressures. Our January manufacturing survey rebounded to levels that once again exceed their nonrecessionary average, but there has been a noticeable weakening in this sector that began in the second half of last year.

We also observed significant weakening in the current employment index and reductions in price pressures. Manufacturers remain optimistic, although somewhat less so than at this time last year. Hiring plans and planned capital expenditures appear healthy, and the government shutdown has yet to have affected firms in the region. But some contacts have indicated that they would start laying off workers if the situation were to change and the continued shutdown began affecting sales. Thank goodness that's over for now.

The continued optimism of the respondents is further reflected in the answers to some special survey questions. In comparing the first quarter's activity and the last quarter's activity, 65.4 percent of firms indicated they expected activity to increase, with the largest fraction reporting expected increases of 2 to 4 percent. As well, 46.3 percent of firms reported increased demand over the past several months, as opposed to 27.8 percent of firms reporting decreasing demand. Of those expecting production increases, about one-third indicated they anticipated hiring additional workers, while roughly one-third indicated they'll work their existing labor force additional hours. About 25 percent anticipate that additional output will come from increased productivity.

Now, the relatively healthy manufacturing picture is decidedly not what we're seeing in the service sector. Our January nonmanufacturing survey went into negative territory for the first time in seven years. The region's consumers seemed to be more cautious, and expectations of future activity declined dramatically. The future-activity index is approaching record low territory.

Regarding the government shutdown, our region has very little direct exposure to government economic activity. We are not seeing any noticeable change in unemployment insurance claims. Now, the only direct evidence we have seen is from two coffee shops near the national park sites around the bank and near the federal courthouse. They have reduced the number of large coffee urns they brewed in the morning from five to two. My assumption is, this will quickly reverse and that Philadelphians will again be very well caffeinated and vigorously demonstrating the brotherly love we are very well known for. Please—go Rams! [Laughter]

To summarize, the regional economic activity continues to grow modestly, but there are some signs that the risks may be weighted toward the downside. Additionally, contacts are expressing little indication of mounting price pressures, which could indicate that inflation will remain somewhat below target for some time to come. As for the implications of all of this on policy, more on that tomorrow. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Barkin.

MR. BARKIN. Thank you, Mr. Chair. Last time I said, "The data were good, but the mood was bad," and that is even more true today across our District, with the notable exception of Clemson, South Carolina [laughter], where the mood is euphoric and the orange sweatshirts are moving off the shelves.

The poster child for good data is, of course, the jobs report. In addition, the staff's 7 percent estimate for fourth-quarter business investment growth was encouraging. Industrial production and the CPI report also indicates an economy that is on track.

My contacts agree. They see a good start to the new year. They report strong consumer spending for the fourth quarter and that capital expenditure plans for 2019 largely remain unchanged. This is particularly welcome as I continue to watch for any indication that businesses are reacting to the downbeat mood by cutting investment or discretionary spending. Some contacts indicate that input price increases are now slowing in the case of steel, pulp, freight, and oil. And this is largely consistent with the PPI report.

Even though markets have recovered to a significant degree from the late December decline, sentiment indexes are falling, including Richmond's manufacturing and service surveys. The ISM in particular looked weak across the board. Today's consumer confidence report was weak as well; that fall is understandable: The government was shut down, the U.S., Mexico, Canada Agreement (USMCA) isn't yet approved, trade negotiations with China and Europe continue, the Brexit deadline approaches, and growth in China and Europe appears to be weakening. Having said all of this, most of these survey indexes remain at fairly high levels, even after the recent declines. So maybe the mood has worsened, but it's not at its worst yet.

How do we interpret the tension between the data and the sentiment? I do believe sentiment can spill over into data. For example, several sentiment indicators spiked after the 2016 presidential election. Then I'm told 2017 growth surprised us on the upside. Something similar could easily happen to the downside in 2019, and perhaps the staff's downgrade of 2019 business investment reflects that risk.

In our District, the shutdown has dominated the conversation, given the large presence of the federal government. Notably, losing 800,000 paychecks nationwide is like a simultaneous strike at UPS, GE, and AT&T. A lot of lives were disrupted. Even though the direct effects on GDP were limited, given the commitment to give back pay, there were multiple knock-on effects for retailers who serve government workers, states not collecting taxes, schools not receiving grants, et cetera. A Baltimore-based food wholesaler that sells to hundreds of small restaurants in D.C. office buildings reported sales and collections that declined dramatically. Federal contractors were affected, particularly employees of smaller ones. Most importantly, the shutdown reduces business confidence in the ability of the federal government to function nondisruptively, to attract and retain the best talent, to deliver upsides like an infrastructure program, and to avoid downsides like the upcoming debt ceiling negotiations or a return to sequestration of the budget. All of this has to have an effect on investment.

While I can still imagine an upside—if the government stays back at work, the trade issues are settled, and a second fiscal stimulus like the infrastructure deal gets done—the likelihood of those seem to be fading. The magnitude is fading, too. I fear businesses may have lost faith that the climate for business investment will recover and, while not yet scaling back, are also reluctant to scale up. And the potential downsides driving the weak sentiment seem to be coming into ever-sharper focus. While my base case scenario is still a transition to more modest above-trend growth, I will say my conviction is weakening, and I'd like some time for the fog to lift.

CHAIRMAN POWELL. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I'd like to congratulate President Daly on wishing the Rams good wishes in the Super Bowl. But I do miss then-President Williams when he would always look at his favorite professional sports team and forecast doom for anybody who beat them. With the U.S. economy and with the Patriots and the long data series that they have there, I would have thought that would be easy for Vice Chairman Williams to make the keys dance on that one. So maybe you can report on that. [Laughter]

The reports from my directors and other contacts generally indicated that domestic demand continued to be solid, although there were a few more notes of caution than last round. I heard mixed accounts about changes in costs and pricing, but, on balance, my sense is that overall inflationary pressures have ticked down a bit.

Most of my manufacturing contacts were still positive about current activity. Notably, none of the reports was consistent with the sharp drop we saw in the December national producer manufacturing index (PMI). One of my directors who runs a major manufacturing conglomerate indicated that their orders had increased in December and for the fourth quarter as a whole. Similarly, two major producers of heavy equipment said that U.S. demand continued to hold up, and one of them noted a healthy order book through the first half of the year. That said, all three noted a heightened degree of caution. For example, my director said that many of his customers were hesitant to commit to new capital expenditures. The most downbeat assessment I heard this round came from a major steel maker. Prices for hot rolled steel have fallen by about $200, to $690 a ton, and his first-quarter order book is weak. He’s still hopeful that demand will hold up in 2019, but he’ll be watching first-quarter orders closely.

Beyond the United States, a number of contacts noted softer growth abroad, particularly in Europe and Asia-Pacific. Changes appear in line with most forecasts we’ve seen to date.

The news from labor markets was about the same as last month. We continued to hear many reports of shortages of workers as well as firms increasing wages, benefits, and training.

Elsewhere on the cross currents, transportation bottlenecks and higher shipping costs remain common concerns, as do tariffs. One director in the apparel industry said that her firm had mostly absorbed the 10 percent tariffs on Chinese imports, but would be forced to raise prices if tariffs went to 25 percent. That said, as I just noted, some steel prices have come down, and my manufacturing director indicated that, broadly speaking, his businesses have seen a significant easing in material cost increases. Furthermore, he and a number of other contacts noted a limited ability to pass through higher costs to customers leading to some compression in profit margins.

When I put all of these observations together, my reading is that inflationary pressures are down a bit from December. Certainly, there’s no evidence that a dramatic breakout in inflation is imminent.

Meanwhile, financial market conditions have improved. Last round I reported how a major automaker had decided to hold off on issuing debt in the hope that markets would be more receptive in January. This round, they indicated that conditions had indeed improved, and that they had successfully gone to market with a number of debt offerings.

Regarding the national outlook, like the Tealbook, we've assumed that the recent net changes in financial conditions largely reflect markets recognizing the return to potential growth that's been in our economic projections for some time. Under this relatively benign view, the market's more realistic assessment leads to a tightening in financial conditions and dictates some markdown in our forecast. But the standard interest rate and wealth effects captured by our econometric models imply only modest adjustments. In the end, our forecast revisions are pretty much like those in the Tealbook. So, with resource pressures continuing to build in these projections, some further policy rate increases would eventually be needed to bring the economy back to potential.

Now, that is the benign perspective on recent events, but there is another less benign but realistic scenario that is on our minds: namely, worries over slowing foreign growth, unproductive trade negotiations, a disruptive Brexit, and increased political tensions—both domestic and international—could have a notably greater effect on household and business spending. Another add-on could be that financial markets have not yet fully adjusted to the idea that a deceleration in economic activity to trend means that we're talking about growth rates below 2 percent. If so, we could be in store for further reductions in the prices of risky assets.

Under this interpretation, short-run real r^* could drop, and today's funds rate setting, which we currently assess as a bit accommodative, could quickly shift to be restrictive. In this scenario, simply keeping policy rates on hold would be expected to close resource gaps and perhaps do even more. My staff explored this scenario using our Chicago Fed dynamic stochastic general equilibrium (DSGE) model. In its current baseline forecast, short-run nominal *r** is close to 2.5 percent in 2019, and real GDP is projected to grow above its trend rate of increase. By this accounting, policy is currently close to neutral and is consistent with continued solid economic performance.

As the counterfactual scenario, we considered a situation in which first-quarter real GDP growth is reduced to 1.4 percent because of sluggishness in both nondurables and services consumption and private fixed investment. Our model sees this as a particularly adverse configuration, because it interprets the joint weakness of consumption and investment as reflecting a combination of a large negative shock to productivity and another adverse shock that increases the demand for safe assets. As a result, the model's short-term nominal equilibrium interest rate falls to about 1½ percent. So, in this alternative, our 2¼ to 2½ percent funds rate target would look pretty restrictive. This scenario is not the most likely path, according to our model, but the exercise highlights how, depending on the configuration of shocks, even modestly lower first-quarter real GDP growth could change our assessment of the current funds rate range from slightly accommodative to somewhat restrictive. As I'll discuss tomorrow, a wait-and-see policy appears to be the appropriate risk-management response to such plausible alternatives to the baseline outlook, and exercises such as the one I just described may help us think about a suitable monetary policy reaction function for this difficult decisionmaking period. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. I think my comments will echo, to some degree, the comments of President Evans. Economic activity in the 11th District remains solid, but our Dallas Fed surveys and discussions with contacts suggest a broad-based deceleration in activity across manufacturing, services, retail, housing, and energy sectors. While labor constraints remain a challenge, contacts are increasingly citing—to us, at least—demand-side factors, as well as overall increased business uncertainty attributed heavily to tariffs and a weaker global economy.

We asked several special questions in our Dallas Fed December surveys, because we at the Dallas Fed have a particular concern that a slowing economy will squeeze margins, and that corporate earnings may have further downward revisions to come. In that survey, more businesses noted decreases, rather than increases, in pricing power over the past six months. One-quarter of businesses we surveyed said they are unable to pass on higher costs to customers in the way of price increases, and another one-half of respondents said they're only able to pass along some of their higher costs. Only 26 percent of those surveyed said they could pass on either some or all of their higher costs.

Pricing power, not surprisingly, seems to have eroded most in the retail sector, while almost 60 percent of our respondents now report more difficulty passing on cost increases, versus six months ago. And we continue to see weakness in our local housing markets.

I'll just comment on energy. We do expect global oil consumption growth to soften in 2019. We also expect global production growth to slow somewhat, particularly because of declining OPEC production as well as weakening U.S. output. Regarding U.S. output, it's worth noting that, in the fourth quarter, growth and activity in oil and gas stalled. This took a break from a 10-quarter-long trend of rising activity, according to our energy surveys.

Our base case is that crude oil output will grow by approximately 1 million barrels a day, but it's primarily because of the large number of drilled but uncompleted wells. We expect cap-ex to go down substantially—it just may not affect 2019 output that substantially. It will affect 2020 output. By the way, this million barrels a day figure compares to approximately 1.7 million barrels a day in production growth in 2018.

It's the view of our energy group at the Dallas Fed that price risk for 2019 remains to the downside, particularly if there is greater weakening in global economic growth. And it's worth noting that this slowing will particularly affect the energy service sector, which is highly leveraged, and also has a meaningful portion of the high-yield index. So if this scenario is what unfolds, we would expect this will probably result in an overall increase in high-yield spreads and may have some negative effect on financial conditions more broadly.

Regarding the U.S. economy, we've revised down our Dallas Fed real GDP growth estimate for 2019 to approximately 2 percent. And I must say, we see a high level of uncertainty associated with this forecast. And I'll rattle off the litany that everyone has said: global growth is decelerating; financial conditions, although they've improved in the past few weeks, are tighter than six months ago; for us, issues relating to tariffs; fiscal stimulus fading; Brexit; and other issues in Europe, all create uncertainty. And I'd get back to the basics: Aging demographics, slowing workforce growth, the effect of technology and technology-enabled disruption on pricing power, and margins and rising input costs are all factors that are creating elevated levels of uncertainty. Our concern is that all of this will translate into slower growth but, more significantly, more downward revisions in corporate earnings, which in turn will lead to less investment and certainly may have an effect on financial markets. And if S&P earnings get revised downward substantially more, the U.S. stock market, at least in my judgment, doesn't yet fully reflect that. Later in the year, this may ultimately affect the consumer. But in this scenario, it will work its way through corporates first, through less investment and lower stock prices, and through weaker hiring with a lag later in the year, and ultimately affect the spending ability of the consumer. That's the downside case we're monitoring.

Regarding inflation, I continue to believe the technology and technology-enabled disruption and globalization are having a muting effect on the pricing power of businesses. This is the Phillips curve discussion that President Daly and President Bullard and others were having. We do find it notable that, in this tight of a labor market, with GDP growth as strong as it's been, the U.S. economy is unable to generate a sustained rise in inflation above 2 percent—which makes me wonder what inflation will do in a slowing economy and certainly in a downturn. And I wonder if, a year from now, we aren't going to be worried more about deflation versus inflation. I believe a number of these concerns regarding the outlook for growth as well as inflation are already being reflected in the level and shape of the U.S. Treasury yield curve as well as the federal funds futures markets. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. The outlook for the 10th District economy remains generally positive, with our business contacts expecting a slower pace of growth this year than what they saw as an unusually robust 2018.

Our most recent manufacturing and services survey showed somewhat slower growth than in previous months, although expectations of future activity remain positive. And contacts outside the energy sector expect to maintain or increase capital spending. Our contacts also expressed concern about political uncertainty, and some reported negative effects of the partial government shutdown on their business activity, especially those in the hospitality and tourism industry.

District energy activity fell in the fourth quarter of 2018, the first quarterly decline we have seen in nearly three years. Following the drop in oil prices, over half of our survey respondents reported a markdown in expected 2019 capital expenditures. Even so, most District energy firms remain in relatively good financial health despite somewhat higher levels of debt coming into the recent oil price drop than was the case with the 2014 downturn.

Finally, conditions in the District's agricultural sector remain downbeat because of large inventories and trade uncertainties. We recently hosted a food and agriculture roundtable and heard the heightened concern about farmland values, which, for the past several years, have remained relatively stable in the face of low farm income. Participants expected land values to be under pressure as more acreage comes to market, primarily from absentee owners looking for higher returns.

Regarding the national economy, although my outlook has not fundamentally changed since our December meeting, the intermeeting period did serve up a menu of cautions related to financial market volatility, the partial government shutdown, and a more downbeat assessment of the global economy. How those and other factors play out could influence my outlook in the coming months, but for now, I continue to expect above-trend growth this year with subdued inflation. I will be carefully considering the balance of risk as well, as I view any upside risk related to the strong labor market and healthy consumer spending as having taken a backseat to a number of downside risks.

Consumer spending appears poised to support the ongoing expansion, as rising employment and compensation boost personal income. Notwithstanding average monthly employment gains of 220,000 during 2018, job openings continued to rise, up more than 15 percent on a year-over-year basis in November. Likewise, the National Federal of

Independent Businesses (NFIB) survey in December showed the share of small businesses planning to increase employment remained near its historical high in December. Compensation growth, as measured by average hourly earnings and by the wage and salaries component of ECI, accelerated to near 3 percent in 2018. With strong labor market conditions, wage growth is likely to remain solid. However, at this stage of the expansion, in an economy near full employment, real wage growth, not just nominal, is especially important to the assessment of consumer spending over the medium term.

Will further tightening in the labor market contribute to higher real wage growth, or are the key determinants of strong real wages other than the business cycle? Of course, real wage growth has been weak during much of the current expansion—just under 1 percent over the past year. Recent research by my staff examined the historical relationships between real wage growth, productivity, and the unemployment rate and concluded that the key to real wage growth at this point in the business cycle is improvement in productivity growth. The analysis found a strong positive relationship between productivity growth and real wage growth—of course, something that has been pointed out in other studies. The analysis also found that the state of the labor market, as measured by the unemployment rate, did not have a direct relationship with real wage growth but, instead, served to damp the contribution of productivity growth to wage growth when labor markets are weak.

Based on these historical relationships, the improvement in labor market conditions since 2010 is estimated to have contributed approximately ½ percentage point to real wage growth, but future modest reductions in the unemployment rate would not be expected to contribute much further. Instead, improvement in productivity growth will be key to generating higher real wage growth in coming years. For example, if productivity growth were to return to levels seen between 1997 and 2002, this analysis would suggest that real wage growth would increase 1 full percentage point.

Although the labor market and the broader U.S. economy retain positive momentum, risks emanating from the global economy are noteworthy. Economic data from China in particular have softened, and my staff's assessment, along with our business contacts with operations in China, are less sanguine than the Tealbook. Rising household debt and slower growth in disposable income have begun to restrain household spending in China. Growth of real per capita disposable income for urban households in China has declined nearly 1 percentage point since the third quarter of 2017, a more rapid deceleration than real GDP growth. The household-debt-to-GDP ratio has reached 50 percent, double the level in 2010.

In addition, the sharp decline in Chinese equity prices last year appears to have affected consumer confidence, restraining household spending through a negative wealth effect. On the business side, despite strong government support to state-owned enterprises, the private sector is under significant pressure from weakened demand and tightened financial condition. This pressure weighs on wage growth and may have started to affect employment growth beyond that expected from an aging population and lower birth rates. These developments make the Chinese economy more vulnerable to adverse shocks.

The uncertainty about the global economic outlook and financial market volatility could affect confidence and thereby spending in the United States. Measures of consumer confidence and business confidence remain historically high but have softened a bit in recent months. Consumer confidence turned down as consumers lowered their expectations of future economic conditions. Assessments of current conditions remain within the range they have fluctuated throughout 2018.

Indexes of business optimism have pulled back in recent months from their record highs earlier last year. According to the NFIB survey, fewer firms expect the economy to improve, and fewer plan to make capital outlays. Analysis by my staff indicates that shocks to the stock market affect consumer and business confidence, as households and businesses may interpret these shocks as signaling slower growth ahead.

I also see downside risk posed by fiscal policy uncertainty. Although the partial government shutdown has a temporary resolution, the specter of additional standoffs in coming months tied to budget and federal debt limit decisions point to heightened uncertainty.

Finally, recent readings on inflation remain benign, and I see little evidence that inflationary pressures will emerge over the forecast horizon. As last year's dollar appreciation and oil price drop are passed through to core inflation this year, price pressures are likely to remain subdued.

A development I am watching is the recent decline in long-term inflation compensation, which has fallen about 30 basis points since the end of September. I thought the Tealbook offered solid support for a view that this decline is related to changes in risk premiums rather than inflation expectations. However, I would not rule out the possibility that this decline in inflation compensation could be sending a signal about the global economy.

Along these lines, I found a 2016 analysis by the Board staff helpful in understanding movements in inflation compensation. They show that a deteriorating global outlook—which manifested itself through lower demand for oil, increased investor risk aversion, and an appreciation of the dollar—helps explain the decline in inflation compensation that occurred between 2014 and 2016. With the recent declines in global PMIs and weaker-than-expected data releases in the euro area and China, expectations among market participants may be affected. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Bostic.

MR. BOSTIC. Thank you, Mr. Chair. Sentiment from Sixth District contacts and directors have not changed materially from what I reported last meeting, and it mirrors what has been reported by many around this table this afternoon. There is still an air of apprehension over myriad uncertainties and downside risks to growth in 2019, and this represents a notable deterioration from the sentiment during 2018. However, these concerns have yet to cause my contacts to mark down their expectations for growth in 2019, but importantly, these expectations remain positive.

"Risk off" is still a buzz phrase we hear often from southeastern decisionmakers, and we still hear some reports of uncertainty causing delays in hiring and capital investment projects. But the most notable change over the intermeeting period was that a handful of contacts, while still hewing to their previous growth strategies, have begun to engage in contingency planning should economic conditions falter. These plans include sizable cuts to staffing; cuts to travel and general expenses; and, more frequently, reviewing current projects. I would not say that reports along these lines were pervasive enough to constitute a trend, and no one reported that they had pulled the trigger on these plans. But I think it is notable that we were not hearing these sorts of anecdotes at all at this time last year.

I, like everyone here, I imagine, am grateful that the partial government shutdown ended before we had to face Transportation Security Agency (TSA) and other essential workers on the job after missing two paychecks and having no prospect for when the impasse would break. The sense I got from many of my contacts was that we were fast collectively approaching a bright-line moment when key functions would stop working seamlessly. As one example, more than a few firms reported they were having inventory issues due to imports being stuck in Customs during the shutdown. In fact, a large flower distributor in the region, which had product sitting in Customs at the moment, was quite worried that its business would be significantly affected if the shutdown had persisted through Valentine's Day. Thankfully, such concerns were not realized, and I will remain hopeful that the three-week extension will provide enough time for a lasting compromise to be crafted.

As with real activity, we are not detecting much of a change relative to the end of last year on the price and inflation front. For businesses, pass-through of enacted or prospective tariffs continues to be a mixed bag, still seemingly concentrated in the business to business (B2B) space, with limited effects on most retail prices. We are not detecting any significant move in inflation expectations from either anecdotal reports or formal survey efforts.

We did hear some anxiety about March, when the delay in the imposition of the additional tariffs on Chinese imports is scheduled to expire. As I have noted before, many expect prices for consumer-facing products to be affected if those tariffs are enacted. But, for now, most are taking a wait-see-and-hope approach regarding this issue.

In current labor markets, here, too, there has been no discernible shift in sentiment or firm behavior since the December meeting, with one important exception. We do have new and compelling visual evidence out of New Orleans of the growing skills gap. With 1 minute and 49 seconds left in the NFC championship, in a tie game, the side judge somehow missed an obvious and egregious pass interference that, if called, would likely have resulted in a Saints victory. In the aftermath, a staffing agency in the New Orleans area sent around a flyer with an image capture of the side judge clearly watching and failing to call the penalty, asking the question, "Is your current job not a good fit?" See me after the meeting if you want to see the visual.

[Laughter]

In sum, I, like my contacts, have yet to materially alter my forecast for growth, which is slightly above long-run potential, or inflation, which we still have near the FOMC's 2 percent objective in 2019. And we continue to see room to be patient on policy moves. More on this tomorrow. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chairman. Most hard economic data still suggest a strong economy, as we have all heard, discounting the possibility of any nasty surprises in the releases that have been delayed by the government shutdown. That continued strength is most apparent in the labor market from the perspective of the outlook. The December labor market report was consistent with the assumption that I've had that we have reason to believe that labor force participation can continue to grow. Particularly encouraging was the increase in prime-age participation, which suggests that the gain did not just result from older workers delaying their retirement, perhaps, to rebuild their 401(k)'s.

In addition, the employment-to-population ratio ended the year at a 10-year high. New claims fell to a 50-year low. Job openings were more abundant than at any time since the data have been collected. I think we can use the word "abundant" in that sentence, and, overall, we're benefiting from one of the strongest job markets in decades. The strength of the labor market, in turn, provides an important and relatively resilient support for the rest of the economy. The tight labor market has begun to show through to higher wages as we expected it would, which, with inflation close to target, has boosted real incomes and buoyed consumption.

The recent decline in oil prices should also support spending. We shouldn't forget that the United States has more drivers than equity holders, and that the recent fall in gas prices is probably a more economically meaningful development for many Americans compared with the recent volatility in stock prices.

Another interesting aspect of the jobs data has been the near-record level of quits. As we all know, they typically climb in strong markets as workers are more confident of finding alternative employment, but a side effect of a higher quits rate could also be better job matching, and increased productivity as workers take the risk of shifting from jobs that they may not be best suited for—perhaps on the sidelines—for those that better match their skills.

A pickup in productivity growth is an important factor in my own outlook, as it allows relatively strong demand growth to not result in excessive price pressure, and I think that the recent—although now somewhat dated—indicators related to productivity are supportive. In particular, I'll be looking at the data on investment in the fourth quarter closely to see if a third-quarter slowdown in capital spending was, in fact, just a temporary pothole as I think many of us assumed that it would be.

In regard to inflation, the fall in oil prices will likely translate into weak readings on headline inflation in the coming months, although core inflation appears likely to remain in the vicinity of the 2 percent target. I appreciated the Tealbook box on the recent decline in market-based measures of inflation compensation. As pointed out in the box, that decline has been correlated with the fall in oil prices, which has often been the case in the past. It's not perfectly clear why that should be. I would say, I'm more reassured than President Bullard that the survey-based measures are little changed, and, overall, I think the conclusion we should reach is that inflation expectations are well anchored. I was very interested in Governor

Clarida's analysis that they seem to be anchored at 1.8 rather than 2 percent, but I have to say that that doesn't overly trouble me, particularly as evidence seems to accumulate that it might take quite muscular measures to move those expectations—so muscular that they could end up simply de-anchoring them, rather than gently nudging them north. One additional observation on inflation has been the lack of any noticeable imprint of the recent increase in import tariffs, which suggests that firms haven't been passing the tariffs on to consumers but rather absorbing them in their margins, pushing down profits, and supporting reports of intense competition and decreased pricing power.

I also appreciated the Tealbook boxes on recession probabilities—the balance of financial and nonfinancial factors on the outlook. I agree with almost everyone here that it has been a somewhat disorienting time for the economic outlook, with financial market developments sending starkly different signals than the real-side indicators. This is primarily a reflection of the market's increased focus on a number of prominent downside risks. Everyone around the table has discussed them. Most of them appear to be global in origin.

But while I believe risk management should be an important consideration in the decision of policy—a very, very important consideration—we also have to be careful not to reinforce any deterioration of risk sentiment in our own actions and communications. And in that connection of avoiding negative signals, I want to echo the sentiment of a very clear, nearly universal majority of our colleagues on the Committee, Mr. Chairman, by saying, "Go, Rams." [Laughter]

CHAIRMAN POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Mr. Chairman. Current national data indicate that, overall, the economy continues to perform well. Available data indicate strength in nearly every measured category, with most underlying fundamentals appearing to be little changed.

But despite the strong data, there are a number of factors that provide a conflicting outlook on the domestic and global economy looking forward into the coming year—in particular, the market volatility that we have seen since last September, the government shutdown, and the continued uncertainty in global conditions and trade.

Trade and global financial conditions continue to be an area for close monitoring, particularly the effects of a slowdown in growth in China, the unresolved trade negotiations, and the continued effects of tariffs on particular industries, including agriculture, which I'll discuss in more detail shortly. The uncertainty about Brexit, challenges within the euro zone, and other international pressures all weigh on the positive domestic indicators.

Here at home, the labor market continues to show strengthening. Labor force participation rose in December, resulting in an increase of the unemployment rate for the month, but, overall, the rate continues to be well below what the staff notes as the natural rate of unemployment. With more than 312,000 jobs created in December, making an average monthly job creation increase of 220,000 per month for the year, those are very strong numbers.

I also continue to watch the labor force participation rate with interest and a keen eye toward where the new participants are coming from, whether they're retirees joining the workforce, those that had dropped out of the labor force and are returning to work, or current workers staying longer. We saw another increase in wage growth for the year ending at near 3 percent, and perhaps that's part of what's drawing people back into or keeping them in the workforce.

The most recent consumer spending data remain strong but have slowed slightly. These data would appear to demonstrate a continued positive outlook and confidence in the economic conditions and strong underlying fundamentals.

We've been below our stated inflation goal for some time, and it's hard to know if the latest dip that took place last fall was a short-term issue or one of longer-term concern. I think this is going to be an important thing to watch, and it's hoped that the rate will even out a bit, but I think it's something to watch as a potential indicator.

Two areas of particular interest to me are the housing market and agriculture conditions, as I noted earlier. The residential housing market has continued to decline over the past year, with potential borrowers expressing affordability concerns. And although mortgage rates stayed flat or even lowered a bit following the December meeting's rate increase, a downward trend continues in both new and existing home sales. So I'll be watching this to see if this is a signal about the broader strength of consumer demand or if it reflects more narrow factors, like preferences for renting versus buying.

Finally, on the agriculture sector, there's a small bright spot. Relative to other financial markets, agriculture commodity price markets have not experienced the same volatility seen in those other markets. They're not good, but they're not volatile. However, there are indications that, more generally, conditions are not improving but are continuing to moderately decline, as noted by President George. Nationally, banks are continuing to report agricultural loan delinquencies, which have slightly increased in recent months, indicating potential repayment risk. But, overall, there's a sense in the ag lending space with community banks, with credit unions, and within the farm credit system, that conditions in 2019 will be worse than in 2018, and that profits will continue to decline throughout the year. Many financial institutions are experiencing an erosion in institutional knowledge, finding that the turnover, due to retirements and the aging of their loan staff, are leaving them without the historical knowledge of the farm crisis of the 1980s. So their lenders are relatively unfamiliar with hard times like those experienced during that crisis.

There are also reports in the industry of psychological stress, both with lenders and with borrowers, due to the less experienced farmers and the newer ag lenders and their relative inexperience with these types of conditions. And, as President George noted, although ag land values for high-quality ground have generally maintained their strength, when more land is available to purchase, the price will inevitably decline, making that well-collateralized loan potentially vulnerable to risk and liquidation.

On the whole, agricultural producers weathered the conditions in 2018, but those who lost, lost big, and some producers have had to sell smaller parcels of between 40 and 80 acres at a time to improve cash flow for the next year. Modest gradual ongoing pressure continues.

One particular area of note—while the vast majority of agricultural producers use commercial bank financing, 31 states have seen increasing lending activity, particularly for major row crop inputs, coming from outside the traditional banking sector. Less qualified farmers who may not be able to receive production line credit from traditional banks are working with nonbank, potentially unregulated, lenders to finance crop inputs at higher rates than other traditional lenders. These lenders are not taking traditional collateral, but they're relying on production rates, crop production sales, to repay the loans. The uncertainty in production volumes and historically low commodity prices, compounded by the global commodity inventory oversupply and decreased export opportunities, may give some cause for concern for the borrowers in this area who are already squeezed with lower profit margins. Time will tell, but this is something I haven't heard in this industry before, and I'll continue to monitor it as time goes on.

Trade continues to be an area of uncertainty, and as the trade agreement discussions continue, China has been sourcing commodities from other places, notably Brazil and Argentina, resulting in a significant decline in U.S. exports. As that market has shifted, U.S. producers have seen sales increase to Europe, Africa, and Southeast Asia much more so than in previous years. The supply of commodities is weighing on prices in general. Genetically improved seed has enabled farmers to grow crops in environments where they could not in the past, and the level of supply damps the pricing.So while there’s not an agriculture crisis emerging currently, the conditions are difficult and ongoing. Profits are slim, and the excess global supply of commodities weighs on prices in general. At least for now, the concern is generally for the long term.

To conclude: As many have noted, there appears to be a need to balance the largely favorable economic data with the underlying risks, including signals from financial market volatility and uncertainty in the global economy. This is a good time to exercise patience and to continue to watch and monitor as developments occur and review additional data as they become available. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. While the U.S. economy starts from a welcome position of full employment and inflation around target, I am concerned that the crosswinds buffeting the economy have gained force at a time when previous tailwinds have lost momentum.

I did not anticipate the long shutdown when we last met. I worry that the protracted shutdown brought us closer to a tipping point in sentiment, adding to a long list of uncertainties. It came on the heels of a protracted trade conflict, a risk-off retrenchment in financial markets, a series of failed votes on Brexit, and a slowing of foreign activity that appears to be spreading from China into the euro area via Germany. The shutdown also increases uncertainty surrounding the path of federal spending when the bipartisan budget agreement expires. While any one of these risks may not, on its own, be sufficient to alter our economy's course, I am concerned that the layering-on of many separate downside risks may erode consumer and business confidence and thereby feed into economic activity. Though much of the hard data that we have in hand has provided some reassurance, some important data have been delayed by the shutdown, and the soft data raise concerns.

With regard to the downside risks, foremost is the protracted uncertainty surrounding the imposition of additional sizable tariffs on Chinese goods and in the automotive sector. This uncertainty has been a driver of equity market volatility and earnings disappointments, here and abroad, as well as a factor in capital spending plans.

A related issue is that the slowdown of growth abroad now appears to be more persistent than initially assumed. Foreign growth in the fourth quarter fell short of potential for a third consecutive quarter. China faces challenges in achieving a soft landing in the shadow of a daunting credit bubble. And though earlier accounts of Germany's slowdown alluded to transitory factors, there are growing concerns that China's weakness is spilling over to Germany's manufacturing sector more persistently. In Britain, the near-term risks associated with a no-deal Brexit are very elevated. And as Steve's chart so colorfully illustrates, there is now a large number of possible outcomes that were not well anticipated a year ago, and the probability distribution is much more even across them.

Financial conditions have tightened relative to their peak, although they have eased since December. A helpful new Tealbook exhibit summarizes several financial conditions indexes. After coming in around one standard deviation below their average level last year, the means of several financial conditions indexes have moved to about one-half standard deviation below average more recently.

In addition, I am trying to understand what lesson to draw from the shutdown beyond the painful financial stress inflicted on so many families around the country. One could interpret the recent shutdown dynamics as increasing the odds that fiscal policy could revert to sequester levels in 2020 after the Bipartisan Budget Act expires.

Against that mounting uncertainty, our goal now must be to protect the substantial progress we have made. Every indication is that the U.S. economy was in very good shape at the end of last year. Inflation remains close to our objective. Core PCE inflation came in at 1.9 percent last year, and the Dallas trimmed mean measure showed inflation at 2 percent. That's a notable achievement after many years of notable misses to the downside.

Unemployment is at its lowest level in nearly 50 years. Americans who had become discouraged and left the labor market are coming back to work, and we're seeing historically low unemployment among groups that have historically faced the biggest challenges, such as African Americans. The indications are that we're near full employment but not clearly beyond it. Average hourly earnings rose 3¼ percent last year. That's the best reading so far in this expansion but still below pre-crisis rates, and the staff estimates that labor productivity rose almost 2 percent last year.

The latest data confirm that the labor market continues to expand strongly. Employment gains averaged more than 250,000 per month for the fourth quarter as a whole. The tick-up in the unemployment rate took place in the context of another upward move in participation. Importantly, unemployment insurance claims, which can be a particularly timely indicator of labor market conditions at turning points, hit another cyclical low in the latest reading. In short, the labor market is providing no evidence that the economy is in a recession or decelerating toward one.

By contrast to that hard data, there is evidence of weakening sentiment among households and businesses. The ISM purchasing managers and new orders indexes took a notable step-down in December. The preliminary Michigan survey household sentiment index for January showed a notable decline, with the shutdown flagged by a number of respondents as having been an important factor. Importantly, a variety of indicators are signaling an increase in recession probabilities. In particular, a tested recession indicator—the yield curve slope—has started to indicate probabilities that are above their unconditional averages.

The mounting downside risks raise the question as to whether it may become appropriate to consider taking out insurance before too long. The main case for doing so would be the well-known tendency for economic activity to decelerate rapidly in a nonlinear fashion that is not easily captured in our forecasting models. Further bolstering the case for taking out insurance is the proximity of interest rates to their effective lower bound in the context of a persistently lower neutral rate. The resulting limited amount of conventional policy space makes it all the more important to seek to prevent a recession. At this point, the risks of an overheated economy have fallen, asset prices are off their peaks, and inflation has been quiescent. For today, watchful waiting in the context of prudent risk management is an appropriate response. So far, the available hard data are providing no indication that the economy is downshifting significantly faster than anticipated in the SEP median.

Moreover, the changes to forward guidance and balance sheet communications that we are embarking on tomorrow will meet or exceed, I hope, what markets have been expecting. It would be prudent to see what effects those changes have and how the outlook evolves before taking additional steps. That's the lesson that emerges from the 2015–16 shock, when the economy ultimately came close to meeting the SEP forecast on activity and inflation because the Committee held the policy rate flat, providing a buffer against the shock, rather than sticking to its tightening plans. Of course, if model-based recession probabilities were to mount further, or if weakness began to be evident in hard data, such as claims and payrolls, we should be prepared to shift course. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. Starting with the Ninth District economy, little has changed since December. Most sectors continued to do well, although agriculture remains weak and residential real estate and energy continued to slow. Manufacturers and retailers are generally optimistic about the outlook for 2019. Our survey evidence on wage growth in the District appears consistent with the national picture, with half the firms reporting growth a little bit above 3 percent.

Indian country, which we have a lot of in our District, has been especially hard hit by the government shutdown. Government spending accounts for about 12 percent of all jobs in federally recognized reservations, and so it has been a disproportionate hit for their local economies.

In regard to the national economy, not much has really changed in the data since the December meeting. Solid job growth, which is probably my biggest surprise, continues, and we had strong end-of-year retail sales. The jobs number in the December report and upward revisions for previous months suggested 760,000 new jobs were created in the fourth quarter, which is remarkable. There is no evidence that job growth is slowing. Even better news, as others have noted, is that the job growth is being fueled by growth in labor force participation, but the unemployment rate has essentially been flat for six months.

Wage growth continues to rise slowly with average hourly earnings running above 3 percent for the past two months, which, as others have noted, considering productivity, is consistent with our 2 percent inflation target. Seeing so many new jobs being created in the context of modest wage growth leads me to think that we have not yet reached maximum employment. And this being my 25th FOMC meeting, I think I'm ready to declare that I have no idea where maximum employment lies. [Laughter]

You know, for me, what does "maximum employment" mean? It means, you go beyond it, and it leads to above-target inflation. Well, in the context of very stable inflation expectations, maybe at levels below 2 percent, and in the context of what President Daly reported, labor having relatively low bargaining power, how far away are we from the job market leading to above-target inflation? It seems like we're a long way away from the labor market leading to above-target inflation.

So the only thing I think I know for certain is that the employment to population (EPOP) ratio can't be greater than 1. Other than that [laughter], I think that we may be a long way away. And people are choosing either not to leave the labor force or they're choosing to reenter, but they are willfully making this choice. There is nothing that says that that is unsustainable to me. If wage growth picks up a little bit, maybe the labor supply response will be even stronger. There may be a lot more people who want to work. So I just think it's more good news. When we talk about the policy go-round tomorrow, I think there is actually a very good story on why we should be taking the policy action that we're taking tomorrow, rather than a concerning story.

There are a few negative developments worth noting. As others have said, consumer confidence fell in January, according to the Michigan survey. It may just be a blip, but it's worth paying attention to. Surveys also show some weakening of business sentiment. The ISM manufacturing index fell sharply in December. And notable declines in existing home sales in December suggest that the interest-sensitive housing sector has weakened further.

In regard to inflation, not much has changed since the previous meeting. The risk-neutral probabilities on the inflation outlook are still tilted somewhat to the downside, and I do take the signals from the market-based measures of inflation compensation seriously. I think we should pay attention to those.

Financial markets, as others have noted, have had large intermeeting swings in asset prices, though the net changes are very small. In addition to high volatility, other indicators are sending warning signals. The yield curve continues to be pretty flat. The 10–2 spread is around 16 basis points. Corporate bond spreads remain higher than in the past few years, with some signs of stress for bonds with ratings below investment grade. And analysts' estimates for the 2019 S&P earnings have been slipping since mid-October. These signals suggest that the risks to the outlook are tilted somewhat to the downside. And, of course, others have noted sagging global economic growth—Europe, China, and Brexit are all downside risks that we're all paying attention to.

So, in summary: little changes in the hard data. My baseline outlook for the economy continues to be positive, similar to December. I continue to assess risks to the outlook as somewhat tilted to the downside, and those risks have perhaps increased slightly. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Vice Chairman Williams.

VICE CHAIRMAN WILLIAMS. A long time ago, in a galaxy far, far away—I'm, of course, referring to our December FOMC meeting [laughter]. We were confronted with contrasting signals from strong U.S. economic data on the one hand and warning signs of an impending downturn from financial markets and abroad, on the other. Subsequent developments have shown that this was not a transitory fluke but represents an ongoing pattern.

Global economic and financial developments have continued to send worrying signals, as many have mentioned. The tightening of financial conditions that started in the fall, has persisted. And although markets have rebounded in recent weeks, this is, in part, because of market participants' view that the outlook for monetary policy has shifted.

Investor sentiment remains fraught, with the record-breaking government shutdown adding to trade and geopolitical tensions to form a bubbling cauldron of political uncertainty. In addition, disappointing data from the euro area and China suggest a further step-down in global growth. In that regard, it is worth noting that the ECB has publicly acknowledged that the risks for euro-area growth are tilted to the downside.

All of this is leaving an imprint on consumer and business sentiment in the United States. The tone of recent household and business surveys, as well as the Beige Book, all suggest declining optimism at home. The most recent business surveys in the Second District, for example, have definitely been more downbeat, and these developments have affected my outlook in two ways. First, I've shaved off 0.2 from my 2019 forecast for GDP growth, bringing it to2 percent. Now, this is still above my 1.8 percent estimate for potential growth, but by just a smidgen. Second, I now see a greater probability of the economy growing below its potential rate this year and inflation staying persistently below our longer-run goal.

The most prominent downside risk relates to the tightening of financial conditions since September and the implications for the economy. Over the past several months, broad stock market indexes have dropped significantly, and corporate bond spreads have widened. It is true that levels of these measures still appear to be broadly accommodative. For example, price-to-earnings ratios remain elevated, and corporate spreads are below their 2016 levels.

Analysis from my staff, however, shows the changes in these measures rather than their levels provide the most useful information about future real GDP growth. So if you base it on the historical relationships between changes in key financial conditions and subsequent GDP growth, the tightening we've seen since September suggests a reduction in 2019 GDP growth of about ½ percentage point.

Now, this point estimate obscures a far more important point, and that is that the effects of a large change in financial conditions on the economy are highly uncertain and depend on the root causes underlying the change. In particular, my staff examined the recent widening of credit spreads in the context our New York DSGE model, and this analysis follows very closely with what President Evans reported. I think our conclusions are very similar.

Our analysis finds that, in the model that we use, there are two different shocks that can account for a widening in corporate bond spreads. The first type of shock is relatively benign and reflects some tightening of credit availability for firms; this results in a relatively modest and transitory decline in investment. A good example of this shock is a widening of corporate bond spreads that we saw back in the second half of 2015 and early 2016 that slowed growth somewhat relative to what would have occurred but didn't stall the expansion that was under way. In that regard, I actually thought Steve's presentation, which was exactly on the same experiment—we ran it with our model, and you ran it here with SIGMA. This was a bigger shock than we have experienced today, based on this analysis, but I find that the results here were very similar to what we found, in terms of, this is a shock that slowed growth but didn't derail the economy.

The second type of shock is far more severe, and it's associated with a huge drop of investment and consumption. And this can be thought of as a broad risk-off shock that affects all decisions by households and businesses. It's this second kind of shock, albeit at a much larger scale, that the model credits with causing the massive decline in output during the Great Recession. Now, using the information that we have today, a reasonable guess is, we're experiencing the relatively benign type of shock. However, much uncertainty surrounds this guess, and should the severe shock turn out to be the dominant cause, the implications for economic growth will be much larger than the base case presented earlier. And, as President Evans said, in our model, as you get more data, it helps you differentiate as to what the source of the shock is.

With regard to inflation, recent data continue to suggest inflation is still running slightly below target, and the decline in oil prices is putting downward pressure on our headline readings. While wage gains are consistent with inflation near our 2 percent goal, longer-run inflation expectations are generally on the softer side. And in this regard, I don't think we'll ever resolve the debate about whether it's inflation expectations or breakevens, but I would remind us of the discussion of a few years ago that, if the risk premium around inflation has declined, that's probably not a positive signal either. So I view the declines in the breakevens as still something we should pay attention to.

Tepid growth and muted inflation in the global economy are associated with more accommodative policies abroad in the period ahead, and that increases the risk of a dollar appreciation. And, like Governor Clarida and President Kashkari, I just don't see excessive inflation as a concern at this juncture. In fact, I'm more concerned that inflation may continue to undershoot our target, especially given strong evidence that inflation expectations, if anything, are anchored somewhat lower than we'd like and, of course, especially if growth slows further than I expect. Thank you.

CHAIRMAN POWELL. Thank you. And thanks, everyone, for your comments. I have some brief comments of my own.

Like many of you, I also continue to see a reasonably favorable baseline outlook for this year against a background of crosscurrents, both foreign and domestic. On the by now well-mentioned list of crosscurrents, I would include financial conditions that have tightened materially since September; continuing evidence of slowing global growth; and some unresolved government policy issues, including Brexit, the ongoing trade negotiations, and the effects and ultimate disposition of the partial government shutdown. Although these crosscurrents are not much reflected, yet, in the main macrodata that we've received, we have seen—despite the shutdown—a growing number of weaker readings on household and business surveys, and this is echoed in the reports that many of you around the table have delivered regarding uncertainty on the part of your contacts.

In addition, some of us seem to have marked down a bit, at the past two meetings, estimates of growth. We mainly still see a solid outlook, although it feels like estimates are moving down toward the bottom end of the range of 2 to 2½ percent for 2019, and appropriately so. Even if growth remains modestly above potential, this year will suffer by comparison to last year's strong growth of a bit above 3 percent. And, as some observed, that downshift may not feel particularly smooth.

With the decline in growth and the buildup of downside risks, I see the risk-management calculus of policy as having changed from what was in effect for most of last year. For much of 2018, I saw it as appropriate to think of our monetary policy as balancing two risks that were implicitly of roughly equal size and salience: the risk of too-high inflation versus the risk of prematurely terminating the expansion with too-tight policy. The picture today looks quite different. The performance of inflation was quite muted last year in the face of strongly pro-cyclical fiscal policy, growth well above trend, and unemployment well below estimates of the natural rate. If inflation barely budged in that environment, it's hard to see a significant risk that inflation will materially overshoot our target this year and certainly not in a way that threatens de-anchoring expectations to the upside.

More generally, we clearly have yet to demonstrate that we can deliver on the oft-stated symmetric nature of our inflation goal. The last time we had two consecutive calendar years in which core inflation was at or above 2 percent was 2006 and 2007. I would also note, as Governor Clarida did, that over the past 25 years, core PCE inflation has averaged just 1.8 percent. All that is to say that we should take the absence of significant, credible upside risk on inflation quite seriously. I would also mention that measures of elevated risk appetite from last year have reverted closer to their longer-run normal levels over the past month or so, removing another overheating kind of threat.

On the other side of the risk-management equation, the risk of needlessly shortening the expansion has surely risen. Many market-implied probability estimates have risen—most notably, including the ones featured in the Tealbook, which have moved up close to 40 percent. Now, I know that those measures have a well-deserved reputation for false positives, as Steve mentioned, and without leaning on the most worrisome numbers, I think that the risk of recession has clearly moved higher—let's say, the risk in the next couple of years—while the risk of excessive inflation has moved down.

Together, those facts mean that the case that the economy demands further rate increases has weakened. So our individual communications with the public in recent weeks have sent a message of patience. It has calmed markets and may already be showing up in improved business sentiment, according to some of our contacts. But those contacts will need to be backed up by appropriate changes to our official statement as well as our policy stance.

To sum up: We've covered a lot of ground in our policy normalization journey, with the funds rate now in the range of our estimates of its longer-run neutral value. This is a good place to wait and listen closely to the data. The baseline projection looks good, and there are no signs of an unwelcome rise in inflation. So, for now, we should patiently watch as the path of the economy becomes clear.

And with that, let's call it a day. Everyone travel safe, and we'll get back together and reconvene at 9:00 a.m. tomorrow. Thanks very much.

[Meeting Adjourned]

January 30 Session

CHAIRMAN POWELL.[6] Good morning, everyone. Let's get started. Thanks again for your thoughtful comments yesterday in our discussion about the operating regime and related topics.

We've handed out a revised version of the statement that we intend to issue later today. And before we formally endorse this statement, let me try to address the main issues that were raised. The first was about the word "abundant" in the description of the operating regime. Some of you spoke in favor of this change, and others were opposed. I agree with the intention that we want to be as clear as we can in our description of the framework, and, particularly, we don't want to leave any ambiguity about the fact that we will not operate close to the point of reserve scarcity. To this end, I propose that we modify the first bullet to emphasize that there will continue to be "an ample supply of reserves." And I think this gives us the clarity desired without using terms that would be overly provocative.

In addition, I'm going to say in my press conference statement that this framework that we've been using, and will continue to use, is sometimes known as a "floor system" or as an "abundant reserves system." I need to say both of those things, just to remove all doubt. We're not backing away from abundance here. We're just clarifying.

The second issue, which pertains to the second bullet, is that we want to revise the high hurdle in the 2017 principles that would seem to limit our scope to adjust the details of our approach to balance sheet normalization. And the challenge here is making this revision without signaling a change in our view that interest rate policy is and will remain our active tool for adjusting the stance of monetary policy.

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

A number of you offered suggestions on this front, but a constraint here is the structure of the last bullet in the 2017 balance sheet normalization principles. Given the structure of the last bullet of the 2017 principles, simply retracting and replacing the middle sentence of the 2017 bullet is difficult, without having anything to say about the other two sentences in that bullet. Moving the first sentence or deleting the third could well raise questions about what these differences are meant to mean relative to the 2017 bullet.

To help address concerns about the interpretation of the second sentence, I'm proposing that we delete the "However," which was a ghost from a prior life, at the beginning of the sentence. That should help avoid a misinterpretation that the second sentence is describing an exception to the general rule that the federal funds rate is our primary tool. In my press conference, I'm really going to leave nothing to doubt and go through, essentially, every bit of this and say, "This is what we mean"—pretty clearly, I think.

So it's an important document, and, following our past practice, it will be helpful to indicate in the minutes that there was broad support among participants for the release of the statement. I'd like to call for a show of hands for those who can support this. I'd also like to ask if anyone has anything they'd like to say at this point, or do we wish to proceed directly to that? Would there be any comments? If not, then let's see a show of hands. All those in favor? [Show of hands] Any opposed or abstentions? [No response] No. Thank you very much.

So, as we discussed, that statement will be released at 2:00 p.m. alongside the usual policy statement.

We will now move to Thomas's monetary policy briefing. Thomas, over to you.

MR. LAUBACH.[7] Thank you, Mr. Chairman. I will be referring to the handout labeled "Material for the Briefing on Monetary Policy Alternatives."

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

As many of you remarked in your previous go-round, the contrast in recent months between mostly solid economic data and the signals from financial markets has been stark. On the one hand, the modal outlook for the U.S. economy—the staff's as well as that of many outside forecasters and, judging by your comments, your own—is not much revised. To be sure, the tightening of financial conditions, on balance, since your September meeting and the weaker outlook for foreign growth are new headwinds, in addition to the anticipated waning of fiscal stimulus. The effects of these headwinds on the modal outlook are mostly reflected in a notable flattening of the expected federal funds rate path since your September meeting, while projected labor market and inflation outcomes are little changed.

On the other hand, perceptions of downside risks to this benign modal outlook appeared to increase markedly through the end of the year, and financial markets showed heightened sensitivity to these risks over the early part of the intermeeting period. There are a number of risks one could list, including the possibility that economic activity abroad may decelerate more than expected and that ongoing trade tensions may generate larger effects than experienced so far. In an environment of heightened uncertainty, there is also a risk that a sharp pullback from risk-taking by investors, to the extent that they are pricing in a fear of recession, could turn out to be self-fulfilling. In fact, as shown in the upper-left panel, the probability of the economy entering a recession sometime over the next four quarters, as predicted by several models, has moved up sharply. As reported in a box in the Financial Market Developments section of the Tealbook, the probabilities predicted by models using yield spreads—either in isolation or in combination with the excess bond premium, a measure of the willingness of investors to bear credit risk—have now risen to levels not seen since 2006.

In light of the dissonance between nonfinancial and financial developments in recent months, one might be skeptical of the predictions of models based exclusively on financial information. The upper-right panel reports the probability of the economy being in recession in 12 months' time estimated from a model that includes 17 indicators of both real and financial developments. The message is similar, even though the probability of recession has not moved up as abruptly in recent months as in the models shown to the left. This model, which the staff described in a memo sent to the Committee in March 2016, uses statistical techniques to determine the weights that should be given to various indicators for predicting recessions at different horizons. As it turns out, at longer horizons such as 12 months, it places the greatest weight on yield spreads and the excess bond premium. In other words, when looking beyond the next few months, the current strength of the real-side data doesn't provide too much comfort.

In light of these conflicting signals, how should you steer between the shoals of responding excessively to fickle financial markets, on the one hand, and missing the signals of an oncoming recession—one that might, perhaps, be avoidable if monetary policy reacts preemptively—on the other? The approach that alternative B takes is threefold: It remains positive about the modal outlook by asserting that the current favorable outcomes remain most likely. The reference to global economic and financial developments will likely be read as an implicit acknowledgment of downside risks, without yet expressing acute concern. And it describes the appropriate posture of policy in these circumstances as one of patience.

The middle-left panel lists several reasons why the posture of patience may seem appropriate. By most estimates, the stance of policy is now close to longer-run notions of neutral—considerably more so than a couple of years ago. This diminishes the urgency to move in a particular direction. The second reason is that the risk of monetary policy remaining too loose seems to have diminished in recent months. As Bill mentioned, core inflation has, on balance, been slightly softer over the past six months than expected. Furthermore, the statement notes the sizable decline in far-forward inflation compensation since October, shown by the black line in the panel to the right. Of course, inflation breakevens are hard to interpret, and, as was noted, such interpretations are model dependent. The green and red lines show estimates of expected CPI inflation, 5 to 10 years ahead, contained in breakeven inflation from two versions of the staff's model: one in which inflation is expected to converge back to its sample mean in the very long run, the green line, and another in which the endpoint for inflation is allowed to drift over time, shown by the red line. The estimated levels are different, but they have remained broadly stable since October. However, a decline in inflation compensation attributed mostly to declines in risk premiums could also be concerning insofar as it signals that investors are keener to insure against low-inflation outcomes.

Another concern about overly accommodative policy leading to overheating might have focused on stretched asset valuations. Just one example: The lower-left panel shows that the staff's estimate of the equity risk premium has moved up substantially in recent months and is now quite close to its average since 2000. Taken together, these factors suggest that the case for some further gradual increases in the federal funds rate has weakened, consistent with the removal of this language from the statement.

The amount of red ink in alternative B might raise concerns about whether, in response to such a statement, the public would perceive a significant change in the Committee's reaction function. In the lower-right panel, I offer a few thoughts regarding such concerns. First, as the federal funds rate approached estimates of its longer-run neutral value, the extent, and even direction, of further rate adjustments were bound to become increasingly uncertain. Expectations for further rate hikes, your own included, had already declined by the time of the December meeting, and your statement would signal that the federal funds rate is, for now, in a good place. Moreover, your December statement had already highlighted that you would continue to monitor global economic and financial developments. With alternative B, you would communicate the point that these developments leave you comfortable with the current stance of policy, pending the arrival of more data.

Alternative B would provide you with flexibility by leaving you with the option of moving in either direction if circumstances require. Were downside risks to increase or materialize, you might want to consider adopting language, such as in alternative A, that explicitly tilts the balance of risks. Conversely, if risks to the outlook were to recede and concerns about inflationary pressures or other signs of overheating increase, you could take another step in policy firming while maintaining a symmetric posture with regard to the outlook for policy.

Thank you, Mr. Chairman. That completes my prepared remarks; the December statement and the draft alternatives are shown on pages 2 to 7 of the handout. I will be happy to take any questions.

CHAIRMAN POWELL. Thanks. Any questions for Thomas? President Bullard.

MR. BULLARD. Thomas, maybe I missed it, but the black line in the middle panel, on the right side—this is just the straight read of expected inflation?

MR. LAUBACH. That is the model's fitted value of break-evens. The model's estimate has some fitting error. So the black line is the fitted value, which is a little different from the raw data. But then you decompose that fitted value into the expected component and the risk premium component. What I'm showing here is the expected component.

MR. BULLARD. But the legend says "Expected inflation, assuming a random walk factor." That's the red line.

MR. LAUBACH. Yes.

MR. BULLARD. And then the other line just says "Expected inflation."

MR. LAUBACH. Sorry. Okay. Expected inflation gears down—so, expected inflation from the standard model, which is the one that assumes that there's not a random walk factor but all factors are stationary.

MR. BULLARD. Okay. Expected inflation with stationary factors.

MR. LAUBACH. Yes.

MR. BULLARD. Got you. Which do you think is the most meaningful of these three lines, or is this just meant to illustrate model uncertainty—

MR. LAUBACH. I thought it might be helpful to show these two different lines to illustrate the point that, of course, these decompositions are uncertain, and what conclusions you draw from the breakevens about what's happened to expected inflation are model dependent. I personally have to confess that I have some sympathy for models that allow for a drift in the endpoints—in particular, in the inflation endpoint—because this model, for example, is estimated over a sample period that starts in, I believe, 1991. So that already excludes most of the high-inflation period of the '70s and early '80s. Nonetheless, whenever you estimate these models, assuming only stationary factors, you are baking into the model the property that, fundamentally, in the very long run, inflation is going back to the sample mean. And that may not be the right assumption.

MR. BULLARD. Would it be reasonable to interpret that sample period as roughly corresponding to the inflation-targeting era in the United States—starting, let's say, in 1995—when the Committee hit the 2 percent inflation target, and it's basically been around 2 percent since then? So the model based on stationary factors is something that might be the most logical one for that sample.

MR. LAUBACH. Again, this is a close judgment call over the sample.

MR. BULLARD. Right.

MR. LAUBACH. You know, if the sample included the '70s and '80s, I would definitely say you want to have that shifting endpoint, because that's a different period.

MR. BULLARD. Right.

MR. LAUBACH. From '91 on, you can argue—you could go either way.

MR. BULLARD. Yes, you've got the Committee naming an inflation target and implicitly having an inflation target dating from some point in the mid-'90s. That sounds like a stationary assumption to me. Yes. But it's all very sensitive—disturbingly sensitive, you might say—to details of the assumptions.

MR. LAUBACH. Yes. And, as you know, some years ago, we also showed a chart that had a comparison using various other models that are being estimated throughout the System. There are a number of them. And different models lead you to somewhat different places.

But, again, the point that I highlight in my briefing is—as you can tell, the random walk version has a tendency to be a little bit more volatile—but in neither of these two versions would the model analysis say loudly that there's been a decline in inflation expectations since, say, October. So it attributes most of the decline to risk premiums.

MR. BULLARD. You say neither of these models with the black line goes down?

MR. LAUBACH. No. Neither the red line nor the green line goes down a lot. Which means that both of these two models would say most of the decline was not in the expected-inflation component—

MR. BULLARD. One of these three models is wrong, and I just gave you an argument for why the stationary assumption might be the good logic. So the black line might be the right one.

MR. LAUBACH. But the black line is the pure breakeven, so the black line is not the decomposition into the expected component on the one hand, and the risk premium, on the other.

MR. BULLARD. Oh, okay. We'll take this offline. Thank you.

CHAIRMAN POWELL. Great idea. Vice Chair.

VICE CHAIRMAN WILLIAMS. I actually have a question on the first sentence of alternative B, and I'm looking for help from the staff to understand what different adjectives mean. And I think that the challenge we face today is, it's the end of January, so when you talk about economic activity or economic data, where we've got a lot of data on Q4, and we've got some indications heading into Q1, but of course, we're only one-third of the way into Q1, so are we talking about the fourth quarter, or are we talking about what we're seeing going into the first quarter?

I guess my question is, I look at the Tealbook—we had 2.8 percent as our view on what growth will be in the fourth quarter, slowing to the low 2s in the first quarter. So when I read this sentence, it says "indicates that the labor market has continued to strengthen." That's fine. We have the data there. "Economic activity has been rising at a strong rate." Thinking about a forecast of low 2s for Q1—that's the data stream we're kind of seeing—is "strong" maybe a little too strong? Is a word like "solid" maybe more consistent with how we've talked about this? I'm just trying to understand how we're viewing the incoming data in telling us what our "takeaway" is about the signal we're getting about growth.

MR. WASCHER. As you point out, the data we have, which are really just through the end of the year, look pretty strong. Our forecast is for it to slow down, but that's really based a lot on a view that consumption was stronger than fundamentals in the fourth quarter and is going to come down closer to what fundamentals would imply in the first quarter. And that seems to be corroborated by some survey data. But we don't really have any hard data, other than labor market data, for January yet. So I think it depends on whether you want to refer to the hard data that we have, which are just through the end of December, or whether you want to project your view about what things might be in the first part of this year.

VICE CHAIRMAN WILLIAMS. I do think it's just challenging, given we're at the end of January and we've got these two different perspectives.

MR. WASCHER. Yes, I agree.

VICE CHAIRMAN WILLIAMS. I do think it says "information received." Again, the labor market, I think, we've already highlighted independently as being very strong, which is absolutely true. I just worry a little bit that "economic activity has been rising at a strong rate" sounds like we're maybe not paying attention to some of these other indicators.

CHAIRMAN POWELL. Can I just jump in? As Thomas and Trevor know, I sent what I'll call a pretty strong email to this effect, for just the reasons that John is saying. Was it yesterday morning? It seems like a year ago [laughter]—but the day before yesterday, maybe. You know, we can be technically right here and sound a little clueless, I think. I mean, literally everybody sees the first quarter coming down. I know we haven't got the data; we were supposed to get them today. Our own forecast suggests it'll be solid, not strong. I much prefer "solid" here. I think it'll be noticed, and some will see it as—even though I understand the mechanics of it—an excessively positive outlook: Everything is just great. That's my personal view. President Kaplan.

MR. KAPLAN. Yes. Let me weigh in. I agree with that. And we have had data in January—we've had corporate earnings. Now, you watch corporate earnings—I used to watch corporate earnings for a living, you can't hardly get away from it—and what you're seeing is, economic data have weakened, according to what corporates are saying, and they're giving guidance. I think those are data. So I hadn't focused as much as—but I agree with that. I think "solid" would be a far wiser phrase to use—and much more consistent with what we're seeing in a raft of corporate earnings reports and guidance from corporates informed by what they are seeing already in January.

CHAIRMAN POWELL. We had actually discussed bringing this up at the meeting. Now we've done that. Are there any solid objections or strong objections to this? [Laughter] I see a lot of nodding heads. I don't see anyone saying—okay. All right. So, fine. Let's assume that this is, then, changed from "strong" to "solid," and let's ask about other questions or comments on Thomas's presentation. [No response] Thank you. Hearing and seeing none, let's move to our go-round, and we'll begin with Governor Clarida.

MR. CLARIDA. Thank you, Mr. Chairman. I support alternative B as written. In paragraph 1, it does make sense to acknowledge the decline in breakeven inflation, as one of the rationales for our new language in paragraph 2 is muted inflation. As I indicated in the outlook go-round, I have some concern that while inflation expectations may be well anchored, they do not appear to me to be necessarily well anchored at our 2 percent target, but perhaps somewhat below that level.

To me, a crucial consideration, as I assess what future adjustments to the target range for the funds rate may be appropriate, will be to assess, on the basis of the data available, if an adjustment to our policy rate will best serve the goal of attaining and sustaining both pillars of our dual mandate. While we can and, I suspect, will at future meetings debate the level at which inflation expectations are anchored, I do not think there's broad support around the table for a policy that would seek to push inflation expectations materially lower than they are at present. At a minimum, to me, price stability requires not only that we actually achieve 2 percent core inflation at least once or, perhaps, more than once over the business cycle, but it also, at a minimum, requires that expectations of inflation, however proxied, do not decline from here. So to our list of u^* and r^* as variables that we're learning about, we need, I think, to monitor closely a broad range of data on whether or not inflation expectations remain stable or are drifting lower.

In terms of the balance of risk, I support deleting the existing reference in the last sentence of paragraph 2. That said, I would suggest that in the future, if we want to think of a "balance of risks" sentence, it could be replaced by a sentence along the lines of "Under appropriate policy, the Committee expects risks to the outlook to be balanced." This would direct attention to the outcomes we seek to achieve with our policy conditional on a shock and not on the sign of the shock itself.

Finally, in paragraph 2, I concur with the statement that the Committee will continue "to view sustained expansion of economic activity" as the most likely outcome. That said, I hold this view in part because of the easing in financial conditions that we have seen this year. As I pointed out in my outlook go-round, financial conditions are, perhaps surprisingly, slightly easier today than they were before our December meeting. I believe—and the New York primary dealer survey seems to support the view—that postmeeting communication via the minutes and public remarks given by many of us around the table have shifted market expectations of our future policy rate path in a direction that is supportive of this easing in financial conditions since December.

In our statement today, we delete the declaration that "some further gradual increases in the . . . funds rate will be consistent with" our baseline view, and I support that deletion. The question then becomes, as Thomas mentioned, how should our new language—that we can be "patient" as we determine "what future adjustments to the . . . funds rate may be appropriate"—be interpreted? I agree with some recent public comments by several participants at this meeting that there should be no particular bias toward raising or lowering rates until the data more clearly indicate the path of the economy, and I think this language does that. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Harker.

MR. HARKER. Thank you, Mr. Chair. I support alternative B as written and with the change from "strong" to "solid." The language in paragraph 2 substantially changes the policy narrative and better reflects, in my view, economic realities.

Although downside risks are increasing, I believe that specifically stating that observation—as in alternative A, which I have some sympathy for—it may generate an overreaction, with the public thinking that we are more worried than we actually are. The possibility of interjecting additional uncertainty into an already uncertain environment should be avoided.

But, in stepping back a bit from the details of the statement and even thinking about my own public comments, now and in the future, I question the use of the word "uncertainty" or "risk" in our current situation. My former academic department at Wharton was home to a group of really first-rate behavioral economists, and they would constantly chide me for the overuse or misuse of the words "uncertainty" and "risk" when, in fact, the situation was ambiguous. "Uncertainty" implies that one can assign probabilities to future events, whereas an ambiguous situation is one where even assigning probabilities or knowing all states of nature is impossible. I believe we are currently in the latter situation—simply unable to foresee possible future events, economic and political, let alone assign probabilities to them or fully understand their magnitude.

Ambiguity is like being in a dense fog, and if you're driving in such a fog, the best advice is to stop and pull over until the fog lifts, lest you run off a cliff or hit a wall. Patience is clearly called for right now with respect to our policy rate path, and I think we need to recognize that it's time to pull over for a while. Thus, I think the language in alternative B is sufficient to assure markets that the Committee has no intention of overreacting when setting future monetary policy. And, again, I support it as written. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. I support alternative B. Current circumstances justify being more patient, and flexible, until some of the uncertainties that have played havoc with financial markets are resolved. I am very much in favor of separating the announcement of the statement, which includes significant changes, from the full announcement of the balance sheet. Doing both at this meeting risks the possible perception that policy was being unduly responsive to recent market movements.

I have also been surprised by how many journalists have attributed recent changes in Fed speeches as being responsive to political pressures. A public perception that the FOMC is unduly responsive to market or political pressures is clearly undesirable, now and in the future. Even with separation of the monetary policy statement from the balance sheet normalization, there are still significant communication challenges. In terms of the balance sheet, I have great difficulty linking recent financial market perturbations to our balance sheet policy—which, after all, was announced and implemented some time ago, as I discussed yesterday. But I do worry that without significant message crafting at the press conference and in subsequent communications, many market participants will assume we are done reducing accommodation for this cycle. Again, I believe that when some of the uncertainties are finally resolved, it is quite likely we will see growth resuming above potential, consistent with the Tealbook and private forecasts.

It would be useful if we had an SEP this meeting, because it would make clear that a pause does not mean we are necessarily done, especially if the financial market downturn and other uncertainties turn out to be fleeting. As an aside, I think we should consider having an SEP at every meeting. That could have significant benefits, especially now that press conferences occur after every meeting.

I think it is important that our communication from this meeting be somewhat nuanced—supportive if the economy needs it—but clarify that we have not made a sudden and dramatic shift from our assessment of the economy or appropriate policy in our December SEP to a current stance that could be viewed as signaling no further hikes. Such an impression would leave us in a very difficult position later this year if, indeed, the financial markets recover and the economy continues to grow strongly. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Daly.

MS. DALY. Thank you, Mr. Chair. I support alternative B. That said, I continue to have reservations about the language in paragraph 1, although I will not be suggesting any line edits, as the one I was going to suggest has been already adopted. So I strongly support "solid."

With regard to the stance of policy, I agree that we can be patient in determining further adjustments in interest rates. Now, I arrive at this view for several reasons. First, as I indicated yesterday, the tightening in financial conditions since September, the uncertainty about economic policy, weaker business and consumer sentiment, and slower foreign growth all weigh on the outlook.

In addition, inflation data have been coming in soft, and there are several headwinds that I documented yesterday—and many did—that are likely to put additional downward pressure on the readings. I'm also taking signal from the fact that we've been unable to keep inflation sustainably at 2 percent despite ongoing improvements in labor markets and real GDP growth well above our estimates of its sustainable pace. And, of course, there are several rate increases already in the pipeline that have yet to fully affect the economy. So against this backdrop, I think pausing the path of policy adjustments and assessing what future adjustment to our policy stance will be needed are completely appropriate.

It's also worth noting—and President Mester did a nice job on this yesterday—that one way to look at the current conditions is, this is exactly what we expected to happen. We raise interest rates, and the economy slows to a sustainable pace. Relative to my forecast last year, we've just arrived here a lot more quickly than I expected, and that's in part due to the shocks we've mentioned—slower global real growth and rising uncertainty—but also due to the tightening in financial conditions, which were more responsive to these developments than I factored in. I had taken some signal from the fact that they hadn't responded very much early in our tightening cycle, then responded a lot later in the cycle. So as it's difficult to foresee fully exactly how these shocks will play out in the economy, and financial markets are still digesting our previous actions, it's, again, appropriate to wait and decide on any further adjustments.

I think the final part of my logic is that—and this is something President Kashkari pointed to yesterday—with inflation lower than we want it to be, we have a little room to run. That is, we have a little room to determine what full employment really is and whether we've reached it.

With all of those arguments, you might ask why I have any reservations about the statement. So let me turn to that. The details of the rationale for altering our stance of policy that I just referenced, which we referred to yesterday in our discussion and which Thomas nicely laid out, are not fully transparent in the statement. I'm not saying the statement doesn't have enough room for everything, but it's not logically laid out for me, at least in my mind.

I still see a fairly sharp disconnect between the data description in paragraph 1, which looks very similar—with two exceptions: the "solid" now, which I think is a great addition, and the mention of inflation expectations, which is also a great addition. It's otherwise pretty similar to the ones we've had since August, but then paragraph 2 is quite a bit different. We've moved from "further . . . increases" to "patient" in "adjustments." So I think these additional changes have the potential to be misinterpreted as reacting a lot to financial conditions, and perhaps even overreacting, even though we've mentioned global developments and muted inflation pressures.

This doesn't suggest a change in the statement. It just means—and I think, Chair Powell, you've already referenced this—there'll be a lot of pressure at the press conference to explain the links and the logic that we've gone to. But I think it will also mean that, in the intermeeting period, all of us around the table will have to continue to beat that drum, if you will, and explain and reexplain these messages. And especially in the context of releasing the balance sheet normalization principles, these are just going to be things that will probably require, if our previous communications are any indication, that we spell it out, say it again, and spell it out again so that we can ensure that the rationale we have in mind is the one that is the main public narrative. Thank you.

CHAIRMAN POWELL. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chairman. I generally support alternative B for today. I would like to bring one phrase from alternative A into alternative B, which is the "if any" clause in the sentence in paragraph 2: "In light of global economic and financial developments . . . what, if any, adjustments to the target range for the federal funds rate may be appropriate to support these outcomes." This was in an earlier version but was removed later. I think it would give a better signal about where we are, and a better signal about data-dependent policy. We could raise the rate further, but we would have to see the data surprise to the upside.

I agree with President Daly that a key challenge here at this meeting is going to be that the forecasts of the U.S. economy haven't really changed very much, but our policy setting seems to be altered. I think that we'll all get a lot of questions on that, and I think the tension between the first paragraph and the second paragraph just illustrates that situation. I think the case for a more dovish policy is that inflation readings have been muted and inflation expectations arguably have dropped.

The overall message, I think, should be that we have successfully normalized policy in the United States—if not completely, then substantially. We used the fact that the real economy surprised to the upside during 2017 and 2018. We took that opportunity to raise the policy rate some 200 basis points and allowed for a reduction in the size of the balance sheet. Now that the real economy looks set to decelerate in 2019, it's time to move to a data-dependent strategy, and to wait and see the effects of previous policy changes. As we all know, there are long and variable lags in monetary policy, and it could be that those will manifest themselves in 2019 and 2020.

Like Governor Clarida, I prefer no presumption about the future direction of the policy rate. I think this addition of the "if any" clause would help with this. I've long wanted to get away from any presumption of penciling in rate increases or projecting rate increases before we know what is actually going to happen in the economy, and I think, especially at this juncture, it would be good to get into that mode.

The U.S. policy rate, in my opinion, is very high by international standards, particularly when compared with Europe and Japan, where policy rates remain negative. I see our current policy rate setting as mildly restrictive. I think the global safe real rate, by any back-of-the-envelope or model-based-type calculation, is still somewhat negative. Even if you think it's about zero and you add 2 percent for our inflation target, that would still give you a neutral policy rate of 2 percent or maybe somewhat less than that. So we're above that right now. I don't think we're far enough above it to be terribly restrictive, but it's mildly restrictive. I think it's unwise to be mildly restrictive when inflation readings are just at or below our target for inflation and in a situation where we've missed inflation to the low side since 2012. The Dallas Fed trimmed mean inflation rate is right at 2 percent, but the Committee's preferred measure, the core PCE inflation rate, is just a little bit below target.

Because I think we're mildly restrictive in this situation—the economy is decelerating, and we're below target on inflation—this has driven market-sensitive measures of inflation expectations to uncomfortably low levels. I'm hopeful that these measures will rebound higher with this statement today and our policy through the first half of 2019. I think that that will be helped with this essential signal that normalization is either over, or nearly over, in the United States.

I continue to think that inflation expectations are the key variable for this Committee and that we're handling it badly in our policy analysis. This morning, I saw the Conference Board's survey of inflation expectations, which reinforced my ideas that these surveys are way off. The current expectation for inflation is 4½ percent, according to the Conference Board's survey, and that is the lowest level it's been since the recession. So it was cited as evidence that inflation expectations are coming down—that these expectations had come all of the way down to 4½ percent instead of anywhere close to what professional economists would say.

I also think that these term structure models, as was indicated in Thomas's presentation, tend to push a lot of the variation in the data into the term premium, which is really just a noise term. And because of the underlying assumptions, they tend to say that the inflation expectations are never moving, and it's only the noise term that's absorbing all of the variation in the data. I don't think that's helpful for our Committee. I think we want to take signals from the market about what they think about our own credibility and our own policy.

A possible issue ahead is the dot plot, as mentioned by President Rosengren. I have a very different policy recommendation here from that of President Rosengren. I think we should eliminate it entirely. I think that the SEP forecasts of the federal funds rate were very useful when the policy rate was close to zero. It did a good job of helping the Committee send the signal that we were going to be lower for longer. If you remember, right after the recession and in the aftermath, markets continually thought we were going to raise the policy rate just 6 months, 9 months, or 12 months in the future. We had a lot of trouble communicating that we thought it was going to be a much longer time frame than that. By putting the dot plot out, we could show that our expectation was that we would be at the lower bound for a lengthy period. That re-centered the debate to a point of liftoff, which went on for years, and then we finally did lift off.

So I think all of that was successful in having the SEP. It's much less useful now when future policy is much less clear. I see the essential problem with the SEP is that, as we've experienced it, it is creating too much of a focal point for markets. It is treated as a promise by markets. It puts the Committee into a box—"you said you were going to raise the rate at some point in the future"—and then we're being forced to follow through at a time, possibly, when data are not supporting us as much as we would like.

So my proposal would be to eliminate this process and simply allow participants to give their own forecasts, including of policy rates, in speeches and interviews—something that we do already. One advantage of this kind of approach is that people can update their forecasts and their policy rate views more regularly. You're not wedded to this quarterly prescription. I think we could promote this as being more transparent, not less transparent—more agile because you're able to react to data more quickly if you want to. And it would provide less of a fixed focal point for markets where the Committee has made an implicit promise about what it's going to do in the future, which may turn out to be one that the Committee does not want to follow through on when you get to those dates in the future, depending on how the data have come in.

I think this process would better reflect the true uncertainty regarding future policy, which is what we really want to get to. The SEP is communicating too much certainty about future policy. We would like to get to a regime where we can convey that, well, there's a lot of uncertainty, and it's changing as the data are rolling in every day.

On the balance sheet statement, we've already voted on it. My preferred approach, as I said yesterday, is no statement, but I can support the statement that we have this morning. I think the most important thing in the intermeeting period is to begin to test the waters on likely aspects of the March announcement, which is coming and which, I think, is jelling together here. I think there is substantial consensus. Of course, we would say no final decisions have been made, and we would reserve the right to have the March meeting be a live meeting and make final adjustments. But the parameters of the balance sheet program are coming together, and I think it's fine to try to float some of the ideas during the intermeeting period. A lot of these numbers are out there anyway, and a lot of the key ideas are out there anyway.

Finally, on naming a specific date for the end of the balance sheet runoff, the date-contingent policy, I again urge the Committee to maintain optionality. It's possible you would get to the third quarter of this year, and the data are pretty good, reflecting a lot of good things happening in the U.S. economy. We might want to raise the policy rate in response to that, and then are we really going to want to delay the end of the balance sheet runoff in that environment? I'm not sure what we'd really do in that environment. I think it'd be better to just say "in the second half of this year" or "later this year" and then let the Chair pick an appropriate moment to go ahead and end the runoff of the balance sheet.

And then, John Williams, obviously, is not going to go to central bank heaven, as he said today. [Laughter]

VICE CHAIRMAN WILLIAMS. It's "purgatory." [Laughter]

MR. BULLARD. I mean, having worked with him for years, I know he's committed way too many sins to make it there [laughter], but I intend to make it. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Mester.

MS. MESTER. Thank you, Mr. Chair. I support alternative B. My modal outlook is for economic growth and employment growth to slow from their above-trend paces and for underlying inflation to remain near our 2 percent goal. And, to achieve these outcomes, the funds rate will likely have to move up a bit more later this year. There are considerable risks to this outlook, however, and considerable uncertainty regarding this policy rate path. The federal funds rate is now at the bottom of the range of estimates of its longer-run neutral rate. Recent increases are still working themselves through the economy. Balance sheet normalization is continuing. And despite the tightness in labor markets, there's little sign that inflation is on the verge of rising appreciably. This gives us an opportunity to take the time to assess incoming economic and financial information and what it means for the medium-run outlook and risks.

I appreciate the revisions made to alternative B between the first draft and the current draft. The changes made to the forward guidance in paragraph 2 compared with our December statement seem appropriate to me at this time. I think the language strikes the proper balance, indicating not only that we're going to be on hold as we assess economic and financial conditions, but also that further adjustments may still be needed in order to support our dual-mandate goals.

Now, I suspect it may be interpreted as a longer pause than is likely given my forecast, but given there's considerable uncertainty associated with that policy rate projection, I don't see that interpretation as an issue at this point. We will be releasing new projections in March, and I think those projections will be informed by the incoming economic and financial information received between now and then. It's either going to confirm the modal outlook or lead to changes in our anticipated policy rate path because the outlook has changed. Either way, I think our current policy stance and the current statement put us in a good position.

Nonetheless, at times, we have tended to have a "Hotel California" problem with our statement, [laughter] so I think it's good for us to think at this point and ahead of time about how the "patient" language could be changed, depending on how the outlook changes. Presumably, if uncertainty abates, and the outlook suggests that a further increase in the policy rate will be needed, we're going to need to remove that "patient" language from the statement at least a meeting or two before the expected action, and we should be thinking now about what would replace it. On the other hand, if our forecast suggests that we're going to be on hold for the foreseeable future or that the next move may be a decrease rather than an increase, our language is going to need to express this as well. So, again, thinking ahead of time seems like a prudent thing to do. Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. I support alternative B as amended today. I continue to be highly uncertain about the outlook for the U.S. economy, and I must admit, I am glad I don't need to make an updated SEP submission today. In the previous meeting, when we were asked for views, I was one to raise my hand and thought it was a good idea to write an SEP forecast at every meeting—all eight. I must admit, I am not so sure now, and I'm glad to have the time, certainly this year.

The reasons for the uncertainty are the broad categories we've talked about. I won't go through all of them: decelerating global growth, compounded by trade tensions, and weakness in economically sensitive industries such as housing and airlines, and the list is lengthening for me in looking at corporate earnings reports. The January experience suggests that more economically sensitive industries are cautioning about sluggishness.

On financial conditions, while there's been some improvement in the past few weeks, I do believe that if corporate earnings weaken or decelerate, I think there's a reasonable probability, as we get later in the year, we may see financial conditions tighten again. But, of course, time will tell.

The scenario, as I mentioned yesterday, that I'm watching most carefully is one in which sluggish economic conditions plus a lack of business pricing power, lead to margin erosion and profit deceleration and revisions, and that in turn having a chilling effect on cap-ex and, with a lag, ultimately hiring. I combine this with the fact that corporate debt is at relatively high levels by historical standards, and corporate activism—shareholder activism—is at historically high levels, which means corporate executives are going to take action much more quickly than in the past in the face of earnings deterioration.

While expansions—this has been discussed—may not die of old age, I think it does pay to recognize where we are in the economic cycle, and I believe we are relatively late. And the Fed has raised rates now nine times over the past three years or so.

I do believe that, in view of all of these uncertainties, the FOMC should be patient and refrain from taking any action on the federal funds rate until the situation becomes clear. Because the outlook for inflation, as many have said, is likely to remain muted, we have the luxury of being patient. I also think patience maximizes the chance that the economy will stabilize. It gives us the best opportunity to extend this expansion, and, if it turns out that the economy is stronger as the year goes on than I believe is likely to be the case, we'll have the ability to resume raising the federal funds rate later this year. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Barkin.

MR. BARKIN. Thank you, Mr. Chair. I'm comfortable with alternative B. The data remain good, but uncertainty has risen, and the risks have shifted to the downside. The upside case seems less likely, and there's a greater chance than before that something really bad will happen, especially in the political arena, domestically or internationally.

So if there was ever a good time to take the last remnant of forward guidance out of the statement, this is it. In view of the uncertainties in the current domestic and international economic environments—the government shutdown, our lack of data, China negotiations, the yield curve, the timing regarding trade deal approvals, and Brexit—it seems appropriate to take a wait-and-see attitude. A lot could happen in the first quarter.

I hope market expectations haven't overadjusted. I agree that the expected federal funds rate path should now be south of where it was at our previous meeting, but I suspect the 12-month probability of an increase is still north of zero, especially given the most recent hard data.

While I'm okay with its use today, the word "patient" runs the risk of becoming another form of forward guidance, and I would eliminate it as quickly as possible, perhaps when some of these near-term risks dissipate. I hope that'll be soon. We should emphasize that patience reflects data dependency at a time when the environment is particularly unsettled, not as a message that we're necessarily done.

We also risk appearing to overrespond to markets. Changing the language so significantly, including putting out a revised statement of normalization principles, will be dissected endlessly. I know we're actually responding to increased uncertainty, but some might ask, if we had seen the same data and markets had been flat, would we have signaled a change in policy so clearly? We need to tell our story well and tie it compellingly to the increase we all see in uncertainty—or, President Harker, in ambiguity.

CHAIRMAN POWELL. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chairman. I support alternative B. I think we ended up in a good place, as alt-B conveys an appropriate risk-management response to the policy environment we face today. In particular, paragraph 2 does a good job of balancing the still-quite-positive base-case scenario against the uncertainty and downside risks posed by recent global and financial market developments.

When faced with such ambiguity, patience in making policy adjustments is a classic risk-management response that the Committee has chosen many times in the past. This is not an unusual policy strategy for the Fed. Indeed, today's call may be more straightforward than in some previous cases because, even with the unemployment rate at 3.9 percent, inflationary pressures currently are AWOL. I got that term from Vice Chairman Williams. It's kind of appropriate. I think the acknowledgment of softer financial market inflation compensation in paragraph 1 and muted inflation pressures in paragraph 2 were good additions that support this point.

That said, we still have a tricky balancing act ahead of us given the uncertainties we face. I agree with President Daly that paragraph 1 and paragraph 2 display some tensions. At one point, I was going to suggest inserting language in paragraph 2 along the lines that the current economy displays strong fundamentals but has risks to the downside.

It's unclear whether we're entering a period of low short-term r^*, as I talked about yesterday, or if we're simply feeling our way through a more benign deceleration of real GDP growth back to its potential rate, as in our baseline projection. We need to think ahead about how we will determine which scenario we are facing, as well as the appropriate policy response for that scenario. Waiting may turn out to be easy. We could see labor markets stabilizing, in line with output growth decelerating to trend, with the unemployment rate staying in the 3¾ to 4 percent range and inflation remaining near our 2 percent symmetric objective. Such outcomes could suggest that our current policy setting would be adequate for quite some time. I do think that, as President Mester said, we should think about the term "patient" and how we get away from that term at the appropriate time. It will probably be more challenging than many cases.

But what if the data move differently? I first wondered about what kinds of developments would lead us to exit the patient mode and resume rate hikes. One reason would be if inflation compensation moved back toward mid-2000s levels and core PCE inflation rose above 2¼ percent, with further increases likely in store. Such clear emergence of rising inflationary pressures would be a signal that monetary policy was still accommodative.

Another case would be if we saw a few more jobs reports like the one in December and the unemployment rate also moving down to 3½ percent. It would be important to carefully assess the degree to which these developments might reflect structural labor market improvement, as opposed to being a harbinger of inflationary pressures. But it seems likely that, in this case, we would also surmise that our policy stance was still somewhat accommodative.

That's one side of the coin. What about the other side? What might lead us to markedly lower rates? Sadly, this decision might be more straightforward. If the data flow indicated greater economic distress than just our expected deceleration to trend growth, we'd have to act. And while predicting turning points is nearly impossible, once in motion, we all recognize the kinds of recessionary dynamics that would clearly lead us to aggressively provide more accommodation.

Finally, what about conditions that suggest more marginal policy moves? Ironically, decisions about these might be more difficult to settle on. But as long as the outlook has good labor market outcomes with strong consumer fundamentals and inflation in line with our 2 percent symmetric objective, we're looking at a pretty good outcome. I know we will agonize over the policy decisions. That's what we do. But we should be pleased to be in that situation.

In sum, I support alt-B as written. I think taking a pause in the rate cycle is appropriate risk-management policy at this juncture. And I hope, as we move through this period, the more benign scenarios will prevail.

I just want to say, since President Bullard brought it up, on the dot plot, I feel very strongly that the dot plot is good value added. And if we ever think about taking that away, please alert me. I have very strong comments about that. [Laughter.] Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. I support alternative B. We've made substantial progress in the normalization process for monetary policy, and I believe we're currently at a point where we should carefully assess a range of shifting economic forces, including the effects of waning fiscal stimulus and past rate increases in combination with elevated downside risks. With high levels of employment and low inflation, we can afford to be patient and flexible in judging the need for further policy adjustments.

The addition of the word "patient" did give me, like some others, some pause. To me, it's a new form of forward guidance, and it strongly conveys that the Committee is unlikely to make a change in the funds rate in upcoming meetings. That may be appropriate. So while I agree with today's story line that we should characterize our stance as being one of a patient approach, I'm not sure that such a description will be valid in April or June. As President Mester suggested, I think we'll need to begin thinking about what kind of a transition we'd make from that. Thank you.

CHAIRMAN POWELL. Thank you. President Bostic.

MR. BOSTIC. Thank you, Mr. Chair. I support the policy action recommended in alternative B. The economy is close to, if not at, the Committee's target levels, and this tells me that we should let the economy stand on its own without a push from monetary policy. At present, the federal funds rate is currently at the lower end of the range of the long-run rate, as reported in our December Summary of Economic Projections. I think it is prudent to see how the economy responds before making further adjustments. This, to me, is what patience looks like.

There's remarkably broad support across my contacts and directors in the Sixth District for what is proposed here. Perhaps the best evidence of this is the 28–0 vote of my Branch directors in favor of this policy decision. This is the first time anyone at my Bank can remember a unanimous vote on anything. And, as a reminder, our vote last time was 15–14. So it seems we've moved to a pretty sweet spot.

My only comment on the specific language is that I'm not crazy about the use of the phrase "as the most likely outcomes" in paragraph 2. I prefer to use "as likely to persist" instead. I think this better conveys the spirit of what the Committee is trying to communicate, but this is not a major point. Overall, like others, I would ultimately like to see the removal of as much forward guidance as possible. We've been moving in that direction, and I definitely appreciate that and hope it continues. And on this point, I would just say that I agree with Presidents Barkin, George, Mester, and others about the use of the word "patience." It is a form of forward guidance, and I think that we should think about how we get that out as soon as possible. But I do understand why we have it in right now.

Finally, I would like to double down on President Daly's point on repetition in this ambiguous time. I was going to say "uncertain," but President Harker scared me. [Laughter] In this ambiguous time, complete clarity on what we're doing is critical, and repetition, in my view, is the best way to accomplish this. We should be repetitive until it gets boring and until we're mocked. And this will be a sign of success. [Laughter] Thank you, Mr. Chair.

CHAIRMAN POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Chairman Powell. I support alternative B. Currently available economic data have not changed my outlook significantly from the December meeting, and overall, the economy has been performing well, with strength in household and business spending outside of residential real estate activity. We continue to see a strong labor market, with over 312,000 jobs created last month and an increase in the labor force participation rate. Borrowing costs for residential mortgages have declined since the previous meeting, but reports indicate a continued softening in existing residential sales data.

While the national economic numbers provide evidence of a continued strong and growing economy, there are factors that weigh on my assessment, as I noted yesterday: the global economy, trade uncertainty, and agriculture. In addition, as many of us noted yesterday, the outlook for inflation and inflation expectations is not entirely clear. Will the soft inflation data from the second half of last year prove longer lasting, or was it temporary? How should we interpret the decline in inflation compensation in financial markets? These are all challenging questions. And, as I noted during the December meeting, although it's challenging to determine what the new normal and the new neutral rate should be in this post-crisis environment, in my view, the current data indicate, or could indicate, that we're very close to that neutral rate.

At this point, unless we see significant changes in data, it makes sense to be patient and to continue to observe economic conditions and the effect of recent rate increases, although I do agree with others regarding the ongoing use of this term as conditions change and our intentions also change as a result of those data. This is particularly important as we see conflicting signals and mixed data from other sources, like from financial markets and consumer and business sentiment. But being patient at this time could provide us with the opportunity to consider and determine the appropriate pace of future actions as warranted by data available at that time. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chairman. I support alternative B as amended, but there is one aspect that does give me pause. I am always an enthusiastic supporter of providing additional clarity and certainty about our strategy to markets and the public, particularly when uncertainty about our strategy appears to have contributed to turbulence, whatever some may think about the reasonableness of that reaction. I am less enthusiastic in expressly tying the policy rate decision closely to financial developments, at least in these circumstances, as we do now in the new final sentence of paragraph 2 of alternative B.

In the past, references to the effect of financial developments have often been tightly tied to their eventual effect on economic developments and the dual mandate. And in the current statement, that link, though it will probably appear apparent to the casual reader, will, I think, appear a little loose to the close reader. Now, we learned in December that the number of very casual readers of our statement seems to have increased of late [laughter], and I'm not advocating or even suggesting a change in language at this point, but rather making a communication point, about all of us, as we talk about what it is that we've done today and about the language in the statement. Paying due attention to those close readers and their interpretation of what we're saying, I don't think we want to signal a willingness to respond to financial markets beyond their effect on the dual-mandate variables.

I fully support the removal of forward-guidance language. That change has been well telegraphed. It's the best expression of our consensus of the Committee. Not doing it now would likely cause some confusion. That said, I myself retain more of an upward bias to rates rather than being purely neutral. I view my outlook for real GDP growth as being consistent with further rate hikes, although I'm very willing to allow risk-management considerations to determine the timing of those future hikes.

One factor underlying my bias toward further rate hikes is my lack of confidence in inflation as the dispositive indicator of the cyclical state of the economy. As I've discussed before, no doubt to the point of boredom—soon Vice Chairman Williams is going to forbid me to talk not only about airplanes, but also about this point—I believe that confidence in the Fed is an important factor in anchoring inflation near 2 percent. And, as such, one of the major signals inflation is sending is the public's expectation of the Federal Reserve's competence and commitment rather than merely whether the economy is running hot or with excessive slack. If we rely too much on inflation as the sole, or perhaps even the prime, indicator of slack, we run the risk of following our own tire tracks in a blizzard—such as the one that the meteorologists tell us is raging outside [laughter]—into the barrow pit on I-80 in the middle of Wyoming, between Laramie and Rawlins, which is a traumatic experience.

On the SEP, at the risk of appearing impractical, I actually would like to support President Bullard's point, as long as it's been raised. I understand the obstacles to eliminating the dots. It would require the Chairman to don a brown robe and stand up at the press conference and say, "These are not the droids you want." [Laughter] But I think—and I don't think I'm the only person on the Committee who thinks—that the dots painted us into a corner in December, and the Committee took a decision that it would not otherwise have taken, at least as I listened to the discussion around the table, had it not been that, at some time in July, one of us had Wheaties instead of Post Toasties for breakfast and moved the majority from three to four. And that fourth may well have moved back to three by the time of December, for all we know. But markets took that, beginning in July or August—whenever it was—as a commitment that we would act in December on the basis of no one's decision or, really, even any sort of consensus forecast.

I agree with President Bullard that the dots served a very useful purpose when they were introduced and served a useful purpose for a long time. And I worry now that—I mean, I began these comments by saying that I always support providing additional certainty about our strategy—but I think that the dots now provide specious certainty to people who want to read more into them than we want them to mean. But we don't have a way of making them mean only what we intend. So, all of that said, I understand that, given the signal it would send about secrecy and closed rooms, it may be impossible to get rid of them. But I do think that it's an issue for us to wrestle with, as to how do we avoid the dots painting us into corners that we're not even painting?

One final note. I would like to add additional support for the point that a number of people have made in a number of contexts for a preference that interest rates remain our primary tool in the implementation of policy except in extraordinary times. I believe it best that our balance sheet policy continue to operate in the background, with a fairly high hurdle existing for its use as an active policy instrument. Our communication challenges and managing of market expectations is complicated enough without the market having to form views on our mix of the two tools. Thank you, Mr. Chairman.

CHAIRMAN POWELL. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. I support alternative B. In particular, I support the removal from the statement of language about further gradual increases in the federal funds rate. I think that that's a good move. I've been arguing for some time that I think we can afford to be patient. We're essentially at neutral. There appears to still be slack in the labor market. Inflation is well under control—no need to tap the brakes on the economy.

One observation I have is that you're moving to twice as many press conferences, which, unfortunately, means you're going to get twice as much advice from us [laughter] on how you should communicate in press conferences. So apologies from me for piling on.

I think today's move is the right move, but I think it's going to be viewed as a substantial dovish shift relative to December, certainly, but even relative to expectations coming into this meeting. And I think that lends itself to three potential misinterpretations, some of which others have articulated. One is that we're responding to political pressure. I think that's the easiest one to push back on. The second is that we're reacting to the stock market, which I don't think we want to get in the habit of signaling about. And then the third is that this is a dovish move—maybe we see something on the horizon that we're really scared about, and we want to take out insurance ahead of that. For me—and I said this yesterday—I think there's a very positive message that we can articulate about the supply side of the economy and inflation being in check. So I would just humbly suggest focusing on the positive. I think it's the best inoculation against these different misinterpretations.

Finally, let me just add to my "spirit brother," Governor Quarles, and President Bullard. I think the dot plot is long past its prime, and it's doing more harm than good at this point. And I don't think we should be afraid of people saying—they're going to squeal that we're being un-transparent. They're going to squeal when the dots are wrong. They're going to squeal more when the dots are wrong than about our doing away with dots that are not helping us, so I think this is something we should take on and reassess how useful it is. Thank you.

CHAIRMAN POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. While the hard data continue to reassure us that the economy is at our goals, I worry that the protracted shutdown may have brought us closer to a tipping point in sentiment, and the accumulation of many separate downside risks may erode consumer and business confidence and thereby feed into economic activity. Related to that, I'm concerned that a variety of indicators of recession probabilities have moved up.

In light of that, prudent risk management implies we should wait for reassurance that an erosion in sentiment, following this accumulation of downside risk, doesn't derail the considerable progress we've made. Moreover, we have the benefit of being able to watch and wait as the risks of an overheated economy have fallen.

For these reasons, I fully support the removal of forward guidance. And I support pausing while we monitor evolving risks to the outlook. It indicates that we're mindful of the recent financial turbulence and ongoing heightened-risk environment and of the possible adverse consequences of that environment for output and employment. At the same time, it doesn't preclude a return to a funds rate path along the lines of the December SEP later in the year if the economy were to evolve along the lines that were anticipated earlier.

I agree, however, with Governor Quarles on the caution that he raised that we seem to be being patient "in light of global economic and financial developments." Like him, I think I would have preferred to have taken that same language "as we monitor" global economic and financial developments, which is how we've done it traditionally. But I'm comfortable with the language we have. I think it would have been, perhaps, an approach less subject to misinterpretation.

Together, I think the changes in forward guidance and balance sheet communications are significant. It would be prudent to see what effects those changes have and how the outlook evolves. Of course, if the model-based recession probabilities were to mount further or if weakness began to be evident in hard data, such as claims and payrolls, we should be prepared to take out some insurance by acting preemptively. For today, watchful waiting in the context of prudent risk management is appropriate. So far, the available hard data, including the upside surprise in today's ADP payrolls print, are providing no indication the economy is downshifting faster than the softer-but-still-above-trend pace anticipated in the SEP.

With regard to the points that have been raised in this discussion, I had the same question as Presidents Mester, Evans, George, Barkin, and Bostic—I think I have the full list—as to how today's language will evolve in the future. Instead of alt-A and alt-B—which ask the question

"How would you frame it differently today?"—I think I would find it more useful, as we make language changes, to see how that language might evolve in future scenarios, whether they be stronger or weaker than we currently anticipate.

Also, like Presidents Rosengren and Evans—or at least like President Rosengren—I think it would be very valuable to increase the frequency of the SEP to correspond to the increased frequency of press conferences. I think this will actually solve the problem Governor Quarles raised by helping provide a higher-frequency sense of how that median outlook is evolving to take into account higher-frequency developments. It seems particularly valuable at turning points. I know my own SEP today would show substantial change relative to December. And like President Evans, I think it is a very valuable mechanism, certainly for holding each of us accountable and keeping us internally consistent or honest, as these forecasts will be part of the record. I also do think it's a very valuable communications mechanism. I think market participants know how to interpret it now.

Finally, with regard to the balance sheet, I support very much the proposed changes to the normalization principles, including the two-step approach of talking about the framework today and talking about a stopping point for balance sheet runoff at a future meeting, potentially in March. As we move to announcing that decision, however, I do think communications are going to be exceptionally important. We need to be crystal clear that the goal of announcing a stopping point is to provide greater clarity and certainty about our plans, and that this does not in any way represent a change in our monetary policy approach through more active use of the balance sheet. So I support alternative B. Thank you.

CHAIRMAN POWELL. Thank you. Vice Chair Williams.

VICE CHAIRMAN WILLIAMS. Thank you, Mr. Chairman. I support alternative B with the "solid" amendment to the first sentence.

Since our December meeting, our attempt to slow-walk the move away from forward guidance to a more purely data-dependent approach has been overtaken by events. As I mentioned yesterday, concerns about global economic and financial developments that we highlighted in our policy statement in December have been borne out. So I am going to react, a little bit, to Governor Quarles and others.

The analysis that I talked about from the New York Fed staff, that used various models, the analysis that I think Steve showed from the 2016 episode, and the analysis from the Board staff, show that the big delta in the economic forecast is the change in financial conditions. Sure, the slowdown in global growth does have an effect, in terms of our view of U.S. economic growth. But at least in the analysis I've seen—and I've looked at a lot of different models—the big "delta" here is that financial conditions have tightened since September. The spreads have widened, the stock market is down, and I think that not including that as one of the factors that has shifted our view of where the economy is going, would be misleading.

I also like the parallel structure between our December statement, where we said we're monitoring global economic and financial developments. That was something clearly on our radar. We've now seen those show that they've persisted in many ways, and that's affected our thinking about the outlook.

I do understand the desire to always tie things to our economic outlook and our dual objective. I do think the set-up of paragraph 2 does emphasize our dual-mandate objectives. It emphasizes our basically positive view of the outlook but highlights, I think, the key factors that are giving us the ability, as President Kashkari highlighted—and I completely agree with this—

this fact that inflation is low, and the fact that we're in this situation, gives us room to hold off in raising interest rates at this time. In addition, as so eloquently put by President Evans, inflationary pressures are simply AWOL. [Laughter.]

I do see three possible scenarios for 2019, and I'm sure that we can get together—President Harker and I and anyone else—and have a great debate about Knightian versus Bayesian uncertainty. We've had those many times in the past at this table. Some of the non-economists have not enjoyed it as much as we have [laughter], but we'd be happy to do that again. But I do see three possible scenarios for growth for this year. The first is the economy being kind of a replay of 2018—growth well above potential, the labor market strengthening, and inflation moving, perhaps persistently, well above our target. Now, this is a very positive scenario, and that would call for a modest policy tightening later this year.

The second scenario is growth close to potential, with inflation running near our target. In this scenario, which is my modal forecast today, the current range for the policy rate would continue to be appropriate.

Now, the third scenario, which I think President Evans and others have mentioned, is that we have reached, or are soon reaching, a turning point, followed by a significant deterioration in the outlook for growth and inflation. In that scenario, we need to adjust the stance of monetary policy as needed, depending on the nature and timing of the adverse developments that we're facing.

At this time, it's unclear which scenario will ultimately play out. Geopolitical uncertainty may recede, data may confirm the strong momentum in the U.S. economy, and, indeed, we may find ourselves in scenario number 1. But there is a significant probability of the other two scenarios occurring, and this assessment overturns any conviction that we are highly likely to be continuing on an upward trajectory for the funds rate this year. And I think the policy statement captures that shift.

We are indeed, as many have said, in a wait-and-see mode for now. I think the language in alternative B appropriately emphasizes not only that our baseline outlook is positive, but also, importantly, that we're in a data-dependent and flexible approach to policy .

I agree—and Governor Brainard listed them all in the list that she made, including herself—about the need to think ahead to where we go after "patient." I think that's something that we do need to be thinking through. I think this has a little bit of a shelf life, but not a lot. So I agree with thinking about what "good" looks like as we go forward.

Okay. Back in the day, when I sat next to President Evans, our job was to keep ourselves calm and reasonable and not jump out of our seats when we hear something that we disagree with. But these two colleagues of mine are not doing that, so I will just very briefly opine. I strongly, strongly support continuing the SEP the way it's done now. I strongly support the dot plot. Maybe we can improve it. Maybe there are ways that we can highlight the uncertainties in things or the ambiguity in that. I know this is not a debate for today, but I personally never felt having my hands tied by what I said in the past in terms of the dots. [Laughter] I do think we've just proven again, as a group, that we can change our minds in response to changing information. We did it in 2016, which the Chairman highlighted in his press conference after the previous meeting. And I think that the dot plot represents a view of participants in the Committee. I think it's a positive thing that we can change our mind, and change our perspective, as the data change. And, again, I don't think it does tie our hands in any way. I think we've shown, even in the past month or so, the ability to not only change our minds as the situation changes, but also convey that in communications so that we're not surprising markets. Anyway, I know that's not the topic of discussion today, but I wanted just to express that. Thank you, Mr. Chairman. I support alternative B.

CHAIRMAN POWELL. Thank you. We had a two-hander by President Harker.

MR. HARKER. Just one suggestion for consideration, I think, for the Committee. It's actually an idea that President Bullard brought up a while ago: Keep the dot plot, but instead of doing it as an annual, do it at 4 quarters, 8 quarters, and 12 quarters ahead. That would avoid boxing us in in terms of a particular year, because that's the problem—we're doing it by calendar year instead of by 4 quarters, 8 quarters, and 12 quarters. So that would get us out of that problem but would retain some of the benefits.

CHAIRMAN POWELL. All right. Thank you. That's a great idea. I think this is something that can be considered at the subcommittee.

So, regarding thestatement language, there were a couple of suggestions. I sense no bandwagon jumping on them, so I think we're just voting on the basic alternative B statement language. And I'll ask Jim to clarify what we'll vote on and then to read the roll.

MR. CLOUSE. Thank you, Mr. Chairman. The vote will be on the monetary policy statement as it appears on page 4 of Thomas's briefing materials, with the amendment that the end of the first sentence will say "economic activity has been rising at a solid rate." And the vote will also encompass the directive to the Desk as it appears in the implementation note on pages 6 and 7 of Thomas's briefing materials.

Chairman Powell	Yes
Vice Chairman Williams	Yes
Governor Bowman	Yes
Governor Brainard	Yes
President Bullard	Yes
Governor Clarida	Yes
President Evans	Yes
President George	Yes

Governor Quarles	Yes
President Rosengren	Yes

CHAIRMAN POWELL. Thanks. Now we have two sets of related matters under the Board's jurisdiction: corresponding interest rates on reserves and discount rates. May I have a motion from a Board member to take the proposed action with respect to the interest rates on reserves as set forth in the first paragraph on the last page of Thomas's briefing materials?

MR. CLARIDA. So moved.

CHAIRMAN POWELL. May I have a second?

MS. BRAINARD. Second.

CHAIRMAN POWELL. Without objection. Thank you. Now may I have a motion from a Board member to take the proposed actions with respect to the primary credit rate and the rates for secondary and seasonal credit as set forth in the second paragraph on the last page of Thomas's briefing materials?

MR. CLARIDA. So moved.

CHAIRMAN POWELL. May I have a second?

MS. BRAINARD. Second.

CHAIRMAN POWELL. Without objection. Now, before we confirm the date of our next meeting, I'd like to turn the floor over to Governor Clarida, who has a few comments on the status of the process we've begun to gather input from the public on the Committee's strategic framework for monetary policy.

MR. CLARIDA. Thank you, Mr. Chair. I'll be brief. As part of our 2019 framework review, we plan to devote several FOMC meetings in the second half of 2019 to discuss and assess ways in which we might refine our strategy and communication and update our toolkit to best equip us to reach our dual-mandate objectives. To that end, I've asked Thomas Laubach to reach out to your research directors to begin to organize and coordinate the staff work that will provide the background for our FOMC meetings on these topics. This is a process that we have used in the past, and your research directors will be hearing from Thomas soon. Thank you.

CHAIRMAN POWELL. Thank you, Governor Clarida. Our final agenda item is to confirm that our next meeting will be Tuesday and Wednesday, March 19 and 20, 2019. That concludes this meeting. Thanks, everyone. And a buffet—I'll call it brunch—is now available in the anteroom. Thanks very much.

END OF MEETING