Meeting of the Federal Open Market Committee
July 30–31, 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, July 30, 2019, at 10:00 a.m. and continued on Wednesday, July 31, 2019, at 9:00 a.m.

PRESENT:
Jerome H. Powell, Chair
John C. Williams, Vice Chair
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

Rochelle M. Edge, Beverly Hirtle, Christopher J. Waller, William Wascher, and Beth Anne Wilson, Associate Economists

Lorie K. Logan, Manager pro tem, System Open Market Account

Ann E. Misback,[1] Secretary, Office of the Secretary, Board of Governors

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[1] Attended through the discussion of economic developments and outlook.

Eric Belsky,[2] Director, Division of Consumer and Community Affairs, Board of Governors; Matthew J. Eichner,[3] Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors; Andreas Lehnert, Director, Division of Financial Stability, Board of Governors

Margie Shanks,[4] Deputy Secretary, Office of the Secretary, Board of Governors

Arthur Lindo, Deputy Director, Division of Supervision and Regulation, Board of Governors; Trevor A. Reeve, Deputy Director, Division of Monetary Affairs, Board of Governors

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

Joshua Gallin, Special Adviser to the Chair, Office of Board Members, Board of Governors

Brian M. Doyle,[5] Wendy E. Dunn, 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

Shaghil Ahmed, 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

Don Kim, Edward Nelson, and Robert J. Tetlow, Senior Advisers, Division of Monetary Affairs, Board of Governors; S. Wayne Passmore, Senior Adviser, Division of Research and Statistics, Board of Governors

Marnie Gillis DeBoer and Min Wei, Associate Directors, Division of Monetary Affairs, Board of Governors; Elizabeth Klee, Associate Director, Division of Financial Stability, Board of Governors; John J. Stevens, Associate Director, Division of Research and Statistics, Board of Governors

Norman J. Morin, Deputy Associate Director, Division of Research and Statistics, Board of Governors; Andrea Raffo, Deputy Associate Director, Division of International Finance, Board of Governors; Jeffrey D. Walker,[3] Deputy Associate Director, Division of Reserve Bank Operations and Payment Systems, Board of Governors

Etienne Gagnon, Section Chief, Division of Monetary Affairs, Board of Governors

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

[2] Attended the discussion of the review of monetary policy framework.
[3] Attended through the discussion of developments in financial markets and open market operations.
[4] Attended the discussion of economic developments and outlook through discussion of monetary policy.
[5] Attended Tuesday session only.

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

Alyssa G. Anderson, Principal Economist, Division of Monetary Affairs, Board of Governors; Dario Caldara[2] and Albert Queralto,[2] Principal Economists, Division of International Finance, Board of Governors

Isabel Cairó,[2] Senior Economist, Division of Research and Statistics, Board of Governors

Randall A. Williams, Senior Information Manager, Division of Monetary Affairs, Board of Governors

Ellen J. Bromagen, First Vice President, Federal Reserve Bank of Chicago

David Altig, Michael Dotsey, and Jeffrey Fuhrer, Executive Vice Presidents, Federal Reserve Banks of Atlanta, Philadelphia, and Boston, respectively

Marc Giannoni,[2] Spencer Krane, and Paula Tkac,[2] Senior Vice Presidents, Federal Reserve Banks of Dallas, Chicago, and Atlanta, respectively

Robert G. Valletta, Group Vice President, Federal Reserve Bank of San Francisco

Terry Fitzgerald, Christopher J. Neely,[2] and Patricia Zobel, Vice Presidents, Federal Reserve Banks of Minneapolis, St. Louis, and New York, respectively

Andreas L. Hornstein, Senior Advisor, Federal Reserve Bank of Richmond

Karel Mertens, Senior Economic Policy Advisor, Federal Reserve Bank of Dallas

Joseph G. Haubrich, Senior Economic and Policy Advisor, Federal Reserve Bank of Cleveland

Brent Bundick, Research and Policy Advisor, Federal Reserve Bank of Kansas City

Vasco Curdia,[2] Research Advisor, Federal Reserve Bank of San Francisco

Transcript of the Federal Open Market Committee Meeting on July 30–31, 2019

July 30 Session

CHAIR POWELL. Good morning, everyone.

PARTICIPANTS. Good morning.

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

MR. CLARIDA. So moved.

CHAIR POWELL. Without objection. Our first agenda item is the initial installment on our strategic review of the monetary policy framework.

Before we jump into this, let me say that I am very pleased—even excited—that the review has now reached this phase of deliberations within the Committee. I think the very fact of the review and the design of the review have been very well received by the constituencies we serve, by our elected oversight committees, and by the central banking community around the world. Many others are considering following our lead on this. I think the conception and the execution so far have been flawless. The *Fed Listens* events have really worked, and the branding is just exceptional.

And now these issues come before the Committee, so I very much look forward to this phase of the process. I think it has already been a big gain for process transparency and accountability, and I am hopeful that the substantive considerations and decisions and communications that come out of the review will also put us in a better place relative to our mandate and those we serve. And, with that, let's get started with the staff briefings from Marc, Etienne, and Vasco. Marc, would you like to begin?

MR. GIANNONI.[1] Thank you, Mr. Chairman. I'll be referring to the handout labeled "Material for Briefing on Review of Monetary Policy Framework." Today's discussion begins your internal deliberation of the Fed's monetary policy framework—that is, the goals, tools, strategies, and communication employed by the FOMC to achieve its congressionally mandated goals. Before giving the floor to Etienne Gagnon and Vasco Curdia for their summaries of the two staff memos that we sent you, I would like to highlight a few general issues regarding the staff's work in support of your review and provide a brief roadmap.

Because the current framework has evolved significantly in recent years, it may be helpful to define what lies within the current framework and what options might lie outside it. During this review, we will use a working definition of the current framework that is summarized on the first slide. According to this definition, the framework includes everything articulated in the Statement on Longer-Run Goals and Monetary Policy Strategy as well as the use of tools that have already been employed by the Committee—namely, conventional interest rate policy, forward guidance, and balance sheet policies. In addition, we interpret the consensus statement as implying a let "bygones be bygones" approach, in which the history of inflation does not affect the current setting of monetary policy. In our reading of history, the Committee to date has not communicated or acted as if a commitment to offsetting past inflation misses was part of its framework. We recognize that the Committee hasn't agreed on this definition of its current framework. But, for clarity of the work that the staff will be presenting at this and coming meetings, we thought that we had to pick a definition.

The key features of the consensus statement are summarized in slide 2. That document reiterates the elements of the dual mandate, specifies an explicit numerical inflation objective, and provides a corresponding numerical estimate related to the employment leg of the mandate. It also emphasizes the Committee's concern about deviations of inflation on either side of the target value and articulates the balanced approach in addressing deviations of employment and inflation from their goals. In addition, it acknowledges the importance of the balance of risks, including risks to the financial system.

As noted in the bottom of slide 2, the consensus statement does not mention how the framework operates in the vicinity of the effective lower bound, nor whether anchored inflation expectations are necessary conditions for price stability, and it does not endorse a strategy that would aim for 2 percent inflation, on average, or "over the cycle." These aspects of the consensus statement will presumably be at the heart of your discussions in coming months.

A number of ongoing developments in macroeconomic structure have arguably stressed the current framework and raise the question of whether the current framework will serve the Committee well in addressing future downturns. These environmental features, which are summarized in slide 3, include a low and uncertain

[1] The materials used by Messrs. Giannoni, Gagnon, and Curdia are appended to this transcript (appendix 1).

neutral real rate of interest, or r*—which likely implies a higher likelihood of hitting the effective lower bound; persistently lower realized inflation that may lead to a slippage of long-run expectations below 2 percent—which may, in turn, slow the return of inflation to target; and changes in the inflation process due, for instance, to changing and eternally uncertain natural rate of unemployment or u*, a decline in the responsiveness of inflation to real activity, or other factors leading to persistently lower inflation.

In support of your discussions over the next several meetings, staff memos will entertain two types of alterations to policy, as shown in slide 4. The first is to use your tools differently, but still within the guardrails implied by the current framework, benefiting from what you have learned about the efficacy of these tools and the costs associated with using them. The second set of alterations would entail a change in the framework. During the course of this framework review, the staff work will explore strategies that take the 2 percent inflation goal as given but, in some circumstances, intentionally move inflation away from the 2 percent goal—a key feature of "makeup" policies.

Slide 5 summarizes the areas that the staff memos will explore. The first memo, which Etienne will summarize, is designed to draw the lessons from the post–Great Recession period about the efficacy and costs arising from use of your tools as well as discussing whether the current framework imposes any limitations on the use of these tools. The second memo, summarized by Vasco, focuses on the policy challenges and tradeoffs posed by the structural changes noted earlier. The next set of memos, to be presented in September, will introduce two fundamental questions. First: As we look forward, in light of the challenging structural changes already noted, is the current framework likely to be effective in confronting the challenges of making sustained progress toward the 2 percent inflation goal and responding to potential ELB episodes? Second, how do some widely discussed alternatives to the current framework work, and how might they help overcome these structural and environmental changes? Throughout the memos, robustness to alternative assumptions about economic behavior is a major theme.

Beyond September, the staff currently plan to present an analysis of the distributional consequences of monetary policy, a theme that has emerged as a focal point in the *Fed Listens* efforts. Following the discussion of strategies, the staff will also prepare memos considering ways to evolve the use of its tools in a future downturn, including the choice between date-based and state-based forward guidance, the use of negative interest rates, as well as alternative approaches to balance sheet policies, focusing especially on quantity-target versus rate-target balance sheet policies. The essential point with respect to the later memos is that it is the intention of the steering group to confer with the Committee throughout the process to ensure that the material put before you is on point with respect to the questions and issues that you deem most relevant. I will now hand it off to Etienne.

MR. GAGNON. Thanks, Marc. The decade since the financial crisis has been a period of dramatic changes in the conduct of monetary policy, here and abroad, in response to unprecedented challenges. As you begin your deliberations about the monetary policy framework, it seems natural to ask what lessons the experience of the past decade may hold that are relevant in potentially revising your framework. The two memos that Vasco and I will summarize are, in different ways, directed at this goal.

The materials for the memo “Monetary Policy and Economic Performance since the Financial Crisis” start on slide 6. The memo first reviews macroeconomic outcomes from the crisis onward, a period that saw significant deviations from mandated goals. Starting with maximum employment, slide 6 shows that the crisis boosted the unemployment rate (the black line) to 10 percent, well above the range of estimates of its longer-run normal level in the SEP at the time (the blue area). Despite impaired policy transmission channels, the unemployment rate fell more rapidly than following the recessions of the early 1990s and 2000s, though not as rapidly as during the 1980s. Regarding price stability, slide 7 shows that headline and core PCE inflation sank during the crisis. Inflation has run modestly below 2 percent for most of the time since the FOMC formalized 2 percent as its longer-run goal in 2012, even as the unemployment rate has fallen to a near 50-year low.

One concern is that repeated undershooting of the inflation goal could erode households’ and businesses’ longer-run inflation expectations. Slide 8 shows that some measures, such as TIPS compensation (the black line) and median Michigan expectations (the red line), have weakened in recent years. Other measures, such as the median PCE inflation estimate in the SPF (the blue line), remain near pre-crisis levels. Whether longer-run inflation expectations are consistent, on balance, with sustained achievement of the 2 percent goal is debatable. We have seen in other economies that slippage of longer-term inflation expectations can reduce already limited policy space even further and severely constrain central banks’ ability to provide necessary accommodation.

Several aspects of the U.S. economic performance surprised policymakers and market participants. Most expected stronger economic activity and a faster return of inflation to 2 percent than was realized. Most also underestimated the speed and extent of the fall in unemployment. And, as slide 9 shows, policymakers and market participants repeatedly postponed the expected date of liftoff from the ELB. Our memo traces these surprises in part to the structural transformations that Marc described and that Vasco will discuss further, which were difficult to discern in real time and whose evolution remains uncertain.

As Marc also noted, the policy framework also changed this past decade. Notably, the Committee deployed balance sheet policies and forward guidance on unprecedented scales and with limited knowledge of their benefits and costs. A majority of observers view these tools as having eased financial conditions, supported employment and inflation, and made up for some, though not all, of the shortfall in policy accommodation that would otherwise have been brought about by the ELB. Some had expressed fears that asset purchases would trigger an inflation outburst, induce excessive risk-taking, or disrupt market functioning. These worries did not become reality.

We believe that the FOMC could have pursued even more accommodative policies at the ELB under the current framework, had it deemed it appropriate. Before 2015, slack was abundant and most participants saw inflation below 2 percent over the medium term under appropriate policy. In this context, more forceful policies need not have led to an overshoot of the inflation goal and thus could have been consistent with the current framework. Model simulations suggest that greater policy accommodation early in the recovery would have been beneficial.

In particular, the foreign experience suggests that the Federal Reserve could have conducted even larger asset purchases. As slide 10 shows, the Federal Reserve boosted its balance sheet less, as a fraction of GDP, than did the ECB, the Bank of England, and especially the Bank of Japan. That said, because the short-run Phillips curve is flat, the FOMC would have needed to expand the balance sheet considerably to raise inflation even modestly, possibly complicating the eventual reduction of the balance sheet. In addition, some evidence suggests that, though beneficial, the macroeconomic effects of LSAPs abroad may have been smaller for more recent than earlier programs.

With respect to forward guidance, we note that the Committee made only moderate use of this tool for most of the period. Consequently, we see the FOMC's ability to use forward guidance to engineer a substantial easing of financial conditions as largely untested.

Slide 11 summarizes our memo's mixed conclusions about economic performance and monetary policy under the current framework. To some extent, the outcomes of the past decade reflect the challenges of conducting monetary policy in a changing economy using untested tools, rather than the shortcomings of the framework. We have learned that the Committee had space to do more. And so it could act more forcefully in the future, even under the current framework. A key concern is that inflation has run modestly below 2 percent for many years, and that some measures of longer-run inflation expectations are low. Thus, an important unresolved issue facing the Committee is whether it can, under the current framework, keep these expectations anchored at levels consistent with achievement of its symmetric inflation goal. Vasco will now continue our briefing.

MR. CURDIA. Thank you, Etienne. My presentation materials start on slide 12. Key features of the economy have recently changed in ways that make the conduct of monetary policy more challenging, as Marc had mentioned. First, both the natural rate of interest, or r^*, and the natural rate of unemployment, or u^*, were revised down in recent years, and substantial uncertainty remains about their values. Second, the response of inflation to economic slack appears to have fallen in recent times—that is, the short-run Phillips curve has flattened. Third, there is now a higher probability of hitting the effective lower bound during a downturn, due to the low level of r^*. Fourth, in the wake of a prolonged period of below-target inflation, there are concerns about the stability of longer-run inflation expectations, which could make it difficult for the Committee to achieve its 2 percent inflation goal on a consistent basis. This memo discusses how these factors change the tradeoffs that the Committee faces in pursuing the dual mandate within the current framework. In our discussion, we use a simple but illustrative empirical model of the economy.

Let me start with *r** in slide 13. Lower estimates of *r** imply, other things being equal, lower interest rates, a more limited conventional policy space, and potentially worse economic outcomes. This is true even when policymakers correctly estimate *r**. This exhibit illustrates how uncertainty about *r** and proximity to the ELB produce asymmetric risks—which may prompt policymakers to err on the side of assuming a lower *r**.

In this scenario, we go back in time and assume that *r** is 75 basis points lower than the estimated historical path starting in 2016. Private-sector actors correctly perceive the drop, but policymakers may not. We show optimal control simulations under discretion for three cases. In black, policymakers perfectly perceive the lower *r**. In blue, policymakers perceive a higher *r** than its actual value, failing to identify the drop. In red, policymakers perceive a lower *r** than its actual value, overestimating the drop.

Let's focus first on the real interest rate, shown on the top-right panel. Compared with the perfect certainty case, overestimating *r**, in blue, leads to a higher real interest rate, hence policy is tighter, leading to higher unemployment and lower inflation. In response to the weaker economic conditions, the nominal federal funds rate is kept at the ELB for a protracted period of time. This further constrains monetary policy and exacerbates economic weakness.

In contrast, when policymakers perceive a lower *r** than its actual value, in red, inflation no longer undershoots the 2 percent goal, while unemployment remains further below its natural rate. As a consequence, the federal funds rate has a steeper path. Recognizing the asymmetry in risks is particularly important when a prolonged period of below-target inflation could lead to longer-run inflation expectations drifting lower. We turn to that scenario next.

In slide 14, we show how a flatter Phillips curve and inflation expectations that adjust sluggishly to policy actions pose a challenge for policymakers. The exhibit shows optimal control simulations for the period post-2019:Q1 without any further economic shocks for three different cases: in black, baseline rational expectations with the estimated Phillips curve, which is relatively flat; in blue, inflation expectations are instead adaptive, which means essentially more tied to recent inflation readings than to the 2 percent long-run goal; in red, inflation expectations are again adaptive, but the Phillips curve is steeper.

Baseline assumptions imply a gradual normalization of inflation and unemployment because of the flatter Phillips curve. When instead expectations are adaptive, in blue, the inflation process is even more sluggish and attainment of the

2 percent goal is more difficult. In particular, it requires a more forceful easing stance to keep inflation from slipping too low and avoid a self-reinforcing low inflation cycle in which observed and expected inflation pull each other down. As a result, unemployment substantially undershoots its natural rate.

If, instead, the Phillips curve were steeper, then even under adaptive expectations, achieving the 2 percent inflation goal would not be as problematic, requiring less unemployment undershooting. The next slide summarizes the main findings of the memo. The first two items correspond to the previous analyses. The other three are discussed in detail in the memo.

But let me highlight a few things. First, I will highlight the uncertainty about u^* as being pervasive, making the determination of appropriate policy difficult. When, in addition, the Phillips curve is flatter, inference about the current level of u^* is made even more difficult. This is because movements of the unemployment rate above and below its natural rate are reflected only modestly in changes in inflation. Second, in a downturn, the limited policy space due to the ELB combined with a flatter Phillips curve may require a prolonged period of near-zero interest rates. Third, despite arguments for easier policy near the ELB, periods of prolonged low interest rates could foster the buildup of financial vulnerabilities. This consideration may warrant moderation in the usage of low rates for long periods. But it is important to note how limited our understanding is of the linkage between low rates and financial instability, and of the effectiveness of raising interest rates to reduce the probability of financial instability.

My last slide concludes with some implications of the analysis for potential revisions to the consensus statement. In slide 16, the statement acknowledges some of the tradeoffs discussed here, and it is still early in the framework review for specifics. However, our analysis suggests that a number of considerations that became important in recent times are not fully reflected in the Statement. First, it could recognize that policy tradeoffs may be affected by the proximity to the ELB. Second, it could mention risk-management considerations in the vicinity of the ELB—namely, asymmetric risks due to uncertainty regarding r^* and u^* and the possibility of buildup of financial imbalances during prolonged periods of low interest rates, which might otherwise be desirable. This concludes our prepared remarks. We would be happy to take any questions.

CHAIR POWELL. Thank you very much. Are there any questions for Marc, Etienne, and Vasco? President Rosengren.

MR. ROSENGREN. So the last couple of slides have your caveat on financial stability. But just looking at your slide 13, "Misperceived r^* Entails Asymmetric Costs," alone—it seems to imply that the asymmetric costs ignore financial stability in this slide. But you address it as a caveat in the last two slides.

MR. CURDIA. Yes.

MR. ROSENGREN. If you thought that "reach for yield" behavior actually did have consequences, would you make this slide less certain?

MR. CURDIA. Well, there's definitely uncertainty associated with any of these lines that you see here to start with, even aside from financial instability. When you consider financial instability issues, on the one hand, you're weakening the financial sector that could further weaken the economy down the road. On the other hand, you're trying to prevent that buildup of financial instability from piling up. That is something that is very hard to do. In this model, it's too simple to address that properly—that's why we didn't even attempt to do so. We would leave that for further research.

Actually, on one hand, if you look at the recent conferences about "leaning against the wind" and so on, researchers still have the take that the costs of trying to lean against the wind, or to adjust monetary policy for financial-stability purposes are greater than just mopping up after financial instabilities are realized. On the other hand, there's more and more evidence of this "reaching for yield," and so there's a lot of research effort going toward that direction to try to see if the assessment holds up that it's still best to wait until something happens than to try to prevent it from happening. But it's still early to give you exact simulation results on that.

MR. ROSENGREN. Just one quick follow-up. One way to think about financial stability is, you want sustainable maximum unemployment and sustainable inflation, and so it implies not just getting there in the near term, but getting there through time. Do you think the current framework captures that sustainability concept appropriately? One way to think about financial stability is that sustainability over time.

MR. CURDIA. Well, in the current framework, it's feasible to capture that sustainability concept appropriately. There are evolving challenges that I tried to express, and the memo goes further—definitely, the effect that inflation expectations, for example, may be drifting down currently, but at some point it will be up as well. That will be a challenge for the sustainable part.

Regarding unemployment, of course, the issue is that it's often hard to measure what's the end game in terms of what's really the rate of unemployment consistent with the mandate.

I see financial instability as being something that will interfere with the dynamics and our ability to achieve our dual mandate, because if, on the one hand, you're trying to ease policy to recover from weak economic conditions but, at the same time, you're compromising a financial sector that may, down the road, bring us back to weak economic conditions, it's definitely a concern and a challenge to accomplish the dual mandate in a sustainable way. Again, it's not just me, but many people feel that we have to do a whole lot more research on that.

CHAIR POWELL. President Evans.

MR. EVANS. Thank you, Mr. Chair. The last comment, along with reading the slide on the financial stability risks and the implications for the conduct of monetary policy, is something that I think is very important. And I guess I'm not quite sure exactly what the intention of the steering group is to cover that topic in future memos. It occurred to me, when you talked about the interaction of financial stability and monetary policy lightly in the memo and in your briefing, this would interact with whether or not the Board has chosen to increase the countercyclical capital buffer. If presented with the possibility that maybe we had to take the funds rate on a different path because of financial stability risk but the countercyclical capital buffer hadn't been activated, that would make me wonder about a whole host of things. And that interaction strikes me as an important topic. I think you're looking for suggestions on what we need to be talking about through the framework, and I guess this is sort of where I would throw that in there. Thank you.

CHAIR POWELL. Thomas.

MR. LAUBACH. If I can quickly weigh in here, since you raised the question to the steering committee. So, clearly, in the memo that Vasco is covering, we tried to get at this issue of financial stability considerations affecting tradeoffs that the Committee is confronting. As he also pointed out, there's a great deal of uncertainty, arguably, in our understanding of possibly even the sign of the interest rate tool with regard to financial stability. And so we are open to hearing suggestions. But the key thing that we wanted to do here was simply to say: This tradeoff has been in the mix. The memo does give it some coverage in terms of, in particular, underlining what little we know about this relationship.

CHAIR POWELL. Okay, thanks very much. If there are no further questions, before the go-round, I would like to turn it over to Governor Clarida for some introductory comments.

MR. CLARIDA. Well, thank you, Chair Powell. And thank you to the staff for the excellent memos and especially to the steering committee for providing leadership in this process. As the Chair mentioned, the day has arrived when our 2019 framework review begins the transition from the *"Fed Listens"* phase to the "FOMC deliberates" phase. Of course, there are several more *Fed Listens* events scheduled in the fall, and I'm sure we will continue to benefit from the feedback, perspectives, and goodwill that we have gleaned from the *Fed Listens* enterprise.

But the time has come for us as a Committee to begin to assess what we've learned with the benefit of rigorous economic analysis that will be presented in a number of staff briefings and memos starting today that we've just heard and then obviously continuing in FOMC meetings in the fall. As Marc stated in laying out the roadmap, for the purposes of focusing on the main issues, we think of the framework as really being composed of three pillars: the Statement of Longer-Run Goals and Monetary Policy Strategy; the existing toolkit that we deploy now or have deployed; and, in essence, a bygones-are-bygones approach in which our inflation objective is to reach a 2 percent rate of inflation and then keep it there.

Now, as a practical matter, as many of you know, but just to remind us, our current framework shares much in common with flexible inflation-targeting strategies that many other central banks have adopted over the past 25 years. However, I think it is important to note, and one thing I've come to appreciate in this process, is that our mandate is much more explicit about the role of employment than that of most other inflation-targeting central banks. And, obviously, our consensus statement plays this up very explicitly by stating that when the two sides are in conflict, neither one takes precedence over the other. I think the case can be made that the balanced approach did and has served the Committee well, especially in the aftermath of the Global Financial Crisis when high unemployment called for an unconventional policy mix that, ex ante, entailed some risk of inflation. *Ex post*, it didn't materialize, but, *ex ante*, the minutes and transcripts indicate that it was a concern.

It's also worth noting that among inflation-targeting central banks, there are different practices and approaches to defining the inflation target. For example, some, like us here, and those of Japan, Norway, and the United Kingdom define their target as a point. Some define the target as a range around that objective—for example, Canada, New Zealand, and Sweden. And at least one prominent central bank currently defines its target as a ceiling—that's the European Central Bank (ECB), although that process is undergoing its own framework review. Several other central banks define a horizon, such as over the medium term or on average over time, over which the target is to be achieved. Australia and Switzerland are now in that category.

Again, as I said, I should note that the ECB announced just last week that they are undergoing a rethinking of how they define their objective. They introduced the symmetric concept recently, and they may even go further.

While there's no one way to do inflation targeting, what all inflation-targeting central banks do have in common is, they all respect a bygones-are-bygones approach that does not contemplate, communicate, guide, or try to achieve a future deliberate over- or undershoot of the inflation target in response to past misses. And, in future FOMC meetings, we will be briefed by the staff on several alternatives to inflation targeting that have been proposed by respected academics and former and current policymakers. Lars Svensson at the Chicago conference provided an insightful 30,000-foot review of a number of these strategies, and the System staff will do a "deeper dive" on these in the fall.

Now, as I think we appreciate, but just to remind ourselves, I think there's a reason why no central bank in the world has gone down this road, because the benefits of makeup strategies rest heavily on households and firms believing in advance that the makeup will be delivered when the time comes. And, as is well known from economic research, makeup strategies in general are not time consistent, which simply means that if you go through a period when you're missing inflation on the lower end, then at the future date when you achieve your inflation objective, the future policymaker—which may be a different Committee—does not have an incentive to redeem that past promise.

So, obviously, because of this time inconsistency, to be successful, makeup strategies would have to be understood not only by the public, but also by the Committee to represent such a commitment. A lot of academic and research work, including some that I've worked on, essentially assumes that problem away by assuming this commitment device exists, but obviously that will be an important consideration for us. That's why it's important to note that no central bank today—although my friends in Sweden tell me that in 1935, the Swedes did price-level targeting, but I haven't been able to translate the documents [laughter]—except, perhaps, Sweden in the '30s, has attempted to do price-level targeting or a version of that.

Now, following discussions of the strategies, we will receive a briefing later this fall on potential additions to our toolkit that we might consider, and the staff now plans to analyze more muscular variants of lower-for-longer strategies, such as threshold-based or time-based forward guidance. And, of course, similar policies were deployed, to some extent, by the Committee in the aftermath of the financial crisis. There would appear to be an important benefit of deploying robust forms of forward guidance in a way that expresses the will of a standing FOMC that are plausibly more credible than an alternative that promises that some future Committee at some future date would take an action. And, again, the Committee had some experience with that in previous years.

The staff also plans to brief us on the potential benefits and costs of quantity-based versus rate-based so-called yield curve control balance sheet tools. At present, the Japanese do a version of yield curve control with a soft ceiling on 10-year yields, but yield curve control can be thought of really as a complement to forward guidance over perhaps a much narrower horizon—say, 1 or 2 years.

Finally, an important responsibility of the Committee as part of this review is to assess and execute on the best way to communicate any evolution or revolution in our framework that we may agree on. In this regard, as our framework review evolves this fall, we, as Committee members, will want to consider and think hard about what, if any, changes to our consensus statement may be called for. And as the staff highlighted, as it reads right now, I think there are at least four interrelated elements of the statement that will deserve our focus and attention as we work through communicating our thinking on the framework review. As the staff indicated, these would include how the consensus statement addresses inflation expectations; the meaning and interpretation of symmetry; the time dimension over which the objective is to be achieved; and then something that's omitted now from the statement—which is a reference to the effective lower bound.

Let me conclude by saying that, as part of the framework review, the communications subcommittee has been gathering input from FOMC participants and from feedback in the *Fed Listens* events on possible ways in which the SEP and some other communications might be improved. We have begun to discuss these at our meetings, and at some future meeting of the FOMC, we'll present these ideas for possible discussion and consideration. Thank you, Chair Powell.

CHAIR POWELL. Thank you, Rich. And thank you for your leadership on this.

Let's proceed with the go-round. Vice Chair Williams, would you like to lead off?

VICE CHAIR WILLIAMS. Thank you, Mr. Chair. First of all, I thank the staff—past, present, and future—because not only have you already done a lot of work and are doing a lot of work, but we know that there are a number of memos and presentations ahead of us, as we have already heard. I think these memos and presentations will be really helpful to all of us in framing the issues, to understand what the evidence teaches us—and then really think about how we can best achieve our dual-mandate goals, which is really what all of this is about.

Now, going back to the consensus statement, that's kind of where I start and end, because I do think it's been an incredibly helpful document since we first introduced it in 2012. It has been helpful I think both to communicate our goals externally, obviously, but also to communicate our framework in a way that can then be used in our FOMC statements and other communications. So I always think that everything hangs off the consensus statement, in terms of our decisionmaking and the framing of our decisions. I think it's also helped us internally to have a shared understanding of what our goals are and what our basic strategy is. It has clarified that it's not just about what our goals are, it's really about how do we best achieve them. So, again, I think the consensus statement is really, in a way, the anchor of our policy deliberations and decisions, and I think a successful completion of this process over the next year will end up with some revisions to our consensus statement.

I think in terms of looking back at the consensus statement and thinking about the history of thinking about monetary policy, like many have already said and Governor Clarida mentioned, it does represent, I think, a pretty good statement of the consensus about monetary policy as of about a decade ago. It makes no reference to the lower bound at all and makes no reference, obviously, to unconventional policies or any of these other issues. It really is flying at a very high level.

The word "strategy" has different meanings for different people, but I would put this at about 100,000 feet in terms of when we talk about strategy. There is no oxygen up there, and there is not a lot of clarity about what the strategy really entails when reaching actual decisions. But, because the world has changed since 2012, I think the lessons of the past decade, which were nicely summarized in the memo, have taught us a lot about the world of an environment in which you have low *r** and the proximity to the effective lower bound constraining monetary policy, obviously, not only in the United States, but throughout most advanced economies. So, given that this is a new reality, I think it is a game-changer in thinking about monetary policy strategy and thinking about our consensus statement. I think the memos, again, highlight the key factors that we should be thinking about as we go forward on this and the things that we should be thinking about how to address.

So my comments are, just very briefly, I think, picking up on Governor Clarida's comments. When I look at the consensus statement, I think there are three areas on which we really do need to be focused. And those are the areas that we need to be thinking about and I will be thinking about, in terms of our future discussions.

One is what I see as a fundamental inconsistency between our symmetric inflation goal, as described in the left column of the statement—which I fully support—which says that we want to have 2 percent inflation, on average, and be symmetric around that, which I think of as inflation is above 2 percent about half the time and below 2 percent roughly half of the time. That's a great goal. That is what we want to achieve. However, if you look at the right-hand column, which describes in the lower part what our actual policy strategy implementation is, it indicates that it's basically a flexible inflation-targeting approach. That approach is inconsistent with a symmetric 2 percent inflation target in a world of very low *r** and the proximity of the effective lower bound, because that approach will tend to lead to inflation being biased too low. Flexible inflation targeting means inflation, on average, will run below target because of the constraint posed by the effective lower bound on our ability to react to negative shocks. It also means inflation expectations can easily become anchored at too low a level. So I think that's one area that we are going to need to think hard about—how do we make sure that the description of our policy framework in the consensus statement is well aligned, in practice, with our goals of a symmetric inflation target?

The second issue is really "walking the talk" on anchoring inflation expectations. If you read this existing statement, it basically gives communication the lead role in this. I'm reading from the statement: "Communicating this symmetric inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored." So, in 2012, words obviously are important. But I think what we've learned in the past decade is: You need to have the actions that support the words. We need to be delivering 2 percent inflation on average in order to reinforce, through the results of our actions, this anchoring of the 2 percent inflation expectations. So, again, it's something that I think we need to have clearly in our policy framework and in our consensus statement.

And the third is really about, I think, some clarity about how we think about policy tools, the implementation of the strategy, and the role of uncertainty and risks in our decisionmaking. Again, having the low *r** and proximity to the effective lower bound, I think, is fundamentally a different world in thinking about risk management and thinking about using unconventional policy than we had before. So I would argue that instead of flying at 100,000 feet or even 60,000 feet, it would be helpful to have this framework bring us down to maybe 30,000 feet or so—not into tactics, not into policy rules—but maybe greater clarity about what this means in terms of lower-for-longer and what that means in terms of using our tools in the future.

The final comment I want to make is about financial stability. Having lived through this and listening to President Rosengren's question, I am conscious of the fact that, clearly, this is an issue that we are going to need to continue to think about and address in the statement. I do think it's important for us, when we discuss financial stability, to distinguish between long-run and short-run issues, and here I am picking up honestly on President Evans's comments. If *r** is really that low, close to zero, then this is not about monetary policy strategy. This is a reality of low interest rates. This means that any concerns about financial stability in a lower-for-longer world are really structural more than cyclical.

So I think that, when we think about this discussion, we should separate those two issues. One is, if there are structural issues holding the real interest rates low, and those lead to perhaps greater fragility in the financial system, we need to think of structural policies that will mitigate those risks, because that's not about raising or lowering interest rates. It's about where interest rates are on average. Similarly, when we think about the cyclical decisions on monetary policy, how quickly do we want to bring inflation back to target or respond to shocks? We should also think about what other policy tools do we have that might mitigate financial stability risks?

Sometimes I hear this discussion of lower-for-longer become conflated with just very low interest rates. And if that's the reality, we should be addressing that structural reality and not conflating that with short-term policy decisions. I know that Vasco doesn't want to promise new memos on this in the short run, but as we work on this framework project, we need to be clear with ourselves and with the public about what our framework is and how we're thinking about these various issues. Thank you.

CHAIR POWELL. Thank you. President Rosengren.

MR. ROSENGREN. Thank you very much, Mr. Chair. Just a comment on the process. I think the process has worked quite well. I think the listening tour was quite effective, and the Chicago conference worked out very well. And I would say, the very thoughtful process in which we're going through the set of issues over the course of these meetings between now and the end of the year was long overdue, for some of the reasons that were just highlighted. A lot in the world has changed, and this is really a great time to be doing this analysis. I'm glad we're spending as much time as we are, because I think it is critically important.

I'm just going to provide answers to the three questions posed to us in the memo, and I'll just do it in the order that we were asked. The first was the advantages and disadvantages of the current framework. The operating framework should be designed so as to put the FOMC in the best position to achieve its congressionally mandated goals. Because the Federal Reserve has a dual mandate, with both stable inflation and maximum employment as its objectives, the FOMC could react more aggressively at the outset of the financial crisis than many other central banks. So the dual nature of our mandate has served the public very well.

The 2012 Statement on Longer-Run Goals and Monetary Policy Strategy, in addition to stating an explicit inflation target, has further cemented the importance of the dual mandate. I think the Committee and the public have also been well served by having a more explicit framework document that is voted on at each January organizational meeting. It is an important tool that should be referenced more not just in our public communications, but also internally during our policy deliberations.

The dual mandate, along with the resulting emphasis on a balanced approach to policy in the 2012 Statement on Longer-Run Goals and Monetary Policy Strategy document, provided a compelling rationale for aggressively using unconventional monetary policy tools at the effective lower bound. It is less clear, however, that the Committee has followed a balanced approach since liftoff from the effective lower bound. Several factors are likely to have played a role in policy decisions deviating from the framework's simple characterization of the loss function.

This deviation could have been the result of the median SEP forecast not having been a good proxy for voting members' positions or policy decisions based on risk-management concerns. For a variety of reasons, probing for better labor outcomes likely served the Committee well at the early stage of the liftoff, but it is too early to assess the merits of more recent deviations from the balanced approach. A lot hinges on future inflation developments and risks to financial stability. Regardless of how one views the deviations from the balanced approach, a more methodical discussion of the reasons for moving away from the current framework's reaction function would be helpful, both internally and in communications with the public. Communications are a crucial component of the current framework. Much progress has been made on this front over time, but more is probably needed.

In terms of the different uses of the tools, the second question, we utilized balance sheet tools and forward guidance to address a financial crisis and a very deep recession, with little historical experience, uncertain political support, and concerns with exit strategy. Knowing what we know now, it is probable that we should have continued to use the tools more aggressively to achieve our mandate more quickly. And, in retrospect, setting economic triggers for discontinuing quantitative easing might have been a more effective way of addressing tapering.

In terms of the balance sheet, I am convinced that we can provide meaningful accommodation at the effective lower bound. However, as Japan and Europe have shown us, it is clearly no guarantee of a quick exit from the effective lower bound, and in both Japan and Europe, where much of the yield curve is negative still, additional stimulus is most likely productive if it focuses on spreads associated with more risky assets.

In the United States, with our limitations to purchase only Treasury and agency securities, we could find ourselves with no additional effective tools in an extended period at the effective lower bound. More effectively using forward guidance and targeting rates further out on the yield curve seem like strategies that we should consider more seriously. For example, explicitly targeting rates further out the yield curve, coupled with forward guidance that reinforces the intentions and expected duration of such balance sheet policy, could prove effective.

With regard to the third question, several changes could enhance the Statement on Longer-Run Goals and Monetary Policy Strategy. First, there is no recognition of the challenge posed by the higher risks of hitting the effective lower bound when r^* is low. Globally, this has been a significant problem, and we should recognize that, when setting policy, central banks must consider the monetary policy challenges at the effective lower bound. It may, for example, be a time when we target an inflation rate at the high end of the tolerable range if we switch to an explicit range rather than a single target. As well as adopting a strategy that makes this a somewhat less likely outcome, I would advocate for a more explicit acknowledgement that balance sheet and forward guidance are, by necessity, monetary policy tools at the effective lower bound.

Second, we should deal with financial stability more explicitly. We want our dual mandate to be achieved over time. The past two recessions have been significantly affected by financial stability-related issues, resulting in a significant miss of our dual-mandate goals for much of the subsequent decade. Short-term achievement of the dual mandate should not be at the expense of financial stability concerns, which makes achieving the dual mandate in the future much less likely.

Third, while the current Statement on Longer-Run Goals and Monetary Policy Strategies emphasizes the symmetry of the 2 percent inflation target, I would explicitly adopt an acceptable range for inflation around 2 percent—say, between 1½ and 2½ percent. The constraint that we always aim to hit the 2 percent target seems appropriate if there are reasons to believe that the economy will hit the effective lower bound rarely and for a short time.

If, instead, effective lower bound episodes are more likely and potentially longer lasting, it would be reasonable to relax the constraint mildly. In this setting, when monetary policy is constrained by the effective lower bound, forward guidance would be used to promise more time in the upper half of the range once the economy has recovered from the recession. Such a framework would be more effective at delivering a 2 percent inflation rate on average. In looking back, it is evident that such a strategy might have made a larger fraction of the Committee more comfortable with more accommodative policy over the past several years. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Mester.

MS. MESTER. Thank you, Mr. Chair. To start, let me say I'm very supportive of the Committee's undertaking this review of our policy framework. The Committee did take unprecedented policy actions to address the financial crisis and Great Recession, and there is reason to believe—based on the aging of the population, expected slowdown in population growth, higher demand for safe assets, and other facts—that the longer-term equilibrium real interest rate will remain lower than in past decades. For both these reasons, reviewing our framework and the tools with which we implement monetary policy to achieve our dual-mandate goals is timely.

Now, if the Committee decides to change its framework—and here, in particular, I'm talking about changing from flexible inflation targeting to a makeup strategy—it's going to have implications for the setting of monetary policy well into the future. So it's important that our review be a thorough one. I appreciate the analysis that's been done by the staff to date, but my biggest "ask" as we go forward is that the staff incorporate multiple models and examine different perspectives in its analysis, in order to ensure that any conclusions are robust.

Before changing the framework, it would be useful if the Committee tests, through "tabletop" exercises or some other means, how any proposed framework would play out in real-time decisionmaking and across different economic scenarios and to examine how our decisions and communications might have changed if we had been operating under an alternative framework instead of the current one. My understanding is that forthcoming staff analyses of alternative frameworks will incorporate some robustness checks. I want to encourage the staff to go further, as I believe that thorough robustness testing and analysis of alternative perspectives are needed when the Committee is contemplating something as significant as a change in the framework. This will also aid our communications, as it will reassure the public that we considered a range of perspectives and did not succumb to groupthink in coming to our conclusions.

Many of the alternative frameworks that have been proposed have theoretical appeal, but none of them are without implementation challenges. For example, many of them work well in models featuring perfect credibility and commitment and in which the public understands the framework and believes future Committees will follow through, and in which the Committee actually does follow through. Even under the current framework, commitment has been a challenge for the Committee. Under the alternative frameworks that entail inflation makeup strategies, issues of credibility and commitment loom even larger. One needs to ask whether it's credible for policymakers to commit to keep interest rates low to make up for past shortfalls of inflation from target even when demand is growing strongly or to act to bring inflation down in the face of a supply shock by tightening policy even in the face of weak demand.

The framework analysis being done to evaluate the benefits and costs of each framework needs to be explicit about the assumptions underlying each model used in the analysis. We need to understand the implications of different assumptions about how the public and market participants form expectations, levels of credibility of policymakers, and limits on the ability or desire of policymakers to commit to future policy action. We need to know what happens if the Phillips curve, which is flat now, steepens more abruptly than assumed even if that's not the modal view. In addition, we need to acknowledge head-on that monetary policy decisions are necessarily made in an environment of uncertainty. Our data are revised. There are measurement issues involved, and distinguishing demand shocks and supply shocks is difficult.

As the memos point out, there's uncertainty about some of the underlying structural aspects of the economy, including the equilibrium interest rate and potential output growth. There's model uncertainty, including regarding the transmission mechanism of monetary policy and inflation, employment, and growth. These uncertainties suggest that we cannot limit the framework analysis to one model of the economy.

The analysis also has to take seriously issues that are rarely incorporated into our models. The political economy issues surrounding balance sheet policies are one example of this type of an issue. Our narrow set of countercyclical tools for fostering financial stability is another example.

Indeed, our workhorse models are quite limited when it comes to studying the nexus between monetary policy and financial stability. So we need to seek out other models, as the interplay between macro stability and financial stability is likely to become more important in a low interest rate environment.

In terms of the questions: The memo asked whether the current framework of flexible inflation targeting constrained the Committee from taking appropriate action to address the Great Recession, which might suggest a change in framework is needed, or whether the Committee could have taken more effective actions even under the current framework, which might suggest no change is needed. This may be a good heuristic device, but I'm not sure I agree with the memo's conclusions. Hindsight can be 20–20, while decisionmaking in real time is difficult, partly because of the uncertainties that I mentioned.

The staff memo, to my mind, too easily dismisses the political-economy concerns expressed by some Committee members at the time about balance sheet policies and interest on reserves. Indeed, some outsiders—that is, not those on the Committee—continue to call for eliminating interest on reserves, viewing it as a transfer to banks. Now, I wasn't on the Committee then, but as I recall, some Committee members were concerned about potential congressional backlash were the extraordinary tools pushed too far—which would have undermined the use of these tools in the future.

I'm also not sure about the staff's assessment that forward guidance didn't create much confusion. The form of the Committee's forward guidance underwent several revisions, from qualitative guidance to calendar dates to economic thresholds and then to a combination of calendar-based and state-based guidance. As I recall, explaining the changes was not that easy as the Committee struggled with commitment.

Finally, even if some of the risks associated with balance sheet policies and forward guidance didn't become reality, this does not mean that the Committee was wrong to take such risks seriously at the time. It could be that being less aggressive with these tools actually lowered some of the costs and risks of using them. Risk-based policymaking means considering risks that won't necessarily be realized and the effect of actions on those risks.

I do think that the current framework of flexible inflation targeting, which includes an explicit 2 percent symmetric inflation objective and a balanced approach to achieving our dual-mandate goals, has served the Committee well in effectively promoting our policy goals. The Great Recession was very deep, and the Committee needed to use extraordinary policy tools. Now the U.S. economy has recovered to a sustained period of growth, strong labor markets, and inflation near our target, and we have normalized our policy settings. I believe being explicit about the Committee's inflation target helped anchor long-run inflation expectations as the economy emerged from a period of economic weakness and substantial policy accommodation.

Now, that's not to say there aren't things that can make the framework more effective. In view of the imperfect precision with which monetary policy can control inflation and secure our dual mandate, I think it's worth considering whether we would be better off defining the inflation goal in terms of a range centered on 2 percent rather than a point target. It's difficult to believe that the economic effect of 1.8 percent inflation would be significantly different from 2 percent inflation or that the public sees the difference as material, particularly in light of inflation perceptions that are actually a good bit higher as suggested in surveys and our *Fed Listens* sessions. The point target, rather than a range, may be complicating our communications and policy decisions.

Another thing to consider is the level of the inflation target. I understand that this has been taken off the table in the framework discussion. For several reasons, it seems hard to make a case to exclude an evaluation of the costs and benefits of raising the inflation target even if, in the end, we land on 2 percent. These reasons include the memos' emphasis on the challenges posed by the effective lower bound in an environment of low longer-run equilibrium real interest rates, the conclusions reached by economists outside the Fed and the fact that the Bank of Canada has included such an analysis in its regular framework review.

Now, regardless of the framework the Committee ultimately decides on, the public's expectations about future monetary policy are an important part of the transmission mechanism of policy to the economy, so effective communication will be an essential component of the framework. At present, the Committee's Longer-Run Goals and Monetary Policy Strategy document does a credible job of discussing the goals but, to my mind, does not offer much in the way of strategy. And I think there are some opportunities of better clarifying our strategy.

First, we could take a more systematic approach to our policy decisions and how we communicate those decisions. This includes our strategy for our policy interest rates, our balance sheet policies, and our forward guidance, as well as the potential use of negative interest rates, which have been used in the euro area and are another way of addressing the challenge of the lower bound. If we were more systematic in how we go about using each of these tools and under what circumstances, our communications will be clearer, and we could better align the public's policy expectations with policy decisions.

With regard to the nontraditional tools, we could clarify under what conditions we would start and stop using these tools and the mix of assets we might purchase. This could vary with the nature of the shocks hitting the economy.

Increasing the public's understanding of how we conduct monetary policy could help insulate monetary policy from short-run political considerations and offer more policy continuity over time as Committee membership changes. The communications challenge for the

Committee is to give the public a good sense of how monetary policy is likely to respond conditional on how the economy evolves without implying that policy is pre-committed to a particular path regardless of how the economy evolves.

Second, we could clarify the Committee's views on how to balance macroeconomic and financial stability concerns, the use of tools to achieve each, and the governance framework for making these decisions. With the financial stability concerns that arise with long periods of low interest rates, this would be a good time for the Committee to begin formal discussions about the nexus between monetary policy and financial stability needed to reach a consensus. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Evans.

MR. EVANS.[2] Thank you, Mr. Chair. This is a very good review process, and the comments so far clearly reflect that. As I prepared these remarks, I took note of the fact that the composition of the FOMC has changed quite a lot since we adopted our Statement on Longer-Run Goals and Monetary Policy Strategy in 2012. So, since I have become one of the old guard here, I thought I would stay in that form and talk a little bit about how we got where we are today. And, of course, it's in my nature anyway. [Laughter]

But more importantly, we're all familiar with the prudent financial investor's lament. It wasn't that long ago that financial markets were in turmoil due to the Global Financial Crisis, and today markets are behaving almost as if the crisis never occurred. Have investors forgotten important lessons? Monetary policy should not make such a mistake. There are a lot of lessons of the 2008–15 period that I want to stress in these strategy discussions, but the main one that I learned is that once the effective lower bound enters the realm of meaningful possibility, the

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

value of ambitious, aggressive, do-what-it-takes policymaking goes way up. More timid, conservative policymaking approaches will not get the job done.

I want to thank the staff for these informative and thought-provoking memos. Many interesting perspectives were offered. Regarding the historical experience discussed in the first memo, I found it particularly noteworthy that the ¾ percent annual pace of decline in the unemployment rate from 2009 to 2015, roughly, was typical of other recoveries. I found this noteworthy, because the FOMC needed to expand its balance sheet to $4.5 trillion and use calendar-based and threshold forward guidance in order to achieve this normal outcome. Fighting the effective lower bound was far from a business-as-usual experience, and, as President Mester's comments mentioned, it was different, and explaining that to everybody was a challenge, no doubt about it.

Indeed, we embarked on open-ended quantitative easing and threshold forward guidance in the fall of 2012 largely because of the poor expected performance of the labor market. The unemployment rate was 8.3 percent then, and unless you thought the natural rate of unemployment was above 7 percent, the outlook was extremely unsatisfying.

The Bernanke Fed's version of do-what-it-takes monetary policy was crucial in generating the typical labor market improvements that we observed. But, as aggressive as monetary policy was in 2012, maybe our earlier efforts were too timid and too conservative. Maybe we should have done more back in 2010 when the unemployment rate was still near 10 percent, and it was pretty clear that the recovery was going to be challenging. Instead of simply hoping for a much better-than-average historical recovery, maybe we should have stimulated the economy not with the aim of achieving a typical pace of decline in the unemployment rate, but with a goal of closing the overall unemployment rate gap within a more normal historical time frame—less than the six years it actually took.

Clearly, aggressive actions in the fall of 2012 were consistent with our January 2012 framework, as we took those actions under the framework. And, today, I think our current framework has the potential to serve us as well, as long as we keep a steely and explicit focus on attaining our inflation and maximum-employment objectives over an appropriate period. This is outcome-based monetary policy, and I think the reference to an appropriate time frame is extremely important and deserves much more discussion than we've had in the past. I agree with the comments that Vice Chair Williams and Governor Clarida made earlier on that point. Do-what-it-takes, outcome-based policy should include an expected time-to-improvement.

The second memo stressed many challenges that the FOMC faces now and will likely face in the future. The economic environment is the main culprit, in my opinion. Trend growth of around 1¾ percent seems justified on the basis of low labor input growth and moderate productivity trends. This, together with a global environment that is similar or worse, leads to low equilibrium policy rates. In this setting, the likelihood of revisiting the effective lower bound is too high for comfort. Even a modest downward shock could lead to a prolonged stay at the effective lower bound, with unsatisfactory employment and inflation outcomes.

A lot of work has been done indicating that in this economic environment, optimal outcome-based responses might benefit from alternative monetary policy approaches, like average inflation targeting or temporary price-level targeting. But our discussion of those policies is coming in September. Today's meeting is focused on working through the strengths and weaknesses of the current framework. I think our current framework can take us far. But for it to do so, we need to establish an appropriate working definition of our symmetric inflation objective. This is perhaps the key issue that needs to be addressed in ensuring effective monetary policy under the current framework.

First, I think our Statement on Longer-Run Goals and Monetary Policy Strategies definitely allows the FOMC to seek, affirmatively, an overshoot of our 2 percent inflation objective. I disagree with the roadmap memo's characterization that it does not. Recall that, in December 2012, the FOMC adopted a threshold forward-guidance policy that indicated that the federal funds rate would not be increased at least as long as the unemployment rate was above 6½ percent and inflation stayed below 2½ percent. So, in the pursuit of lower unemployment, the FOMC was willing to generate inflation above 2 percent.

Second, as the roadmap memo highlights, the sentence introduced into the Statement of Longer-Run Goals and Monetary Policy Strategy in January 2016 on symmetry can be a powerful tool. At the time of those discussions, I strongly believed that the FOMC's approach to letting inflation gradually rise to 2 percent was too timid. Indeed, our efforts likely were being hampered by entrenched public beliefs that the Committee would tighten policy to ensure that inflation did not rise above 2 percent.

I thought that the Committee's main objective in adopting the "symmetric" language was to indicate more clearly that 2 percent was not a ceiling—2 percent is a target. That being the case, our framework needed to allow explicitly for periods of inflation above 2 percent. As Vice Chair Williams mentioned, 50 percent of the time inflation is above 2 percent. and 50 percent of the time it is below 2 percent is one way you might think about that. I do.

I felt that communicating this understanding could bolster inflation expectations and thus remove an important drag on achieving our objective and generate a consensus in favor of greater specificity on policy actions, especially agreement among Committee members on how to achieve symmetry. That was simply too difficult a task for the challenges and disagreements over policy at that time. We couldn't get there. Nevertheless, the affirmation that our inflation objective is symmetric did indicate that the Committee would view an extended period of inflation below 2 percent as unacceptable and would act to rectify the situation.

What should those actions look like? There's a handout that was distributed. In the handout, I generated of a very simple chart for you. Consider one of the first scenarios in the second memo in which the constraints associated with the effective lower bound can cause a prolonged undershooting of inflation. I distributed a very simple chart to visualize a couple of possible policy responses. The green path labeled "π^A" expects inflation to rise deliberately but gradually to 2 percent. I think this approach has challenges. As the staff memos note, the economic and risk environment here makes downward inflation shocks more costly than upward ones. Furthermore, this asymmetry can generate lower inflation expectations by the public. In other words, the effective lower bound, together with a reluctance to use policy aggressively, would reinforce low inflation outcomes.

The path labeled "π^B" envisions more aggressive policy actions that lead to a moderate overshoot and quicker attainment of the inflation objective. And if downward inflation shocks are realized along this path, 2 percent may still be achieved sooner than in the π^A path.

As I contemplate the most appropriate conduct of monetary policy actions when risks in the effective lower bound loom large, I think affirmative overshooting policies are in line with the existing framework to avoid persistent underruns. Overly conservative and timid approaches risk substantial periods of undershooting. Of course, communicating more strongly that the expected conduct of monetary policy will support affirmative overshooting action is still something that we have to discuss.

Finally, let me briefly touch on another important issue for the framework discussions. Our public *Fed Listens* reviews have reinforced, for me, the point that the FOMC needs to clarify how we think about maximum employment. Many briefings, research papers, and the second memo highlight the flatness of the Phillips curve in the short run. I think we need to consider seriously how we would analyze, project, and take policy actions to guide inflation to target in a world in which there is no Phillips curve. Not just flat—but a world in which it's really not relevant in any way.

If the entire inflation proposition comes down to inflation expectations alone, then we have to think about what that means. What would be the inflation-generating process? Should we resurrect old theories and monetary models to help guide that? Would they be relevant? Should we appeal to the fiscal theory of the price level? Maybe that would be what determines inflation.

We need to have a better idea of that in case the Phillips curve just doesn't help us much in the future. Now, this is too much for today, but this is a topic that deserves serious consideration for our review. If the Phillips curve is, indeed, flat, then we need to clarify what we think the cost of 3 percent unemployment is. If it is not a harbinger of future inflation, what is the cost? I thought the *Fed Listens* panel that President Rosengren moderated was particularly interesting on this topic. Maurice Jones of the Local Initiative Support Cooperation, or LISC, stressed that employment is the best tool for fighting poverty and noted the many economic challenges faced by low-income communities even when the unemployment rate is 3.6 percent.

At the conference, Eric mentioned the risk that a substantial undershooting of the natural rate of unemployment could be followed by a very difficult recession with high unemployment as national labor markets recalibrate. I heard Jones challenge that view and respond that, in the communities in which he's working, it always feels like a recession. It has only been recently, with the unemployment rate at historic lows, that meaningful opportunities have penetrated these communities. Sustaining low unemployment offers the hope of stronger attachments to the workforce and the associated and important structural benefits.

All of this makes me think that we need a lot more work and discussion on the monetary policy cost of moving the economy beyond some measure of maximum employment. If it's not a harbinger of future inflation, what is it, in terms of the cost? If it is a harbinger of future inflation, okay—we understand that that has some risk.

In sum, I look forward to further discussions about alternative strategies that might help the FOMC achieve the appropriate degree of accommodation. In the face of the effective lower bound and other challenges, I know that we will better understand our strategic policy options following this review. I think we're going to have challenges, but I expect that the FOMC will be well served if we focus first on clarifying the meaning of our dual-mandate goals of 2 percent symmetric inflation and maximum employment and second on being more explicit about how the conduct of monetary policy will support the attainment of these outcomes. Our current Statement on Longer-Run Goals and Monetary Policy Strategy is a powerful tool, and enhancing it can take us a long way. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chair. And thanks very much to the staff for the memos and the ongoing work in this area. I think it's a very good summary of all the issues. These are difficult issues and difficult to organize. So I think it's really been excellent work.

My general comment would be that I think this is a very welcome framework review that we are undertaking. I think it's a great time to be doing this, during 2019. I think it's a best practice in central banking. So I think all of this is excellent, and I welcome it. Chair Powell even said that it was "exciting." That's not a word I hear a lot in macroeconomics. [Laughter] Even though it's a best practice, I don't think it's easy to do a framework review. It drags up all kinds of deep issues in monetary economics and macroeconomics, and the art here is going to be deciding what can we actually do to tweak our framework in the next six months, as opposed to trying to resolve all of these deep issues.

I'm willing to accept, for the purposes of this discussion, the definition of the current framework as a version of flexible inflation targeting consisting of the Statement of Longer-Run Goals and Monetary Policy Strategy—or the "SLRGMPS," if you like the acronym—a set of tools to include interest rate policy, forward guidance, balance sheet policy, and possibly negative interest rate policy or yield curve control or other types of policies that have been used by other central banks, and, finally, a bygones-are-bygones approach to inflation targeting. And I think that is an accurate short summary of what our framework actually is, and I'm willing to work with that.

I see the Statement on Longer-Run Goals and Monetary Policy Strategy as the only existing communications channel for announcing a framework change for this Committee, but I would stress to the group that I think this vehicle is extremely limited, as its ability to handle difficult concepts is very narrow. The idea that you can artfully incorporate the subtleties of the macroeconomic debates into this four-paragraph statement, I think, is a bit of a heroic assumption. The r^* debates and u^* debates and others are probably best left for the supporting research literature.

So I guess one thing I'd like to get the Committee to think about is, are there ways that we can convey subtleties about our flexible inflation-targeting framework other than through the statement itself? A white paper would be one idea, or some sort of summary, or—we already do conferences, conference volumes, things like that that can do justice to these very difficult issues, as opposed to a word or a phrase that might be put into the Statement on Longer-Run Goals and Monetary Policy Strategy. The Statement on Longer-Run Goals and Monetary Policy Strategy is quasi-constitutional in nature and needs widespread support for the Committee to be effective. It has often been called the consensus statement. I believe Chair Yellen often used the phrase "consensus statement."

I agree with Vice Chair Williams that it's a 100,000-foot document, but there's a reason it's 100,000 feet. It's because, when you start getting to lower levels, there starts to be more disagreement about what should actually be in there and what can be agreed to by the entire Committee.

When we first put this together in 2011 and adopted it in 2012, it was very important to have what I would call "big tent" language. I would say the phrase "balanced approach" was the best example of the big tent language, because the balanced approach phrase could be interpreted a lot of different ways by a lot of different people around the table. In summary, I would say that the Statement on Longer-Run Goals and Monetary Policy Strategy was originally meant as a statement of the United States adopting an inflation target, and it was a goals statement and not a tactics statement. I'm hearing some of the discussion around here trying to push toward more of a tactics statement. I think it is going to be very difficult to get consensus supporting that.

These considerations seem to rule out using the Statement on Longer-Run Goals and Monetary Policy Strategy to discuss which tools should be used under various circumstances. I think the best that we can say about the tools is that there are many, that they may be at least marginally effective, and that we reserve the right to use them if we think it will help us achieve our goals in various situations that the country might face in the future.

Similarly, financial stability concerns are very legitimate, but we do not have very good models that describe the connections between financial stability and monetary policy. I think it is going to be hard to get a clear statement of what our policy is with regard to the interaction of monetary policy and financial stability into this Statement on Longer-Run Goals and Monetary Policy Strategy.

If we can make any constructive changes to the Statement on Longer-Run Goals and Monetary Policy Strategy, it may be in the area of the nature of the symmetry of the inflation target, which is really the only area in which we've tried to make revisions since we adopted it in 2012. And I agree with some of the comments of Vice Chair Williams in this regard. The current symmetry language looks backward instead of forward and expresses concern only about past misses of the inflation target—but does not make a call to action if there have been past misses of the inflation target. We may be able to revise the language to beef up our commitment to actually achieving the inflation target on average over time.

Governor Clarida's opening comments stressed that such strategies are time inconsistent—that is, that future Committees may not honor commitments made by past Committees. I would temper that thought a little bit. I think that we could beef up our commitment and make it better than what it is today. It may not be totally perfect the way it is in macroeconomic models, but it could be better than it is today.

Many models and analyses suggest that such a commitment would materially improve macroeconomic outcomes and so help the Committee better achieve its goals. Strengthening commitment might allow the Committee to take a step in the direction of price-level targeting or its close cousin, nominal GDP targeting, which may help us avoid the effective lower bound in the future.

Question number one in the materials for this discussion asks if flexible inflation targeting has inhibited the Committee from achieving its goals since being officially adopted in January of 2012. The central lesson in monetary economics and central banking over the past 20 years is this: Not only is the effective lower bound a constraint on monetary policy, but it is also, potentially, an absorbing steady state from which an economy may not escape in any reasonable amount of time. That is the experience of the Bank of Japan over the past 25 years, and something similar may be unfolding in Europe today. Many smaller economies also seem to be in this situation.

This was pointed out in the literature by Benhabib, Schmitt-Grohé, and Uribe in 2001 in their famous "Perils of Taylor Rules" paper. The memos do acknowledge the current proximity to the effective lower bound without acknowledging the potential for the current state to become the steady state. The memos understand it as an unmooring of inflation expectations to the downside. I would just explain this as, if inflation expectations become unmoored to the downside, there is a steady state there, which means that the economy can actually get stuck at a situation of zero inflation or possibly negative inflation like Japan has, whereas, if inflation expectations get unmoored to the high side, there is no steady state there. So what you see is high and variable inflation in that situation, as we've seen around the world—for instance, in Turkey or elsewhere today or certainly in developed economies during the 1970s.

So there is a difference between having unmoored expectations to the upside and to the downside but, in either case, there will certainly be unsatisfactory outcomes for the Committee.

The danger for us is on the low side—you may not be able to find your way back to the inflation target once the inflation expectations become unmoored to the downside.

The best way to avoid this outcome in the United States—and we're still in a great position to avoid the Japanese outcome or the European outcome—is by rigorously maintaining the credibility of the Committee's 2 percent inflation target. And in this, I very much agree with the comments of President Evans and Vice Chair Williams. One way to do this may be to take a step toward price-level targeting in the 2020 revision to the Statement on Longer-Run Goals and Monetary Policy Strategy.

I have a brief comment on ranges, as opposed to a target for inflation. I am concerned about drifting toward a target range for inflation in the current situation. I think that if we name a target range instead of having a point target for inflation, it may weaken our commitment to a 2 percent inflation objective. If we went to a range, I think the message would be that 1.5 percent inflation is okay. The Committee is satisfied with that. We don't need to take action to change that. But my discussion here is suggesting that that's exactly the thing we want to change. We want to move toward 2 percent inflation faster or even move above 2 percent inflation, as President Evans was talking about just a moment ago. So I think it's the wrong moment to think about going to a comfort zone for monetary policy, and for those newer members of the Committee, I might point you to an older speech by a former member, Rick Mishkin: "Comfort Zones, Shmumfort Zones." [Laughter]

Also, as I understand it, communications will be discussed at a later meeting. I have strong views on this, and I'll just make a few comments here. I do think we need to reform the Summary of Economic Projections. In my opinion, we essentially have two policy statements, one of which is coordinated carefully at the meeting here and one of which is uncoordinated, and sometimes these two policy statements are in conflict. This is creating ongoing problems for the Committee at various junctures.

Also, the SEP is based on a calendar year—which can box the Committee in during the second half of the year—something we're going to face very shortly here at upcoming meetings. I think we need more urgency on this challenge for the Committee. We're going to have to fish or cut bait on this and make a decision. We need to straighten this out soon. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Daly.

MS. DALY. Thank you, Mr. Chair. Like others, I would like to give my praise for the process, the framework review, the *Fed Listens* events, the steering committee, and the memos. I really think this is what makes us strong, and these deliberations or discussions are very helpful in thinking through these issues. And, since I'm new to the Committee, I'm going to bookend President Evans, and, instead of summarizing lived history, I'm going to summarize sort of studied history and where that makes me think about the path forward.

By now, the experiences here, in Japan, in Europe, and elsewhere clearly demonstrate that the effective lower bound is a significant constraint on monetary policy in our current policy framework. There has been a secular decline in r^*, for the reasons that President Mester mentioned, so the effective lower bound is a constraint that is much more likely to bind in the future, hindering our ability to provide the appropriate level of accommodation to offset negative shocks to the economy.

I was looking back—and people have mentioned this—for example, we lowered the federal funds rate 5½ percentage points, on average, during the nine recessions since the mid-1950s, and clearly we no longer have this amount of policy space should an average recession occur. And so the question that that leaves me with is, can unconventional policies compensate for the shortfalls in our conventional policy tools at the effective lower bound in a normal circumstance, not one that's associated with a severe financial shock, just a normal, average encounter with the effective lower bound?

Work throughout the System and the experience of other central banks convinced me that forward guidance and balance sheet policies were effective at providing some necessary stimulus during the financial crisis and its aftermath. And, on balance, the evidence shows that these policies lowered long-term interest rates, depreciated the U.S. dollar, and, overall, led to more more-accommodative financial conditions. These more accommodative financial conditions, in turn, helped support growth and inflation, although the exact magnitudes of those effects are still being debated.

But still, these alternative policies are not a panacea, and I start by considering asset purchases. My reading of the literature is that there is still quite a lot of disagreement about their effectiveness—more so, in fact, than was portrayed in the memo, because the memo was focused on the first episode of quantitative easing. As we continue our discussions, it will be very important to keep the diversity of the views in mind about just how effective quantitative easing is. It is just something that's true—that if you talk to central bankers, quantitative easing looks very effective. If you talk to financial economists in the academic sphere, they have a much more pessimistic or skeptical view of quantitative easing. I think those are important things for us to consider or think about, as President Mester noted, with robustness checks.

In addition, across studies, the effects of quantitative easing appear more modest during later rounds of asset purchases. This is a topic that we have yet to take up. So an understanding of what makes asset purchases effective will likely be quite relevant in the future when encounters with the effective lower bound come without the significant financial market dysfunctions we observed in the previous crisis. And we will need a toolkit that works well in both situations: the dire and the less dire.

Now, in terms of forward guidance, our experience before, during, and following the financial crisis suggested it is useful in a wide range of circumstances. As a result, providing additional forward guidance would be the first tool that I would go to in the vicinity of the effective lower bound before contemplating asset purchases. But, more importantly, communications about future policy depend crucially on our credibility. And, here, certain types of guidance are likely better than others.

I was struck by President Mester's and President Evans' review of what was going on during the previous Committee deliberations. It was really learning in real time using a variety of things. But one way to think about that is, we've now experienced what worked better, time-based, state-based, et cetera. And we can basically try to surface some best practices and have them at the ready for an average encounter with the effective lower bound.

When I looked over the information, the thing that came through was that state-based guidance was much easier to communicate—it provided clarity, enhanced transparency, visibility, and accountability. But we ended up acknowledging that there's only so much information we can regularly put into our policy statements. We will naturally then be leaning more and becoming more dependent on our communications that surround those statements. So that would be the Chair's press conference and our own speeches and interviews that communicate the path of policy.

And here—I wasn't going to do it, but, since President Bullard brought it up—despite its flaws, I believe that the SEP has proven to be a useful component of that communication. I'm glad we're going to undertake a review of it, but I want to just highlight a few things that, to me, came through. The SEP has been effective at conveying our perceptions, or the Committee's perceptions when I wasn't on it, of a decline in *r** over the years. The SEP was the main vehicle for really coalescing around the view that all of the Committee members saw a decline in *r**, because the range of reported values of *r** was coming down as well as the median. This was particularly valuable early on to guide markets and explain the policy stance as they were trying to figure out—is the stance being driven by the reaction function or is it being driven by the fundamental variables? It also has provided useful information about the evolution of growth, potential growth, and inflation forecasts, giving market participants more context to interpret the outlook for interest rates—again, allowing them to understand the reaction function versus the forecasts of fundamental variables.

So, overall, forward guidance and balance sheet policies remain incomplete substitutes. Let me start over there. These are both important tools. They should be in the toolkit. We've seen them be used effectively. But they are incomplete substitutes—at least my reading of the evidence suggests—for the main policy tool we have at the effective lower bound. And in this context, the review of our policy framework is imperative, and I'm looking forward to the analysis and discussions of alternative policies and strategies, including makeup strategies.

Makeup strategies are no magic bullets and have costs and concerns attached to them; nonetheless they might help guide market expectations during effective lower bound episodes in a more systematic manner, particularly if we are able to establish the credibility of our policies in normal times.

Let me say a few last things. Although it is still early—for me, anyway—to weigh in on specific changes to the Statement on Longer-Run Goals and Monetary Policy Strategy statement, I do really see a benefit in noting that we have effective lower bound risk, and that's a risk the Committee will be attempting to balance. I also think there is scope to discuss the uncertainty about *r** and just the "star" variables in general. We take that up on *u** quite well. But these are all the variables we use to calibrate policy, and being clear to the public that these are not "Truth" with a capital *T* and that there's some uncertainty about their actual values, especially in the coming years, will be important.

I want to concur with Vice Chair Williams that matching the goals that we state on one side of the statement to the strategies that we put forth, without getting to tactics—really, just getting from 100,000 feet to 30,000 feet, I think—will be incredibly important.

And given that President Evans brought it up, one of the things that will be increasingly important for us to communicate is, how do we decide what full employment is if we don't have it tethered to inflation? I think one of the big lessons out in the *Fed Listens* tours has been—for me, anyway—that people are very aware that we don't have runaway wage inflation or price inflation, and that we still talk about the relationship as if it's holding or binding us. So we might need another way to answer the question of how do you define full employment—is it allocative efficiency? Are you worried about other components maybe pulling people out of school or housing prices going up, and those equilibriums aren't correct? Those are all questions we'll have to grapple with if we're going to effectively communicate about our policy stance.

Finally, I want to just say—well, I have said that it's a best practice to do this periodic review, and I really applaud this. I think it's critical. I also think it's important for us to acknowledge that our current approach to policy helped us navigate through these very rough waters of the financial crisis and subsequent to it. And there I want to underscore that the anchoring of inflation expectations around 2 percent, which the Federal Reserve had worked for two decades to ensure, was really part of the reason we had the scope to do the exceptional policy accommodation that allowed us to do the best for our dual-mandate goals. Thank you.

CHAIR POWELL. Thank you. President Barkin.

MR. BARKIN. Thanks for this thoughtful introduction to what I know will be an important process. To the first two questions, I believe our existing tools and framework have served us well. This seems especially true when you contrast our recovery with those of other countries. Unlike most of them, we're close, within decimal points, to both parts of our dual mandate. The important constraints we've faced have been political—fiscal tightening in the early part of the decade, trade policy uncertainty more recently, and perceived limits on the size of our balance sheet.

For sure, we're closer to the effective lower bound, meaning we have less ammunition, if you will. I don't treat this as a shortcoming in our framework but just as a real descriptor of our economy these days. And in contrast, our regulatory regime should help maintain a healthier banking system and stronger household balance sheets, suggesting that there should be less need to use extra-normal measures at the effective lower bound. And new tools like forward guidance and quantitative easing are now understood and hopefully these tools will be more credible and can be used more forcefully.

We'll get to the topic of makeup strategies in September, but I would love to urge us to broaden our research, to test strategies that actually try not to do too much. For example, it's not at all clear we should be the only game in town, and this review gives us the perfect opportunity to raise, and perhaps make progress on building conviction on, the need to use fiscal levers and to address the structural barriers raised in the second memo.

I also worry that strategies that increase our time at the effective lower bound run the risk of stabilizing lower inflation expectations, rather than returning them to our target. That's not inconsistent with the experience of Europe and Japan.

Our job and our tools are imprecise. To the third question, as I read the current Statement on Longer-Run Goals and Monetary Policy Strategy, I wonder if we shouldn't acknowledge this imprecision recognizing the good points that President Bullard made on timing. In particular, I'd suggest, like Presidents Rosengren and Mester, adopting a range for the inflation target like Canada's done, explicitly using, as they do, multiple supporting core inflation metrics, not just one, and nuancing our tone. As long as the Phillips curve remains flat, we will actually likely experience persistent small deviations from our inflation objective. So perhaps we shouldn't call out concern with small deviations as we currently do. Thank you.

CHAIR POWELL. Thank you. President Harker.

MR. HARKER. Yes. Thank you, Mr. Chair. I'd also like to thank the staff, and I look forward to seeing what comes next. So thank you. I just want to add a few comments to what's already been discussed. A lot of what I wanted to say has already been discussed.

But first, with respect to the questions, I think questions one and three are related. So I'm going to comment on them in tandem. For the most part, I think the framework has worked well in that it has provided the public with a clear understanding of the Committee's objectives, enhanced our credibility, and made the policy process more efficient. But, as others have said, in light of the current low interest rate environment and the associated asymmetries that environment engenders, I believe that the "balanced approach" language is not useful. Because of the proximity to the lower bound, we are unlikely to hit our 2 percent inflation target, on average, if we do not commit to running inflation above 2 percent when we are away from the effective lower bound. On average, inflation is likely to be at less than 2 percent, because inflation will likely run below target when we are close to the effective lower bound event.

While perhaps not resulting in quantitatively large departures from a 2 percent average, I see no benefit to engraining inflation expectations lower than 2 percent. So it may be worth communicating that the Committee is willing to tolerate, as others have said, inflation slightly above its target when away from the effective lower bound instead of using the balanced approach language.

In a low interest rate world, the balanced approach could contribute to inflation persistently running below our 2 percent objective. So approaches such as average inflation targeting and other makeup strategies would maybe help achieve our inflation objective. But I am concerned that these approaches attempt to make a credible commitment that a future Committee will act in accordance with this policy, a commitment that I believe could be hard to make credible. However, I am open to considering such policies if we could credibly deal with the credibility problem. [Laughter]

But I think that is, for me, the question for the next round of discussion. In some ways, to me, it doesn't matter whether it's average inflation targeting or price-level targeting. The real question is, can we come up with some mechanism that actually makes whatever we say we're going to do credible? So maybe just stating our willingness to run inflation above target when away from the effective lower bound would be enough, but I don't know that. I think that, for me, is the conversation I'd like to hear in the next round of this.

With respect to the second question and taking the perspective of one who was on the sidelines when the recession occurred and watched our policy evolve in an extremely challenging environment, I think, on the whole, the Committee did an admirable job in avoiding economic outcomes that could have been a whole lot worse. My take from the memo dealing with the asymmetric outcomes arising from our proximity to the effective lower bound is, as others have said, that we may wish to be even more aggressive in the future when we are at the effective lower bound. In particular, we may wish to place more weight on the probability that "star" variables have fallen by a greater amount in recent years than we would in the absence of the effective lower bound constraint. I would err on that side. We would then have to be willing to accept slightly higher inflation when away from the lower bound.

I also believe forward guidance is an important tool, and that asset purchases help communicate the Committee's resolve to keep the policy accommodative for longer than normal. I think that is a credibility issue. By engaging in asset purchases, we're credibly signaling we're going to be lower for longer. And I think the public's experience with asset purchases should only help add credibility should we have to take those extraordinary measures in the future. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. I, too, want to join others in thanking Governor Clarida for his leadership on this and the staff for what I thought was a helpful way to start thinking about this review. Most of what I've heard around the table I'm going to shorthand in my own comments here, but I'll say that I think the current framework has served us well. Particularly in that period of highly accommodative policy with unconventional measures, it would have appeared to help anchor inflation expectations and, I think, contributed to the stability of inflation during the expansion. I think it also provided transparency about how we define our dual mandate.

On the other hand, it's been less clear that the framework has been up to the task during the recent period in which inflation has persistently fallen short of our 2 percent objective while at the same time the unemployment rate has fallen below estimates of its natural rate. In these circumstances, the appropriate direction of policy has been unclear, and we struggle to explain what we mean by "a balanced approach" or "symmetry."

My own view has been that we should be willing to accept a small deviation of inflation below our longer-run objective when labor markets are tightening and economic growth is near trend. The focus on a discrete number as our inflation objective, I felt, has placed too much attention on deviations from that number without framing the context for either tolerating such deviations or expecting the Committee to respond. Of course, other members of the Committee interpret this differently. So I think we have an opportunity to clarify this aspect of the framework.

Along these lines, the staff memo argues that policymakers could have pursued greater accommodation within this current framework through increased use of forward guidance and balance sheet policy. Outcomes realized by other countries makes this less clear, and I agree with President Mester and others that we should ensure a very robust assessment of the benefits and costs as we move forward. Notwithstanding our limited experience with forward guidance and asset purchases, I recognize we may be faced with using these tools again should we return to the effective lower bound and deem additional accommodation is required.

I think forward guidance about our policy rate path can be effective in shaping expectations and providing accommodation. And though asset purchases have likely provided modest additional accommodation in some circumstances, they've also been fraught with undesirable side effects that threaten the Federal Reserve's independence and make the subsequent removal of accommodation more challenging.

Finally, another important aspect of the framework that I think is worth revisiting is the role of monetary policy and financial stability, as others have noted. The quantitative surveillance assessments we take in provide relevant insight to the nature of vulnerabilities in the financial system, but what exactly is expected of monetary policy's reactions to those vulnerabilities is an unresolved question, as others have raised today.

Across these dimensions, it will be important to achieve clarity and transparency without adding to the length and complexity of this communication device. That might argue for waiting until we complete our review before suggesting changes, and I look forward to these discussions. Thank you.

CHAIR POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Mr. Chair. I'd like to add my thanks to Governor Clarida and to the authors of the background memos for providing a comprehensive discussion of the evolving monetary policy framework and the events that led to its current form. I found the materials very helpful and thought provoking.

I'd like to make a few observations from the perspective of someone who is a relatively new participant in these discussions. We know now that our approach to monetary policy over the past decade was evolving in parallel with important underlying structural changes in the economy, including a decline in the long-run rate of unemployment, a lower natural rate of interest, and a weaker relationship between resource utilization and inflation—that is, a flattening of the Phillips curve.

Our understanding of these developments has been improved with the benefit of hindsight, and, as the staff memos show clearly, policymakers learned slowly about these structural transformations in the economy. And we're continuing to learn. Our still-imperfect understanding of these ongoing structural changes and the potential for further changes to occur limit our ability to use our past experience to inform our decisions about the policy framework.

Put more simply, the lessons of the recent past may not provide a clear roadmap for the future. In particular, both the magnitude and persistence of these structural changes seem highly uncertain. For instance, it seems possible that the factors that led to a reduction in the natural rate of interest could unwind in due course, and, if so, our focus on the implications of the effective lower bound may not be fully informed.

That said, it's worth recalling where we stand at the present time. The unemployment rate is lower than at any time since the 1960s, inflation has remained relatively close to our target by historical standards, and the financial system looks to be resilient. From that perspective at least, the current policy framework has served us quite well. Of course, there's always room for improvement, and to that end I see a couple areas where we might want to focus our efforts during this framework review.

The first is our communications. In the years since the previous recession, the monetary policy framework has evolved, albeit out of necessity, into a complex machine with multiple levers. And while, as I said, this framework has been serving us quite well, the sheer complexity of it does pose challenges in terms of transparency, credibility, and ease of communication. Even if the economy continues to perform well for an extended period of time, I suspect that our policy communications will prove to be more complicated and difficult than before. And because of that, we should use this opportunity to consider whether the various methods of communicating our actions are the best that they can be.

For instance, our current policy communications include our formal statement, the press conference, the SEP, the release of the meeting minutes, as well as intermeeting interviews and commentary. Although all of these communications provide important transparency around our decisions, I also see that the cacophony of our voices may obscure our message or lead to ambiguity or misinterpretation and unintended setting of expectations. We should look for ways to convey our collective message more clearly while still fulfilling our obligation to the public to be transparent about our actions and reasoning.

Second, and relatedly, I'd like to see the Committee reach a clearer consensus on what the goal of price stability specifically entails. In the short time I've been on the FOMC, I have observed material differences around the table in our interpretations of the 2 percent inflation target. Given a history of double-digit inflation in the not-so-distant past, should we consider inflation at its current expected level and the Board staff's estimate of the underlying inflation rate to be basically a success in achieving our goal of price stability? Or should we consider it a significant deviation from our target that we should work hard to address? And does that answer depend on where we stand with regard to our maximum-employment goal?

Inflation expectations, actual inflation, and, in fact, growth in employment can depend on what the public thinks our answers are to these questions. And so I believe our policy framework could be strengthened if we could provide ourselves and the public with more clarity on these issues. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Bostic.

MR. BOSTIC. Thank you, Mr. Chairman. I'd like to first thank the staff for a thoughtful, clear, and concise set of memos. They help sharpen the issues nicely and are well designed to create a structured approach that can help us achieve an improved framework that we all understand and can support.

In my view, the Federal Reserve's monetary policy framework has been effective in helping the Committee keep the economy close to the targets the Committee established as benchmarks for defining the achievement of the dual mandate. I actually think the essential feature of the framework is an overarching philosophy that the Federal Reserve will retain flexibility and optionality in trying to achieve its mandates. As noted in the roadmap memo, this openness to change has been a hallmark of the Fed for decades, and this has set an important expectation among households, businesses, financial markets, and policymakers that the Fed stands ready to do what is necessary to stabilize the economy and move it closer to its longer-run targets.

That said, there are some decisions that may have introduced problems. The choice of a single-point-in-time numeric target for the inflation goal may have created an undesirable situation in which the target is being perceived as a ceiling. And regarding the symmetry around the 2 percenttarget, I actually thought I knew what it was when I walked into the room [laughter], but now I think I may be confused. What does it mean to try to deliver 2 percent, on average, over time if bygones are truly bygones?

Now, I understand the appeal to symmetry, and I understand its importance for anchoring expectations. But is our stated decision rule actually in conflict with this? Or, to President Evans's point, is it even real? And I think we need to come to some clarity. I think, Governor Bowman, you were talking to this issue as well.

Similarly, the dot plot may be providing a false signal that the Committee has made some policy decisions, and these signals may now be a driver of market expectations for policy moving forward. In addition, members of the Committee have, for some time, been arguing that forward guidance should be deployed with extreme care and caution because it can potentially harden expectations and lock the Committee into policy actions that may no longer be justified by the data. Thinking is already under way on each of these issues, and there is value in developing a list of these potential problem areas and working to get to a good spot in each.

Regarding policy at the effective lower bound, I think the memos make a compelling argument that first actions are important and so should be large and have the potential to be decisive. This seems right to me. Beyond that, my view is that the appropriate course of action will be very situation-specific—which makes it hard for me to be too explicit with recommendations.

While reading the memos, a couple of issues came to mind. First, in terms of making use of commitment mechanisms, are we comfortable to commit to calling out hard targets? To the extent that we don't call out numbers, then it might be more appropriate to call this a "suggestion mechanism." And I'm doubtful that this is as powerful as a harder commitment.

The first memo made it very clear that the Committee's past use of forward guidance was pretty modest and confined to thresholds that were not likely to cause many questions about the Committee's commitment to hold steady until those thresholds were reached. For example, it seems unlikely that anyone in December 2013 doubted that the Committee would choose to hold rates steady as long as the unemployment rate exceeded 6½ percent.

An unanswered question in my mind is whether the current framework can be enhanced or deployed to better effect. If future statements like "We won't raise rates until" are tied to thresholds that seems more of a stretch. And, more importantly, should we be willing to do this? If not, that would seem to have some implications for future conversations about alternatives, which might also depend on strong forms of commitment.

Second, I was intrigued by the assertion that monetary policy is asymmetric because the effective lower bound is binding. To the extent that unconventional monetary policies are effective, then there is theoretically not a constraint at the lower bound of conventional policy.

Now, I inferred from the review of our balance sheet policies that there is some skepticism among the staff that even much larger expansions would have been sufficient to fully offset effective-lower-bound constraints. President Daly just recently touched on this and called unconventional and conventional policy tools "incomplete substitutes." The question I have is, do they need to be complete? My thinking about the adequacy of the current framework will be importantly influenced by whether or not a sufficiently aggressive balance sheet policy can, in most circumstances, mitigate the effective-lower-bound constraint. If the staff or others have more to say about this, I'd like to hear those opinions.

I also think that the material on the interaction of the effective lower bound, the flat Phillips curve, and inflation expectations is informative. I understand that the effective lower bound raises the stakes on a lot of other complications in the economic environment. But I don't think we should lose sight of the fact that the flat Phillips curve also creates problems for the case where inflation is above our target. With a flat Phillips curve and not fully rational expectations, achieving our dual mandate begins to look really challenging if, for some reason, we find ourselves in a protracted period of inflation in excess of our longer-run goal. We are right to focus on the effective lower bound, but our framework discussion needs to consider the full set of potential scenarios we might face.

In thinking about the Statement of Longer-Run Goals and Monetary Policy Strategy and its role in policy, I'd like to offer up this reflection. I think the long-run statement's greatest potential value is to articulate a reasonable guiding philosophy in an accessible way. In this sense, it should not strive to be a fully articulated policy response function. In this spirit, it could acknowledge the existence of the effective lower bound and note that unconventional policy actions will be deployed if necessary when the effective lower bound is reached. Beyond that, I think it would be difficult to say a lot more than what is already in the statement.

I recognize that a simple statement with such slight amendments will leave a lot of open questions that the Committee will have to face and make decisions on in reaching any specific policy decisions. I could go into a thorough review of these here, but my staff strongly hinted that I was already running too long. [Laughter] So, instead, I will reach out to the staff so they are aware of some of the things that are on my mind.

Suffice it to say that actual policy decisions will be dependent on the context at that time and will therefore need to be explained at that time in that light. It would not be appropriate for the long-run statement to presuppose the context that the Committee will face or to pre-commit the Committee to a subset of actions, given the many contextual permutations that are possible.

In sum, I view the long-run statement as more of a mission statement. I don't think there are obvious ways to change the statement to make it substantially more useful for understanding policy and our understanding of economic dynamics. By contrast, the framework is firmly located in the space of contextualized thinking and can be communicated through speeches, the meeting statements, minutes, conferences, and policy actions. Being clear on this distinction in function and form will be quite helpful for the Committee in executing policy moving forward.

There are two other items that were raised today that I'd like to respond to. First, I'm totally onboard with the thrust of President Rosengren's last question on the sustainability of the attainment of our goals. Sustainability is quite an important concept, as are concerns about it. Now, Vice Chair Williams offered one take on this, highlighting a distinction between structurally and cyclically low interest rates. Is this right? And is it the only way to think about this? It would be good to have the staff's thinking on this point.

And then, finally, I want to thank President Evans for raising the issue of whether we really can run the economy extra "hot," with minimal or relatively low cost. There are many communities that need the kind of policy support that this strategy would reflect, and I have been to many of them during my time in this role. Could it be that this institution has been wrong in its long-held position that monetary policy does not have distributional effects? This is a question that we would be well served to try and answer. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. I also want to thank the staff. I thought the memos were very helpful. I want to just highlight a few key points that I took away in reading the memos and then go through the questions.

First, with regard to a low-*r** environment, I thought the memos were very clear, and I agree with them—err on the side of being more accommodative rather than more restrictive and, if there's a downturn, ease early and ease aggressively.

Second, I think it's now conventional wisdom that the Bank of Japan was too timid in response to low inflation. I'm going to come back to that point.

Third, I think it's clear—to me, at least—that U.S. policy overall has been too tight in this recovery. And I'm going to parse the recovery into two segments: the period immediately following the Great Recession—the immediate recovery period—and the normalization period. I think it's been too tight in both periods.

In the immediate aftermath of the Great Recession, I think that quantitative easing (QE) and forward guidance did help deal with the limitations of the effective lower bound, but only partially, and the persistence of the benefits was highly uncertain. So I think, with the benefit of hindsight, policy in this period was too restrictive. I think we now know that QE could have been larger and forward guidance provided with a firmer commitment. There were reasonable fears at the time, because these were untested tools, of runaway inflation or what it would do to currencies. This is with the benefit of hindsight that I'm saying this. Those are not unreasonable fears, but I think that learning how it worked here and how it worked abroad means we could be more aggressive in a future downturn.

In the more recent period, I think our normalization policy of raising the federal funds rate nine times was not actually called for by our current framework because of the symmetry of our inflation target. We raised rates when inflation was always at or below our target. Optimal policy, in my judgment, has inflation and the labor market in tension. During this period, there was no tension, there was no tradeoff. Inflation was low, and there was still slack in the labor market, so this was the "free lunch" zone. So it was not the framework that limited us. It was our own implementation of that framework that limited us.

On the second question, I think our current symmetric framework can actually be very powerful with what we've learned, and we can accomplish a lot within our current framework. As I mentioned, I think we could use QE more aggressively in the future, and I think we should give forward guidance with a stronger commitment. The symmetric inflation target provides us with a lot of room to make such commitments safely. For example, I argued at the previous meeting—as I will, again, at this meeting—for us to make a commitment not to raise the federal funds rate until core inflation reaches our target on a sustained basis. That isn't calling for an explicit overshoot of the inflation target or a makeup of past inflation shortfalls, but it uses the breathing room provided by the symmetry of our target to make this strong commitment.

In addition, I think we should consider using forward guidance away from the effective lower bound. I think our goal should be to avoid the ELB in the first place. If we wait to use forward guidance until once we have hit the ELB, it strikes me as a sign of weakness, not a sign of strength. It means that we're already out of policy space, so now we're going to commit to staying in the very place we were trying to avoid. It reminds me—like, if we're driving down the road and we want to avoid driving into the ditch, but we end up in the ditch, and then we say, "Well, now I want to be in the ditch, and I'm going to stay in the ditch." It strikes me as not very credible. We're in the ditch because we can't get out of the ditch. To me, it's much more powerful if we can make the forward guidance, make the commitment, when we still have traditional policy space and when we can demonstrate we're the ones actually making decisions about the rate, not the economy driving us into the ditch—hence, my call for us using forward guidance today to commit not to raise rates until inflation returns to our target.

On the third question, I'm going to leave discussion of makeup strategies for a future meeting, and I know the staff is working on memos. The key consideration that I'm thinking of for any possible changes to our strategy statement is, how do we make it more likely a future Committee will follow through on the described strategies? As I said earlier, it's easy for us today to say the Bank of Japan was too timid. I think we're learning it's harder to walk the walk ourselves. Are there words we can write down that would make it more likely for a future Committee to actually walk the walk? I don't know. I haven't thought of them yet. As the staff prepares its analysis of potential makeup strategies, I would welcome thoughts on why a future Committee would be more likely to stick to those strategies, which will call for low rates when inflation is at 2½ percent or 3 percent, when we weren't willing to keep rates low when inflation was below target in this recovery.

And then, lastly, I just want to echo something President Evans said, which is us being explicit about the costs of very low unemployment. I think it's enormously important that we be precise, because why did we raise rates beginning in 2015? Inflation was low. We have a symmetric target, so if inflation climbed, the Committee would see it, and we would respond. The only real justification that I can come up with is that there were fears of nonlinearities in the inflation process, that all of a sudden we might get surprised or fall "behind the curve" and we would have to raise rates aggressively. Well, three years later, at least so far, those nonlinearities have not emerged. That doesn't mean they can't in the future, but so far they haven't emerged. But now people are talking about more vague notions of imbalances. And imbalances mean we can't measure it. It's like, it could be this, it could be that.

The costs to the labor market are real if we raise rates. I think we owe it to the public to be very precise on what we're trying to achieve, what these so-called imbalances really are. Otherwise, we're going to find ourselves in the same trap in which we start raising rates for some ghost that we are afraid is out there. We're not going to bear the cost of that, but the public is. Thank you, Mr. Chairman.

CHAIR POWELL. Thank you. We've got a ways to go. It's lunchtime. We're going to break for lunch here, and we're going to start again at 12:45 sharp. Thank you.

[Lunch recess]

CHAIR POWELL. Okay. We're going to start again. There are a handful of additional interventions, and then we'll have some time at the end of those if people want to just jump in and converse. So, with that, over to you, President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. Thank you, as others have said, to the staff and the Steering Committee for doing an excellent job and getting us off to a great start. I'm just going to make four or five points, particularly because it's after lunch. And let me first say, as others have said, I think we've been very well served by taking a balanced approach to monetary policy, and what I mean by that is balancing reaching the employment objective with reaching our inflation objective. I think this approach has involved a commitment to our goals but a flexibility in the tactics to achieve them, and I think, over the past 10 years, flexibility in a changing landscape has been very helpful.

I also think that this approach has required patience, particularly in all of those years when the Committee's policy rate was at or near zero, and an understanding that monetary policy acts with a lag. And I think up until recently, and I'll comment on that, this approach has been relatively well understood by the public, and the public has had a general understanding of the Committee's reaction function. And the reason I say it's "up until recently" is because I think when this Committee was not achieving either of our dual objectives, it was at least directionally—we could disagree about the ferocity—but directionally, it was clear what actions we would take.

I think it's gotten complicated as we've approached achievement of our employment objective. I know not everybody agrees we've achieved it, but, by and large, as we've gotten in the vicinity of achieving it but still run behind our inflation objective, I think it's fair to say there's been debate around this table that balance has tempered our decision on interest rates and on the balance sheet. But I also think the public now has a less well-understood grasp of our framework. And what do I mean by that? If you went out and did a poll, I would guess, of our—I can speak for my own—regional boards, business people, and consumers, they would not think that inflation somewhat below target is dangerous. I think there's an opportunity in this framework review to go back out and better define price stability and better explain why undershooting this inflation objective is potentially risky. But I don't think it's well understood right now.

I think that this balanced approach—some would argue, I know, around this table—has restrained our ability to generate higher rates of inflation. I think others, on the other hand, would argue it's helped us avoid actions that might have led us to create excesses and imbalances. And I think the debate we're having, certainly at the Dallas Fed, is: Once you've achieved full employment, are the benefits of a more singular focus on moving inflation to target or above target offset by the risks of creating undue excesses and imbalances? And I think, as part of this framework review, that is something that we're going to have to continue to debate.

That is a particular concern to me, because we believe the structure of the U.S. economy has changed over the past several years. Technology, technology-enabled disruption, and globalization have affected the pricing ability of businesses. We've talked about this before. And I think more research needs to be done to understand how monetary policy is affecting the cyclical versus the structural elements of inflation. How is monetary policy affecting headline inflation? And I would like to see us, as part of this review, do more work on that.

As to the second question here, I'm very open to exploring potential improvements to our framework and the use of forward guidance and balance sheet policies. However, like others have mentioned, I'd be very concerned about commitments to specific tactics in the future ahead of knowing the specifics of any given situation. I would be reluctant to make commitments that lead us to effectively or in part abandon our balanced approach unless we understand the specifics of the situation that we're addressing. And this is the commitment issue that many of you mentioned. I'm sure we'll wrestle with that.

Another subject I'd like to see further discussed as part of the framework review is the role of balance sheet policies: the role they play in depressing the level of market-determined interest rates and creating a flatter inverted yield curve, which I think has, in turn, limited the ability of this Committee to raise the federal funds rate and limited our ability to normalize monetary policy. I'm particularly concerned about this as we seem to be struggling, and the world seems to be struggling, to reduce the size of the balance sheet when times are good. And so, as we embark on discussions of the future use of balance sheet policies, I think discussion of their longer-term effects and limitations on the ability to normalize monetary policy later is worth examining.

Last two comments. As others have said, I do think, in our question three on our statement, I would like to see us more explicitly consider the risk of excesses and imbalances. And while you're approaching those excesses and imbalances and creating them, it seems vague as to what the risks are until those imbalances spill over, and then it becomes more apparent and, I think, ultimately can jeopardize the ability of this Committee to achieve its dual-mandate objectives. I guess, put more plainly—and I guess this is a sensitive discussion—in our efforts to extend the expansion, are we creating excesses and imbalances that ultimately imperil our ability to create sustainable full employment and price stability? And this is something that President Rosengren touched on.

I think we'd do well to acknowledge regularly that monetary policy is not the be-all and end-all of economic policy. I know we know that here, but I think, for the public, it's worth emphasizing that. There's a danger, I think, of central banks trying to do too much and being pressured to do too much and, by doing so, again, ultimately jeopardizing our ability to achieve our dual-mandate objectives. In this context, I'm very mindful of the fact that the bulk of federal funds rate increases that got us to a target range of 2¼ percent to 2½ percent came in anticipation of fiscal stimulus and in the aftermath of substantial fiscal stimulus. And so I think we'd do well just acknowledging that we are a key part of economic policy, but there are other elements that are also critical that will allow us to achieve our dual-mandate objectives. Thank you, Mr. Chairman.

CHAIR POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chair. Let me add to the tsunami of gratitude to the staff for an informative set of memos and to Governor Clarida for organizing and leading the process. As was highlighted in the introductory memo, obviously the Federal Reserve has changed its framework before, or we'd still be following the "real bills" doctrine, but not in this public and reflective and organized manner. And though, at least in my mind, it remains to be seen what, if any, changes would result from this review, the process itself is a welcome innovation, and I think it's already a success in terms of transparency and public accountability, and those are all good things.

I thought both of the key memos this round were very relevant. I was interested in what I saw as their somewhat divergent views on the effective lower bound. Now, it's entirely possible that the authors of the memos would say to me, along with T.S. Eliot, "That is not what I meant at all. That is not it, at all."

But I took away from the first memo that, with balance sheet policies and forward guidance, the Fed was able to limit many of the negative effects of the ELB during the crisis. I share what I think was President Bostic's view that whether these tools were complete substitutes for traditional policy or not, they were pretty effective and, quite arguably, effective enough. Unemployment outcomes during the recovery were not much different than in other recoveries even with the constraint of the ELB. Inflation remained relatively well anchored through the crisis and its aftermath, notwithstanding some more recent shortfalls. But, in contrast to that view of the first memo, the simulations in the second memo are based on the assumption that the ELB is a binding constraint, with the FOMC unable to pursue unconventional policies. For me, the question is, is that a reasonable assumption?

In these simulations, it's particularly important, for example, what the markets will expect the Committee to do. My assumption is that the markets expect that we would engage in further balance sheet policies if we were to hit the ELB again. And, more generally, how much of a constraint on monetary policy the ELB constitutes and what tools we might have to mitigate that constraint are essential building blocks in our discussion of frameworks.

As a practical suggestion, I think our discussion of tools—that is, the policy options available when the short-term rate is constrained by the ELB—should be as robust and prominent as our discussion of alternative frameworks. And I see several reasons for emphasizing, even making a priority of, a discussion of tools. First, a proper understanding of the policy constraints associated with the ELB is essential to evaluating the alternative frameworks, such as average inflation targeting that we're likely to be discussing. Model simulations that are based on a binding ELB constraint aren't very informative if they rule out balance sheet policies that the Committee is likely to take and that the market is likely to expect us to take if there were a severe downturn.

Second, in the current environment of a low *r** and low inflation, it's unlikely that any change in the framework would keep us off of the ELB into perpetuity. Alternative frameworks might decrease the chance of hitting the ELB but, in our current environment, probably not by much. So I view an examination of our toolkit of policy options at the ELB to be a high priority.

And, third, I worry a bit about overemphasizing the ELB as we communicate our rationale for alternative frameworks. The ELB is a constraint on one of our policy tools: the short-term interest rate. A discussion of our broader toolkit might be another way of lowering ELB-related risk by reassuring the public that we have more than one tool in our toolbox, and that the more frequent occurrence of the ELB—that, in fact, I think we would all expect in the current environment—need not result in much worse macroeconomic outcomes.

So just a word on balance sheet policies. I agree with the memo's conclusion that many of the fears that the policies provoked and that likely constrained their use during the crisis did not come to pass—not in the United States and not in the other jurisdictions around the world in which they were employed. And as President Kashkari and a couple of others around the table have said, with the costs now better understood, these policies are likely to be used more effectively during the next downturn.

Now, I fully realize that I am generally viewed as hanging with the crowd that has a quasi-religious aversion to balance sheet policies in the same way that some view a black mass—possibly effective, but dangerous for exactly that reason. [Laughter] But I'm a friendly heretic on that point. In any event, I believe that facts are facts, and the staff's work is, I think, a useful and persuasive statement of the facts. And, again, as to the questions that Presidents Mester and

Daly and others have emphasized about the complete effectiveness of those policies, I'd again emphasize that I'm inclined along the lines that President Bostic expressed of wondering whether they are, nonetheless, effective enough.

I'd add that I don't think there's any inconsistency in supporting the use of the balance sheet for the conduct of monetary policy while simultaneously arguing for the balance sheet to be kept at its smallest possible size. One reason I've advocated taking measures to shrink excess reserves rather aggressively is that I think it's important to show that expansions in the balance sheet can eventually be reversed. And knowing that use of the balance sheet as a policy tool doesn't necessitate a permanent ratcheting-up of the balance sheet is likely to increase support for its use. I think we would all agree with that.

Finally—well, maybe not quite "finally," because I've got one paragraph after this, but—so, "now" [laughter], a comment on our symmetric inflation target, which I hadn't really intended to raise, but it's principally for the benefit of the minutes, given some of the other discussions, because all of you who have heard me say this before, I think, know where I'd stand. I believe that symmetry around a range means—and if, contrary to Noah Webster and Ludwig Wittgenstein, it doesn't mean, then our policy ought to be, and we should find a word to reflect it—that we are indifferent to modest misses in either direction from a reasonable target. If our inflation target is 2 percent and inflation runs at 2.2 percent or 2.3 percent for the next 20 years in a row, I will sleep easily at night, and I can turn to finding other ways to fill the hours of the day. And if it runs at 1.7 percent or 1.8 percent for 20 years, I will do the same. Our measurement of inflation is not precise enough, our understanding of macroeconomic relationships is not firm enough, our tools are not surgical enough, and the political economy in which we operate is not constant enough to make more anally compulsive inflation targeting either effective or necessary.

Finally, on the question of how we might adjust the Statement on Longer-Run Goals and Monetary Policy Strategy in response to our uncertainty over the structure of the economy, one aspect of uncertainty that's particularly important—again, that many have mentioned—is that associated with u^*. Given this uncertainty, it would be and it clearly has been difficult to motivate policy to hit any particular u^* target, and perhaps that difficulty calls for a reexamination of the statement language on u^* to make it clearer that we are unlikely to tighten simply because u falls below u^*. Of course, that raises difficult questions of how we would respond if u were to rise above our estimates of u^*. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you, Mr. Chair. I welcome this opportunity to continue our discussion of the monetary policy framework, starting from where we left off just one year ago. I appreciate the leadership of Governor Clarida, as well as the excellent papers by the staff today, the Chicago conference, and *Fed Listens* discussions.

It is valuable to start by updating the foundational assumptions that informed the current policy framework. Three conditioning assumptions have formed my view of the new normal, which has informed my policy views over the past four years. First, we are likely to see more frequent and prolonged episodes when the federal funds rate is pinned at its lower bound. In part, this reflects an equilibrium rate that's much lower than in the decades before the crisis. We can see the evolution of that key conditioning assumption in the sharp decline in the SEP median longer-run federal funds rate, which decreased from 4¼ percent in January of 2012, similar to the average value of 4½ percent in previous decades, to our most recent estimate that's closer to the 2½ percent level.

Considering that the FOMC has cut the federal funds rate, on average, about 450 basis points in response to recessions over the past five decades, current estimates indeed suggest the buffer is much smaller at only half that amount. That is a large loss of policy space and could be expected to increase the frequency or length of periods when the policy rate is pinned at the lower bound, unemployment is elevated, and inflation is below target. In turn, those frequent or extended periods of low inflation run the risk of pulling down private-sector inflation expectations. This self-reinforcing downward spiral is extremely dangerous, as we see elsewhere. Furthermore, if recent experience is any guide, fiscal policy cannot be counted on to play a reliably countercyclical role.

Second, underlying trend inflation is mired somewhat below 2 percent. This conclusion emerges from the use of a variety of statistical filtering methods and is reinforced by a variety of survey measures of expectations, as well as market measures of inflation compensation.

Third, the sensitivity of price inflation to labor resource utilization is very low—or, put more simply, the Phillips curve is inert. A flat Phillips curve has important advantages. The labor market can strengthen a lot and pull many workers who may otherwise be sidelined back into productive employment without accelerating inflation. On the other hand, it also makes it harder to boost inflation during expansion and to achieve our 2 percent inflation objective on a sustainable basis. And that, in turn, could further compress conventional policy space in a negative spiral.

In addition, as we have seen, it means the traditional relationship between inflation and unemployment can be a very misleading guide for monetary policy, and it raises questions about the "balanced approach" discussion in our Statement on Longer-Run Goals and Monetary Policy Strategy. It's the combination of these three developments together and their implications that need to be considered in our review of the framework.

With that as a backdrop, it does make sense to review the effectiveness of our policy framework in light of the contours of today's new normal, which is considering both the reaction function that guides policy over the cycle—described in the Statement on Longer-Run Goals and Monetary Policy Strategy—as well as the adequacy of policy space to buffer the economy from negative shocks when conventional policy space alone is inadequate.

The staff memos focus on our tools as they have been used in the past and, in that sense, pick up naturally where last July's discussion left off. They raise the possibility that more could be done with forward guidance, even without going so far as to embrace inflation overshooting. Arguably, the most innovative use of forward guidance over the past decade was the adoption of an unemployment threshold in late 2012. Under that policy, the Committee pledged not to raise the funds rate at least as long as the unemployment rate remained above 6½ percent. In the end, the Committee didn't raise the funds rate until unemployment had fallen to 5 percent and, in fact, didn't raise the funds rate again after that until it had reached 4¾ percent. I think this episode, more than anything else, illustrates the risk of relying on an unemployment target alone when estimates of maximum employment change with the contours of the economy, and the conventional implications for inflation through the Phillips curve are inoperative. In short, even when employing and then relaxing threshold-based forward guidance, we lifted off too early because of faulty assumptions based on historical relationships.

Our discussion last year suggested that a threshold based on inflation might be effective at stabilizing an economy with limited conventional policy space. Even without formally committing to overshooting or a makeup policy, it is likely, given the usual lags in the economy, a 2 percent inflation threshold would, in fact, lead to some overshooting.

All told, even under very strong assumptions about the predictability and credibility of an inflation threshold policy combining asset purchases with forward guidance, the combined effects of these policies, at least in the analysis, turned out to be less than satisfactory. For this reason, it's important to cast our net more broadly as we consider the range of options for dealing with the loss of conventional policy space.

I look forward to future consideration of a range of policies—in particular, policies that seek to make up for a protracted shortfall from our objectives during a lower-bound episode. The literature suggests that such policies can be particularly effective in addressing the lower-bound constraint. Although they sound very appealing on their face, they have not yet been implemented in practice, and there is some skepticism that any central bank would, in fact, prove able to support above-target inflation over a sustained period without becoming concerned that inflation might accelerate and inflation expectations might rise too high. We're going to need to closely analyze the requirements for credibility to see whether such policies in fact could be implemented in practice.

Beyond that, to the extent that there is likely to be an enduring compression in the average size of our monetary policy buffer driven by an enduringly lower neutral range, it would seem irresponsible not to at least consider the pros and cons of raising the inflation target to compensate by a modest amount. I wouldn't be inclined to consider a move to a 4 percent target, for instance, but I think it would be valuable to discuss the risks and advantages of considering a move to a more modest and perhaps more achievable range, perhaps 2½ to 3 percent.

In fact, average inflation targeting may not look very different from a modest increase in the inflation target to most households and businesses of the sorts that were represented in our *Fed Listens* panels. For instance, if we were in an average inflation-targeting framework today, how would we be talking about our inflation goal? Wouldn't we be saying that we're targeting average inflation of 2½ percent over the next five years in order to achieve our long-run average inflation goal of 2 percent after many years with inflation averaging around 1½ percent? In this case, after several years of successfully achieving inflation of 2½ percent in order to make up for those past misses, we might want to simply lock in the modest increase in our buffer in a policy that might be akin to opportunistic reflation.

In addition, the staff analysis of last year demonstrates that threshold-based asset purchases can help improve the effectiveness of monetary policy to the extent that the public anticipates asset purchases will be triggered as soon as the lower bound is hit and maintained in an open-ended commitment until the thresholds are achieved. To me, this point is really important. If, instead—as has been the case in every advanced economy that has employed some form of asset purchases—there is uncertainty about the conditions that might trigger those purchases and how long they would be sustained, this undercuts the efficacy of those policies. And long delays in the deployment of asset purchases, perhaps because of perceived political risks, add to the public's uncertainty.

To avoid the lumpiness and resulting uncertainty associated with starting and stopping balance sheet policies, I remain interested in exploring policies that could extend quasi-conventional policy space more smoothly and continuously by focusing on interest rates, rather than quantities. In particular, once the overnight policy rate reaches the effective lower bound, we could push rates down by progressively moving out along the yield curve in the one-to-two-year horizon. Such progressive yield curve policies would keep the focus on our traditional tool—interest rates rather than quantities—and could be initiated and wound down smoothly and in a way that reinforces forward guidance. Of course, in the event of a very severe financial shock, such a policy could be augmented with limited purchases at the 10-year horizon, but I would anticipate those would be more limited in scope and duration.

Finally, the staff asked us to consider ways in which the Statement on Longer-Run Goals and Monetary Policy Strategy should be modified. There is an important sense in which this discussion is premature. Nevertheless, I'll give a few quick answers. Yes, the statement needs to be updated for the key features of the "new normal." Yes, we need to address the nexus between financial stability and monetary policy and, in turn, between monetary macroprudential and structural policies. But, finally, changes to the statement will be necessary but not sufficient. Just as the Committee has augmented the Statement on Longer-Run Goals and Monetary Policy Strategy with principles and plans for deploying various policy tools, so too it may be desirable to indicate to the public in peacetime what our actions might be in the event of a future recession.

Indeed, the policy review presents a very nice opportunity to sketch such plans with reduced risk that doing so might be signaling concerns about elevated recession risk. Laying out our plans in general terms for, for instance, average inflation targeting or moving out the yield curve well ahead of time may prove useful in reducing uncertainty about what our actions would be. And that reduced uncertainty, in turn, could help limit some of the decline in household and business sentiment that typically occurs during a recession, perhaps reducing the severity of the downturn. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. And thanks to the staff for a great analysis and memos and presentations, and thanks to everyone for a really excellent round of comments. I'll offer just a few thoughts here as we begin this series of meetings. First, for me, the proximity to the effective lower bound and the implications of that together represent the preeminent challenge to monetary policy in this era. For starters, we'll find it challenging to respond to even a typically sized downturn. The downward drift in the neutral rate limits space for conventional policy, and the efficacy of what we have been calling "unconventional tools" is, as we go forward, an open question.

My own view is that quantitative easing (QE) and forward guidance provide a meaningful support for demand, but they are not perfect substitutes for traditional tools. It's also possible that future rounds of QE will be less effective than in the past, especially if Treasury yields' term premiums remain compressed. A lot of the studies that show high efficacy of QE depend on QE1, which was a surprise. If policy is really about moving expectations, I think there are real questions about the efficacy of it, which is not to say that we won't use it aggressively.

In addition, the flat Phillips curve makes running a "hot" economy less effective at boosting inflation. Inflation shortfalls that persist even in a robust economy could lead to a difficult-to-arrest downward shift in inflation expectations, especially if a recession hits us before we achieve our target. Core inflation has been running below 2 percent for a long time. If the economy falls into another drawn-out ELB episode with dulled tools and a flat Phillips curve, inflation expectations could easily slide further, and the vicious cycle will continue. We may find ourselves on the disinflationary road a couple of decades behind Japan and a few years behind the euro area—a road that is hard to exit. Better to fight now to avoid getting on it in the first place.

The U.S. experience proves that ELB episodes are not necessarily economic black holes from which there is no escape, but the climb out can be prolonged and painful. More broadly, in this world, I suspect that the consequences of overly restrictive policy are now more painful and persistent than those of overaccommodation. That was obviously not the case during previous eras, such as the Great Inflation, and I'm not under the illusion that this is a permanent state of affairs or that it is not possible that pursuing this insight beyond its useful boundaries could cause trouble.

As some of you have pointed out, there's also a risk that using monetary policy to push sufficiently hard on labor markets to lift inflation could encourage destabilizing excesses in financial markets. We have nonmonetary policy tools to address financial stability: among them, high through-the-cycle capital and liquidity requirements and stress tests. And I think most circumstances warrant relying on those more targeted tools before putting the brakes on the real economy.

Uncertainty about key values, such as u^* and r^*, and about the slope of the Phillips curve has always presented challenges for the conduct of monetary policy. But proximity to the ELB imbues old issues with greater significance. That is why now is the perfect time to be conducting a review. As Governor Clarida highlighted, we're going to examine the tools deployed over the years, the "bygones are bygones" approach that we have used, and the Statement on Longer-Run Goals and Monetary Policy Strategy. That document was agreed to in January 2012, a few months before I joined the Board and just after many fierce battles over the language. I witnessed and took part in a few of the final skirmishes in my early years. And, since then, peace broke out. Not much changed. We tend to vote on it unchanged each year. And I'll just say that those battles, for me, helped focus attention on the key issues that are embedded in the document, and I find that I've returned to it time and time again over the years to help me think about our framework. And I think those of us who weren't here then will find that it's quite a useful document. I think fixing the longer-run statement—or amending it, if you will—is necessary. I'm not under any illusion that it would be sufficient.

Regarding our framework, clearly, it did serve us well. Equally clearly, we now know that we could have been, in hindsight, much more aggressive. And I think we will be in the future. I think the idea that acting preemptively to gathering weaknesses is a good idea, and I think we'll do that. But that doesn't in any way, to me, undercut the broader point that this new world that we've been living in now—really, for 10 years of low r^*, low u^*, flat Phillips curve, a proximate effective lower bound, centrality of inflation expectations, usefulness of unconventional monetary policy, the financial stability implications of that—all of those are, effectively, new, since 10 years ago, and we haven't really grappled with them. That's why this is such a great time for us to be doing this, a decade after the crisis, and doing everything we can to formally incorporate that into our framework.

My last thought would be, I think the process of thinking about these changes and then implementing them needs to be careful, deliberate, and patient. I think this is not something that we should be working to a hard deadline on. Think about how long it took for inflation targeting around the world to become the norm. And I think we found this over the years on many issues, when we take our time and let issues steep a little bit and come back to them again. I'm not suggesting we spend the rest of our careers on this [laughter]—it begins to sound that way—but I don't see next January as a hard stop. I see us getting this done when it's ready to be done.

And, with that, I will stop. As I mentioned earlier, if anyone would like to offer comments or reactions to this broad set of topics, we'll have a time of just open comment. President Daly.

MS. DALY. I just had two things that maybe are "asks" of the staff or for consideration for further discussion. The first one is on this notion of an "incomplete substitute." President Bostic and Governor Quarles both picked up on this idea; you never know what's going to be picked up in your statement. So I don't think there's a big disagreement between us that an incomplete substitute is still a good tool. The question that isn't really covered in the memos that we saw so far is, how incomplete are they going to be? And so even as the Chair just mentioned, even when you look at the episodes after the financial crisis, there's quite a bit of difference both in how researchers interpret any one QE movement, but also how effective they were as we got out of dysfunctional financial markets and into more functioning financial markets. So I think additional work on that—or at least a survey article or survey memo that talks about those differences that we've talked about before—would be helpful, because then we know what we're deciding on. How incomplete are the tools?

The second thing I want to ask about is in this discussion of target ranges for inflation where you're thinking about 1.5 percent to 2.5 percent. Vice Chair Williams started his remarks by saying that we're going to be in a situation in which the bias is all in the negative shocks to inflation, and you could end up with average inflation running lower simply because we're close to the ELB. If that's the case, and we're in a 1.5 to 2.5 percent range—I was trying to parse this out—it's a little bit like we're deciding that it's okay to have a buffer that's 50 basis points lower than the one we decided on. That leads me to wonder, could we go back—I know we're not talking about changing 2 percent—and recirculate some of the memos and things that were used in the deliberations when 2 percent was decided as the sufficient buffer, and there was an unwillingness to go to 1.5 percent because we thought that 1.5 was just too dangerously close to 1 percent. I think that's part of level setting, especially for people who haven't been on the Committee and been part of that discussion. And if those values have changed, we should know it, but if they haven't changed, it's also good to reaffirm them.

CHAIR POWELL. Thank you. President Rosengren.

MR. ROSENGREN. It was a really interesting discussion. I think one of the challenges is, there's a disagreement about the current framework, and until we get agreement on the current framework, it's hard to talk about the future framework. What do I mean by that? I'd say the people closest to the Federal Reserve flag are emphasizing the word "symmetric" in our statement, and the people closest to the map—this is a gross generalization—are emphasizing the words "balanced approach" in what they're thinking.

Let me give a concrete example of how that would manifest itself. Those that emphasize "symmetric"—let's say that you know with certainty that there's no financial stability concerns whatsoever, and one year from now you're going to be at 1.9 percent on both core and total inflation, but you're going to be slightly below what you think the natural rate of unemployment is going to be. Those people closest to the flag seem to think that "symmetric" means that, in that case, we might want to ease, because we're below 2 percent. Those people closest to the map seem to say, "Well, inflation and unemployment are basically balanced and close to their target. We don't have much of a need to do something."

That challenge carries itself when we go forward. To give an example, a bunch of the people who are closest to the map thought that a range might make sense. Now, different people in this group probably have a different concept of what that range means. Jim Bullard, for example, highlighted that he thought it means we would focus on 1½ percent. If it's 1½ to 2½ percent, and the way you thought about it was when you're at or near full employment, you actually want to be between 2 and 2½ percent, realizing that when you're at the lower bound it's going to be hard to prevent inflation from drifting down, and you're probably going to be 1½ to 2 percent. And so a range actually gives you the flexibility to try to, on average, get to 2 percent without having some of the time inconsistency problems that would otherwise occur. But whether you think that's a good idea or a bad idea is, in part, dependent on whether you are a "symmetric" person or a "balanced approach" person.

So I do think maybe thinking a little bit more about the current framework would help us think about what that future framework ought to be, because we do get different policy conclusions from the exact same kind of set of facts with the current framework. I thought that might engender a few hands. [Laughter]

CHAIR POWELL. Vice Chair Williams.

VICE CHAIR WILLIAMS. Well, I think that's a very constructive comment, but I think our current Statement on Longer-Run Goals and Monetary Policy Strategy is inconsistent. I think there's a logical breakdown that we currently have, and that's why the statement you just made couldn't be true, because some people are reading the right column and some people are reading the left column. I think it's a logical kind of a problem, and it's because of the lower bound. So I don't think it's about choosing which side. It's that there's an inconsistency in the statement.

We had the range debate before, a long time ago. I do think, when you talk about time inconsistency, it isn't solved by changing the words. It's solved by the willingness of those who say what you just said—that, in good times, we're going to shoot for inflation at the high end of the range. The Committee would carry out policy consistent with that and do that, and then knowing that when you're in recession or periods of negative shocks, there could be the low end.

I think that's really the debate we're having. Would this Committee commit to shooting for the upper end of the range during expansion, like in a time, conceptually, like today? And I think that's really what we're talking about. Calling it a "range" doesn't solve that problem. What we have to have is very clear communication amongst ourselves and externally that that's what we would mean by the range, and that's the same, in ways, as some versions of average inflation targeting.

CHAIR POWELL. President Bullard.

MR. BULLARD. Yes. I'm happy to weigh in on this a little bit. I think the range debate comes down to the question of whether the range indicates a range of inaction. So if you listen to Governor Quarles very articulately saying, "Well, you can't measure inflation that closely anyway, so why are you trying to split hairs over a tenth on the inflation range?" then I'm very sympathetic with it, and I think everybody would be very sympathetic with it. But if you have a range, everyone's going to know what the midpoint in the range is. So are you saying you're not going to take any action if inflation is in that range, or are you saying you're going to take some kind of mitigated action or lighter action, which I think is implicit?

But you've already got quadratic loss functions there. So you're probably not going to do very much at 1.9 percent, whereas when you're at 1.4 percent, more alarm bells might go off. Or at 2.6 percent, alarm bells might go off, and you say, "We've got to get more aggressive here." At least my reading of the literature on this is that maybe it doesn't help that much to say things are in a range versus a point, because you've got these issues about what you would do inside the range, just like John was saying.

To me, the biggest issue is, is the Committee or are any of these central banks around the world going to be complacent about low inflation in an environment in which these countries have gotten stuck in these low interest rate, low-inflation worlds? And I think there was a time—I think there were people on this Committee who felt that the only goal was to keep inflation low, and that inflation's a teapot—the only problem that you could ever face is that the teapot boils over, and so the only thing that you're trying to prevent is inflation from getting high and variable the way it was in the 1970s.

And that informed a lot of central bank thinking for decades, but, boy, the past decade has turned that around. And as Chair Powell just said, the problem of our times is that there's a problem on the low side as well, and you can't be complacent about low inflation or you might get stuck in this trap. So I guess that's a long-winded answer, but I don't think that the "zones" argument is going to solve this problem. I think it's very much a commitment issue, like John has said.

CHAIR POWELL. President Barkin.

MR. BARKIN. I was really struck by the point that President Evans made on, what if you just assume there's no Phillips curve? What do we do? And part of the reason I was struck by that is, I do think there's an implicit assumption in a lot of the strategies that if we go low with the path of interest rates, it'll drive inflation higher. And you could argue that—I'll take Europe, but maybe Japan—they've gone low, really low, for a long time and haven't driven inflation higher. So I'd love to find some way, as we do this conversation, just to explore those stories in a little more depth, because I know it was a thought experiment, but it's a really powerful thought experiment, and I think we ought to think about what we're doing in the context of that experiment.

CHAIR POWELL. Let me add, I was also struck by that and by President Bullard's comment that the effective lower bound can be a bit of a roach motel. It's an unstable equilibrium, in a way—after an amount of time, it just affects thinking. More thinking on that front. Any other comments in this impromptu segment? [No response] Okay, well—

MR. BULLARD. I'm sorry, I do. I don't know if we could follow up a little bit on Governor Brainard's comment that we have our Statement of Longer-Run Goals and Monetary Policy Strategy, but then at times we have supplemented that with other types of statements. One was exit principles, and then revisions to the exit principles. Could we do something like that? And might that be a good way forward here, to provide a better summary of all of the thinking of the Committee and maybe better guide expectations about what we would do in a future downturn?

I'm not saying I know the pros and cons of this, but is this something we could think about and consider? Because otherwise we're going to get down to the Statement of Longer-Run Goals and Monetary Policy Strategy, as I was saying in my comments, and it's just going to be a few words or a few phrases, and that seems like a very, very tough order—to summarize a huge body of literature and then bring it down to just a few words in a long-run statement.

CHAIR POWELL. President Bostic.

MR. BOSTIC. Yes, I agree with that. I actually think we should rename this document—take the word "strategy" out and put "philosophy" in. "Strategy" is super complicated. It's got a lot of detail. It's got a lot of context. I thought the goal of this was to present something that was easily accessible for regular people—it wasn't going to get their eyes to glaze over in all of the details. I think the approach taken, the internal conflicts notwithstanding, is the right approach for that type of document. And then it may be that we have a separate series of documents that detail each of the tools that we might use and then have another section where they interact and all that kind of stuff. I think that gives us the space and the latitude to be as thorough as we need to be to try to articulate what we're doing in a clear way.

CHAIR POWELL. President Evans.

MR. EVANS. First off, I'd like to thank President Rosengren for explaining why the flags are so important. [Laughter] More insightful comments I wish I had made myself.

I would like to say that I'd like to live in the world that Governor Quarles described. I would have no difficulty with either of those situations either or even flipping a coin between whether or not it's 1.7 percent inflation for the next 20 years or 2.3 percent for the next 20 years.

What worries me and, I think, is surrounding so much of our conversation is, what happens in the event where something pushes us into the other situation? And the way I think about this struggle is, how do we demonstrate to the public how we will behave during some future period that we have not collectively, as a Committee, acted upon? And I think previous Committees struggled with that in 2010 and 2011 and 2012, and that's when we find out what we're really thinking about, to the extent that we can lay the groundwork to make those decisions better or do that. But it's not the 1.9 percent inflation *per se* that bothers me so much, it's the implication for our future actions. Thank you.

CHAIR POWELL. President Kaplan.

MR. KAPLAN. Just on those points—and it may be heresy to say, but—I think the public understands the risk of high inflation, I think the public understands why not being at full employment is bad—they understand why both of those are negative. I don't think the public understands why 1.6 percent inflation is dangerous versus 2 percent. I think we may need to do more. I think we understand, around this table—although there are different points of view—the risks. I think we've lost people, maybe a little bit more than we realize, explaining the risks of these persistent misses on the low side—I think we can do more to explain it, but I think we'd be well served to explain it as we roll out this new framework and explain our reaction function, because I think we've lost people a little bit on that. That's my observation.

CHAIR POWELL. Okay, great. Thanks, everyone, for a great round of comments. All right. And now to the Desk presentation. Lorie, over to you.

MS. LOGAN.[3] Thank you, Mr. Chair. I'll be referring to the handout titled "Material for Briefing on Financial Developments and Open Market Operations." Over the intermeeting period, financial market developments reflected shifts in expectations for monetary policy in response to central bank communications, trade developments, and U.S. economic data that were seen as pointing to continued moderate growth and low but stable inflation. As shown in the shaded area in panel 1, U.S. equity prices rose over the period to reach new nominal highs. Policy-sensitive interest rates, with the two-year Treasury yield shown here, experienced some volatility but, on net, were little changed.

In my briefing I'll explore three questions, outlined in panel 2, before turning to a discussion of money markets. First, how have market participants' expectations for monetary policy evolved in the United States and abroad? Second, how have those shifts in policy expectations affected financial conditions? And, third, how have market participants' views of global risks changed?

Starting with the first question, since the previous meeting, there has been a significant convergence in policy rate expectations. Panels 3 and 4 depict the distribution of Desk survey respondents' modal forecasts for the target rate following this meeting and at the end of this year. In panel 3, the blue bars show that nearly all respondents from the July Desk surveys have a modal forecast of a 25 basis point cut at this meeting, a substantial shift from the June surveys, shown in red, when a significant majority had a modal forecast for no change. Nonetheless, survey respondents note some residual uncertainty about the degree of easing at this meeting and, on average, put nearly a 20 percent probability on a 50 basis point reduction in the target range.

Survey respondents' modal target rate projections for year-end 2019 have also coalesced, as shown in panel 4. In the June surveys, again shown in the red bars, views were split almost evenly between those expecting two cuts in 2019 and those expecting none. In the July surveys, shown in blue, roughly two-thirds of survey

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

respondents have modal projections for two 25 basis point cuts to the target range in 2019.

On panel 5, while most respondents now have similar modal projections for the target rate at the end of this year, a fair amount of uncertainty remains in respondents' views. The average of respondents' probability distributions shows substantial weight on a range of outcomes. Some survey respondents note that risks associated with trade developments and the global economic outlook are influencing the uncertainty around their forecasts. Some also cite a perceived divergence in views among Committee members, as well as a shifting interpretation of the Committee's overall reaction function. Respondents cite these latter two issues as influencing their rating of the effectiveness of FOMC communications, which fell from the June to July Desk surveys.

Current market pricing appears broadly consistent with the survey "takeaways." Federal funds futures imply 30 basis points of decline in the effective rate following this meeting, potentially reflecting some possibility of a cut larger than 25 basis points. Federal fund futures imply 46 basis points of cumulative declines by the September FOMC meeting and 67 basis points by year-end. So although the rate path implied by the median of survey modal forecasts has 50 basis points of total cuts through the year-end, as noted in panel 4, market pricing suggests some possibility of more extensive cuts and, to some degree, may reflect negative risk premiums.

One area of the survey in which views do not appear to have coalesced is around expectations for near-term balance sheet policy. As shown in panel 6, of the respondents who expect a rate cut this week, around 40 percent expect the Committee to stop portfolio runoff at this meeting. Some of those respondents attributed their views to communications by FOMC members who were perceived as expressing a preference to avoid balance sheet and interest rate policy working at "cross purposes." Market participants almost universally noted that the direct economic effects of ending runoff at this meeting would be small. However, some noted that such a decision could have a policy-signaling effect, although they also noted the move would be interpreted in the context of other policy actions and communications.

On this point, panel 7 on exhibit 2 summarizes survey respondents' expectations for communications in the statement and press conference tomorrow. Respondents generally expect limited changes to the statement language. Most indicate expectations for the statement to continue to reference uncertainties around the outlook, and many expect it to indicate that the Committee will "closely monitor" incoming information and "act as appropriate." In the press conference, some respondents expect the Chair to characterize any cut to the target range as precautionary in nature, in light of global risks to the outlook for the U.S. economy and low inflation.

The recent moves in expectations for near-term domestic policy come amid a global shift toward more accommodative monetary policy. Panel 8 shows the GDP-weighted average policy rate for the rest of the world. Market expectations of future policy rates have been declining since late last year. But actual policy rates have followed more recently. The central banks in Australia, Indonesia, Korea, Russia, South Africa, and Turkey are all easing over the past month, and a number of others are shifting to an easing bias.

Market participants have been particularly focused on a perceived shift in stance from the ECB. At its meeting last week, the ECB Governing Council restored its easing bias for policy rates and further emphasized the symmetry of its inflation goal. It also tasked the staff with examining various easing options. This announcement reinforced widely held expectations for a 10 basis point cut to the deposit rate in September and a new round of asset purchases beginning in December.

Nonetheless, market contacts continue to express some questions about how effective prospective easing measures will be at boosting inflation, particularly in the euro area. As shown in panel 9, while there has been a small uptick in far-forward inflation compensation in the United States and euro area, these measures remain near recent lows in the United States and near all-time lows in the euro area.

I'll now turn to my second question: How have these changes in policy expectations affected financial conditions? Many contacts note that expectations for more accommodative monetary policy globally, particularly from the FOMC and ECB, have played a strong role in supporting financial conditions and likely offset some of the imprint on the global growth outlook made by trade tensions and other risks. Panel 10 shows the rebound in global equity indexes that came alongside the more accommodative shifts in policy expectations in the United States and abroad this year. These indexes reached all-time highs over the intermeeting period.

The shifts in policy expectations in the United States and abroad have also affected currency markets. Though the turn in FOMC policy expectations this year has led to some depreciation in the dollar, these pressures have been offset in part by further signs of weak growth and increased prospects for easing abroad as well as continuing positive U.S. yield differentials relative to other advanced foreign economies. As shown in panel 11, the trade-weighted dollar has fluctuated in a relatively narrow range so far this year after appreciating notably in 2018.

Against this backdrop and amid a recent pickup in commentary on the dollar and other steps by the U.S. Administration, the possibility of U.S. foreign exchange intervention to weaken the dollar has emerged as a topic of discussion among investors. While intervention is generally characterized as unlikely and as not contributing to recent price action, the perceived probability of intervention has been rising, and market participants are highly attentive to this topic.

I now turn to the third question: How have market participants' views of global risks changed? Reduced concern among market participants about some proximate risks has also supported risk asset prices. Following the G-20 meeting in late June, some respondents to the Desk surveys pared back their modal forecasts for further escalation in U.S.–China trade tensions. Most survey respondents now expect that current tariffs will remain in place for some time, as shown in panel 12. The White House and the Congress also appear close to agreeing on a budget and debt ceiling deal. In addition, market participants noted that the rebound in the June employment report and June CPI, as well as stronger consumer demand in the second quarter, prompted a slight reassessment of the risks to the U.S. growth outlook.

That all said, contacts continue to note that some significant downside risks remain. Survey respondents still see U.S.–China trade risks as skewed to the downside, and many of China's longer-term challenges remain, with the recent restructuring of two small Chinese banks highlighting funding market vulnerabilities. Elsewhere, the likelihood of a no-deal Brexit has risen to perhaps its highest level, according to some contacts, with the pound sterling having depreciated notably since the appointment of the new British prime minister. This all leaves some contacts wondering if market participants are complacent about underlying risks or placing too much faith in central banks' ability to address risks through accommodative policy.

I'll turn now to recent money market developments, summarized on panel 13 of your third exhibit, and conclude with two operational updates. Over the intermeeting period, money market rates were slightly more elevated, reflecting the continuation of a trend of higher rates relative to IOER. As shown in panel 14, the effective federal funds rate, shown as the dark blue diamond, averaged 5 basis points above IOER, and the secured overnight financing rate, or SOFR, averaged 9 basis points above IOER, shown by the pink diamond.

Unsecured money market rates also displayed somewhat greater day-over-day variability. As shown in panel 15, the spreads of the effective federal funds rate and the median Eurodollar rate relative to the IOER rate have become more variable as rates have risen above IOER, with a notable pickup in daily changes since late March. The range of rates traded in unsecured markets within each day has also widened, as depicted in panel 16, which shows the average daily interquartile range of federal funds and Eurodollar trades relative to the median rate.

Market participants have focused on two drivers of these dynamics. First, they have attributed fluctuations in the effective federal funds rate primarily to pass-through from elevated repo rates. As shown in panel 17, the effective federal funds rate, shown in light blue, has tended to rise and fall with secured rates, shown here with SOFR in dark blue. This pass-through also contributed to the higher dispersion in unsecured rates within each day that I showed in panel 16, reflecting more competitive conditions in the morning when lenders have the option to allocate to repo followed by lower rates in the afternoon when lenders have fewer options. Market participants continue to attribute higher repo rates to the high level of Treasury security issuance in an environment of elevated dealer inventories of Treasury securities. These inventories, shown in panel 18, are concentrated mainly among a handful of primary dealers that are reportedly facilitating customer demand to acquire Treasury securities in an environment of expectations for declining yields.

Second, market participants note that the gradual increase in unsecured rates is occurring against the backdrop of a long-run trend toward lower reserve balances. Over the intermeeting period, the level of reserves was little changed on net. However, it's fluctuating around multiyear lows, and some market participants have made the association between the gradual increase in unsecured rates relative to the IOER rate and the declining reserves since SOMA redemptions began, as shown in panel 19. Panel 20 shows a longer-term trend in this relationship, with the level of reserves plotted against the spread between the effective federal funds rate and the IOER rate, broken into three time periods: January 2010 to September 2014, when the balance sheet was growing, in gray; September 2014 to October 2017, when the balance sheet was held constant, in red; and October 2017 to now, when the balance sheet has been declining, in dark blue—the same data as I showed in panel 19.

Of course, these charts just show that the trends in reserves and the EFFR–IOER spread were coincident—other underlying drivers could be at work. For example, as I noted, during this recent period there were also sizable increases in Treasury debt issuance and associated upward pressure on bill yields and repo rates, which may have been contributing factors to the higher effective federal funds rate. Nonetheless, analyses conducted by staff at the Board and in the New York research department show a small but statistically significant negative relationship between changes in the spread between the volume-weighted average federal funds rate and the IOER rate and changes in reserve levels, which may provide some evidence of a modest slope in reserve demand at current levels. The presence of this small negative relationship, or "gentle slope," is robust over recent years, even accounting for the potential influence of other factors, such as changes in repo rates.

Panel 21, which we've shown variants of at previous meetings, depicts this relationship in a simple plot showing daily changes in the level of reserves against changes in the spread of the volume-weighted average federal funds rate to the IOER rate since October 2017. This chart and staff analysis use the volume-weighted average federal funds rate because it moves in smaller increments and is more sensitive than the effective federal funds rate, which is the median. These analyses suggest the slope is currently small—in the most recent data, it's less than 1 basis point per $100 billion of reserves.

As we look ahead, the level of reserves as projected in the light blue line in panel 22 shows a decline to between $1.2 trillion and $1.3 trillion in December, the lowest reserve level since early 2011. Should the debt ceiling impasse be resolved this week, it's expected to lead to a more gradual increase in bill issuance and TGA balance in the coming months than if the impasse had extended further. This has the effect of lowering forecasts of the level of reserves into September but smoothing the pace of reserve decline over the remainder of the year. Even with the expected more gradual increase in Treasury bill issuance and rise in the TGA through the third and fourth quarters, there is still likely to be modest upward pressure on bill yields and other money market rates over the coming months.

These are just indicative forecasts and are subject to change. In fact, the Treasury's refunding announcement late yesterday means we will likely be revising our projected year-end reserve level lower, as its guidance suggested $100 billion more in TGA balances than we had assumed in the forecast that I showed today. Conversely, were the Committee to conclude balance sheet runoff as of August 1, this would shift the schedule of projected reserve balances higher by about $70 billion, the difference in the projected redemptions of SOMA securities holdings. The red line in panel 22 shows the implication of this difference for reserve levels based on the forecast made before the Treasury's refunding announcement late yesterday.

Taking all of this together, the staff will continue to monitor the outlook closely for signs that rising repo rates or the ongoing decline in reserve levels are putting additional upward pressure on the effective federal funds rate or resulting in higher variability in the rate.

Regarding operational updates, as noted at the previous meeting and as shown in panel 23, with Treasury yields remaining at lower levels and MBS prepayments remaining high, the Desk continued to reinvest agency MBS principal payments over the intermeeting period. Based on current market rates and prepayment forecasts, the Desk expects to continue to reinvest modest amounts over the coming months.

Separately, as discussed in the memo circulated before this meeting, the Desk plans to resume CUSIP aggregation of SOMA holdings of Fannie Mae and Freddie Mac agency MBS to reduce administrative costs and operational complexity and expects to release a statement in August with details on the aggregation strategy.

Finally, our plans for upcoming small-value exercises are summarized in the appendix. Thank you, Mr. Chair. That concludes my remarks, and we'd be happy to take questions.

CHAIR POWELL. Thank you. Any questions for Lorie or Patricia? [No response] Seeing none, we need a vote to ratify the domestic open market operations conducted since the June meeting. Do I have a motion to approve?

VICE CHAIR WILLIAMS. So moved.

CHAIR POWELL. All in favor, aye. [Chorus of ayes] Thanks very much. Next we'll turn to the review of the economic and financial situation. David, would you like to start?

MR. LEBOW.[4] Thank you, Mr. Chair. I'll be referring to the handout titled "Material for Briefing on the U.S. Outlook," and there's also a separate handout showing this morning's data on PCE prices, which I'll come to in a few minutes.

Panel 1 summarizes the near-term GDP outlook. As you can see in row 1, the BEA's advance estimate for second-quarter GDP growth was 2.1 percent, which was a little below our Tealbook estimate of 2.5 percent. Friday's release also included historical revisions to the GDP accounts. And though real GDP growth was about unrevised, on average, over the past five years, growth was revised down in 2018. In 2019:Q1, GDP growth was unrevised at 3.1 percent.

Despite the modest downward surprise in second-quarter GDP growth, we saw Friday's report as a small positive for our outlook on net. The downward GDP surprise occurred in spending categories that typically provide relatively little signal about future growth, and the report also included a sizable upward revision to household income so far this year, which led us to nudge up our projection for consumer spending in the second half. Thus, we now project real GDP growth of 1.9 percent in the second half, a bit above the Tealbook projection.

We continue to think that GDP growth in the first half of this year was boosted by transitory factors, and we project a slowdown in the second half as these dissipate. The spending components contributing to that slowdown can be seen in panel 2. As you can see from the gray portion of the bars, government spending made an unusually large contribution to growth in the first half, as there was a surge in construction spending by state and local governments. We expect this spending to ease off, although, admittedly, the timing is uncertain. We also expect inventory investment, shown in yellow, to slow further from a level that is still somewhat elevated. However, as shown in blue, growth in private domestic final purchases—that is, consumer spending, business investment, and residential investment—is not projected to slow in the second half. We do expect business investment to weaken further, as we discussed in a box in the Tealbook. However, we anticipate that the slowing in investment will be largely offset by a pickup in housing activity, driven by the decline in mortgage interest rates since late last year. And as I noted, we have nudged up our projection for consumer spending in the second half, but we still expect PCE growth to be about the same as its average pace in the first half. In 2020, not shown, we still project GDP growth to remain a little above potential and then to slow a little further in 2021. Thus, our baseline outlook for real activity remains generally favorable. It is also a little stronger than in the June Tealbook, with the upward revision mostly reflecting the incoming data on spending and income.

The recent labor market data have remained solid, though the pace of improvement has slowed relative to last year. BLS's estimate of private payroll employment, the red line in panel 3, rebounded in June after a weak reading in May, and the three-month moving average of private job gains stood at 156,000 in June—down noticeably from 2018's average pace of 215,000 jobs per month but still above

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

the pace to keep labor utilization constant. This stepdown is also evident from the blue line in the panel, which plots a series that pools BLS's estimate of private payroll gains with our translation of the firm-level data collected by the payroll processor ADP. As you can see from the black line, the available ADP data for July suggest that private payrolls rose 135,000 this month. We get BLS data for July this Friday. Looking ahead, we expect payroll employment growth to slow a little further over the second half of the year as output decelerates.

Panel 4 shows our medium-term projection for the unemployment rate. The picture should look familiar. With actual output expected to outpace potential through next year, the unemployment rate edges down a bit further next year and remains about 1 percentage point below our estimate of its natural rate. This path is a touch lower than in the June Tealbook.

Your next page summarizes the inflation outlook. But first, please turn to the separate handout titled "Material for PCE Price Index Update," which summarizes this morning's data on monthly PCE prices.[5] Over the 12 months ending in June, overall PCE prices rose 1.4 percent and core PCE prices rose 1.6 percent; both figures were a little below our Tealbook estimates. The surprise was in the nonmarket portion of these prices, from which we generally take little signal for future inflation.

If you return to panel 5 in the main set of exhibits, you will see that the dashed line shows the three-month change in core PCE prices. Please note that this panel does not reflect this morning's data. It presents our estimates at the time of the Tealbook, but the basic picture will be the same. The dot labeled "March" illustrates the very low core inflation readings over the first three months of the year, which then rebounded in the subsequent three months to June. With this morning's data, the three-month change to June was 2.5 percent, a little below the value plotted here but still quite consistent with the view that core inflation has been rebounding from transitorily low readings.

Panel 6 presents our *current* post-Tealbook inflation forecast, taking into account the revised quarterly BEA data that were released last Friday. In the Tealbook, our projection for core inflation this year was a little above the June projection, but as you can see from the solid and dotted black lines, our projection is now back where it was in June. We now expect core inflation of 1.8 percent this year, edging up to 1.9 percent in 2020 and 2021. Overall, PCE price inflation, the red line, is expected to come in a little lower than core both this year and next, as projected declines in crude oil prices feed through into consumer energy prices.

Panel 7 shows our decomposition of core PCE inflation, the black line, into the contributions of various fundamental determinants. The relatively flat contour of core inflation over the medium term largely reflects our view that underlying inflation, the gray bars—which we define as the rate of PCE price inflation that would prevail in the absence of slack, idiosyncratic relative price changes, or supply shocks—will

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

remain constant over the next few years at 1.8 percent. High rates of resource utilization, the red bars, are expected to put upward pressure on core inflation. The contribution is small, however, and is partly offset after this year by a negative contribution from relative import prices, the green bars.

We interpret the apparent stability of underlying inflation in recent years as reflecting well-anchored long-run inflation expectations on the part of wage- and price-setters. We therefore closely monitor various expectations measures, including those obtained from surveys of households, professional forecasters, and financial market participants. Such expectations measures are included in several of the models we use to inform our judgmental estimate of underlying inflation.

One such survey-based measure—the median value, given in the Michigan survey, of the expected rate of price change over the next 5 to 10 years—is plotted as the blue line in panel 8. As you know, this series has been running near 2.5 percent for the past few years, after having drifted lower from 2014 to 2016. The series has been a little more volatile this year, and the preliminary reading for July moved up to 2.6 percent from 2.3 percent in June.

In addition to the median, the chart shows the 25th and 75th percentiles of this distribution. I include these for two reasons. First, as a reminder that for all the emphasis on the median as a summary measure, there is a reasonably wide distribution of households' responses to questions about expected inflation. And, second, to illustrate that as the median declined a few tenths between 2014 and 2016, the 75th percentile of the distribution declined more notably, from roughly 4½ percent to 3½ percent. Fewer respondents report that they expect relatively high inflation rates of 5 percent or higher, and that's bringing down the high end of the distribution.

Knowing what to make of these developments is more difficult. The behavior of inflation leads us to estimate that underlying inflation has remained roughly stable, notwithstanding the decline in inflation compensation from financial markets or the decline in the Michigan median and also notwithstanding the larger decline in the 75th percentile shown here. Perhaps none of these measures adequately captures the inflation expectations that are relevant for wage and price determination, or perhaps the observed changes in expectations have not been large enough to show through in actual inflation. But we do see the decline in some of these expectations measures as pointing to a downside risk for the inflation outlook. And, at a minimum, we can say that we are not seeing evidence of the *increase* in inflation expectations that might lead underlying inflation to move higher and so be more consistent with the Committee's inflation objective. Shaghil will now continue our presentation.

MR. AHMED.[6] Thanks, David. I'll be referring to the handout titled "Material for Briefing on the International Outlook." The dog days of summer are here, and

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

they bring an outlook for the global economy that calls for cloudy skies with some possibility of sudden thunderstorms.

My presentation revolves around two key questions about this forecast. First, are the skies clearing up—are we seeing signs that foreign economic growth is coming out of its soft patch? Second, what are the chances for flash floods—have downside risks, particularly those associated with trade policy developments, increased since your previous meeting? Our short answer to the first question is that although there are signs in some countries of a pickup in growth, the evidence is not yet robust that the foreign economies are out of their soft patch. On the second, though downside risks have not intensified, they haven't subsided much from their elevated level either. I will now turn to the details.

Indicators suggest a pickup in GDP growth abroad in the second quarter, to 2 percent at an annual rate from 1½ percent in the first, as shown in the left panel of your first exhibit. This growth is below the potential rate, and we expect it to remain so for the rest of the year, but it should gradually pick up to about its potential pace of 2½ percent next year.

But several considerations give us some pause. First, indicators on the whole have come in a bit weaker than expected, and we have revised down a touch near-term aggregate foreign growth. The right panel shows the evolution of the staff forecast over a longer period. As you can see, our outlook for the foreign economies for this year is still significantly below what we were predicting at the start of the year, especially for the emerging market economies. Second, in your next exhibit, the second-quarter estimated pickup is primarily due to improvements in Canada and Mexico, two economies with a high weight in our U.S. export-weighted foreign aggregate. A GDP-weighted aggregate would not show a pickup. Moreover, the indicators from Mexico are by no means suggesting a red-hot pace of that economy but rather a turnaround to modest growth from a small contraction at the start of the year. In several other key regions, such as China, the euro area, and the United Kingdom, we estimate that growth has declined from its first-quarter jump. Third, the malaise in global manufacturing, shown in the right panel, continues, while services are still performing relatively better.

In addition, as can be seen from the left panel of your next exhibit, although inflation bumped up temporarily in the second quarter, in part as a result of higher energy prices, underlying inflation pressures remain low in the advanced foreign economies. Specifically, for the euro area, as Lorie discussed, inflation compensation readings are near record lows. With subdued inflation and concerns about growth persisting, foreign central bankers have more reasons to sweat than just this summer's heatwave. As shown to the right, consistent with their recent "dovish" communications, we have revised down our policy rate paths in the case of several AFEs. At its July 25 meeting, the ECB left its deposit rate unchanged but modified its forward-guidance language to signal potential rate cuts and said that it would consider resuming asset purchases. Board staff expect the ECB to lower its deposit rate 20 basis points to negative 0.6 percent at its next meeting and to resume largescale asset purchases later in the year. In emerging market economies, too, the rhetoric has turned more "dovish" and, as Lorie noted, several central banks have loosened policy. It is noteworthy that we now see it taking more monetary accommodation in the foreign economies to achieve growth rates for 2020 that for several economies are lower than what we wrote down for that year at the start of the year.

As shown on the next page, EMEs appear to be benefiting from expectations of more accommodative monetary policies in the advanced economies, which have helped keep financial conditions in many of these economies benign. The scatterplot on the left shows that since mid-May, many EMEs have seen their currencies appreciate against the dollar, and these appreciations have been larger for those economies that rank as relatively more vulnerable according to our cross-country EME vulnerability index. As shown to the right, EME credit spreads have also narrowed since May and flows to EME-dedicated funds have improved, with flows to bond funds turning positive again. Were it not for recent declines in expected policy rate paths in advanced economies, especially the United States, we would likely be revising down EME growth more.

Regarding global risks in your next exhibit, a continuing headwind for monetary policy has been trade tensions. These tensions are registering somewhat lower readings on the thermostat. For now, the U.S.–Mexico front is relatively calm after the immediate threat of U.S. tariffs on Mexico was dropped in early June. In addition, at the G-20 meeting in late June, Presidents Trump and Xi agreed to restart trade negotiations, which actually got under way today, and further U.S. tariff increases on imports from China have been indefinitely postponed. But as indicated in the chart, even after some decline in our trade policy uncertainty index from its latest spike, the index remains high and ongoing concerns about trade policy could continue to impede investment and activity. Moreover, there could be a reescalation of trade tensions and further increases in tariffs, including on autos.

On the next page, how have the two recent waves of trade policy uncertainty—in the first half of last year and in May and June of this year—affected economic activity, and how could the effects play out over the next couple of years? Certainly, as can be seen in the chart, the heightened trade policy uncertainty has been accompanied by a slowdown in both global trade and global production. The effects of trade policy uncertainty, however, are difficult to disentangle from other factors, such as the role of the global tech cycle and country-specific factors that are restraining global demand, including China's deleveraging, complications resulting from tighter emissions standards for new motor vehicles in Europe, and uncertainties associated with Brexit. But we keep trying, and, in the next exhibit, I present our latest evidence on this.

My colleagues, Matteo Iacoviello and some others, have estimated a monthly structural vector autoregression, or VAR, model that includes industrial production, trade policy uncertainty, the dollar, world imports, stock prices, financial spreads, and actual tariffs using data from 1985 to the present. They map the estimated effects on industrial production of trade policy uncertainty obtained from this model into GDP effects.

The three panels in the exhibit show how much the two waves of trade policy uncertainty since the beginning of 2018 have held back GDP so far and are expected to over the forecast period, according to the VAR model. The black lines show that trade tensions are estimated to subtract about 1 percent from GDP in the advanced foreign and emerging market economies as well as in the United States. The blue lines isolate the effects from just the first wave of the increase in trade policy uncertainty in the first half of 2018. The estimated drag on output due to trade policy uncertainty builds up over time; the model predicts that the effects from the first wave would be reaching their troughs just about now, and that the new wave in May and June will have further knock-on effects in coming periods. The lags in the effects can help account for the puzzle we have been wrestling with—that while trade policy uncertainty featured prominently as a concern in surveys, we didn't see material direct effects on trade and investment until more recently. Although the exact magnitude of these effects remains uncertain, these results highlight both the likelihood that trade policy uncertainty played an important role in the recent manufacturing slowdown and the probability that the adverse effects have not fully played out yet.

Our "Global Investment Slump" alternative scenario in the Tealbook, presented in the last exhibit, explores a more severe variant of this possibility using our SIGMA model. Specifically, in this scenario, we assume that the unprecedented level of trade policy uncertainty generates hits to consumer and business confidence both here and abroad that set in motion a global investment slump and reduce productivity. Safe-haven flows lead to a substantial appreciation of the dollar. U.S. real GDP growth falls about 1.5 percentage points below the baseline, as does foreign GDP growth. And, with U.S. core PCE inflation remaining below 2 percent, the federal funds rate declines.

All told, trade policy uncertainty continues to be an important source of downside risk to the global economy. But although trade tensions have been the talk of the summer, I would like to end my presentation with just a one-word preview of the fall: Brexit. [Laughter] Thank you. Beth will now continue our presentation.

MS. KLEE.[7] That's the one-word start to my presentation, actually. [Laughter] Thank you, Shaghil. I'll be referring to the "Material for Briefing on Financial Stability Developments." You received the staff's assessment of financial stability—affectionately known as "the QS"—a couple of weeks ago. As always, the staff from across the System contributed to the assessment. We continue to view overall vulnerabilities facing the financial system as "moderate." High business borrowing and high-ish asset valuations continue to coexist with low household borrowing and resilient financial institutions. Separately, we dug into financial market liquidity

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

conditions and found some evidence of increased fragility in at least a couple of markets. I'll address these areas in four parts.

First, asset valuation pressures are "notable," which in our taxonomy means a notch below "elevated." The top panel of your first exhibit shows an index of overall asset valuation pressures and risk appetite constructed by the staff to summarize a wide range of indicators. We've used this index for several years now, and its current reading suggests valuations in the upper part of their historical distribution. This picture broadly echoes the staff's judgmental assessment. For the year and a half before the market turmoil in late 2018, our index was near its 90th percentile, and we assessed valuation pressures to be "elevated." When pressures eased somewhat late last year, we downgraded our assessment to "notable," and it remains there today.

As shown in the middle-left panel, Treasury term premiums are now negative by many measures, which has put upward pressure on prices in a range of markets. As a result, as shown to the right, corporate bond yields are near the bottom of their distribution of the past 20 years, and equity prices, which Lorie showed, have reached new peaks. Real estate markets have also shown some signs of heat. As shown in the bottom-left panel, commercial real estate prices remain sky-high, while residential property price-to-rent ratios, which aren't shown, remain a touch above trend. Because the high levels of prices is importantly due to low Treasury yields, risk premiums are not generally compressed. For example, as shown in the bottom right, the staff estimate of the equity risk premium is around the bottom third of its distribution, and risk premiums in corporate bond and other markets aren't very low. In other words, we have a configuration of elevated asset prices that appear to be supported by low Treasury yields—at least for now.

Second, business borrowing is hot, while household borrowing is not. As shown in the top-left panel of your second exhibit, gross debt to assets of corporations is high. The most recent observations are indicated with dots because there was an accounting change implemented in the first quarter that leaves businesses looking even more levered than before. That said, the picture wasn't looking good even before this accounting change brought these additional leases onto firms' balance sheets.

As shown to the right, institutional leveraged loans generally targeted for larger firms, the red area, and private credit for midsized firms, the yellow, green, and blue areas, continue to expand. We're going to focus first on the $1.2 trillion of leveraged loans. We know that for 40 percent of borrowers of newly issued loans, debt is more than six times earnings, representing a new record high. This peak exceeds that of the credit cycle just before the financial crisis and suggests that investor appetite for holding leveraged loans continues to climb. Focusing on the $900 billion in private credit, we know less about these loans. Anecdotal reports suggest that growth in private credit represents some migration of intermediation to nonbanks, as these borrowers would likely have depended on bank financing in years past. In contrast to business debt, household balances, which aren't shown, have continued to grow about in line with nominal GDP. The moderate increases we've seen, on net, continue to accrue to households with very high credit scores.

Third, financial leverage and funding risk are both low but rising. Banks continue to maintain strong capital positions, and results of the Federal Reserve's 2019 stress tests suggest that large banks should be able to withstand a severely adverse downturn. However, there is some indication that bank leverage might increase over the next couple of years. For example, payouts at the largest banks are expected to be more than 100 percent of earnings this year and next. In addition, as shown in the middle-left panel, some G-SIBs have announced medium-term targets that imply declines in capital ratios of about 100 to 300 basis points from current levels.

Regarding the nonbank sector, we took a close look this round at Fannie Mae and Freddie Mac. Our assessment is that systemic vulnerabilities created by these GSEs are low to moderate, and the vulnerability of the GSEs to financial or macroeconomic shocks is low. Importantly, this latter assessment relies on the agencies' conservatorship. For example, as shown to the right, the GSEs are required by their regulator to run the Federal Reserve's severely adverse scenario through their own models and compute the resulting capital needs; that's shown by the brighter red line. These are estimated to be less than the available remaining draws of these institutions, which is the blue line, or, indeed, for comparison, the cumulative draws since 2009, which is the maroon line. That said, even the modest capital needs under this recent stress-test scenario swamp the GSEs' own retained capital of about $3 billion each.

In other parts of the nonbank sector, as shown in the bottom-left panel, available data on hedge fund leverage suggest a snapback to high levels following a temporary depression in late 2018. The exposures of dealers to hedge funds in the CDS market are becoming increasingly concentrated, with a few hedge funds accounting for a large share of these exposures.

Separately, as shown to the right, outstanding balances in prime funds are starting to creep higher. Although current levels are certainly low relative to those seen before the SEC reform, the growth suggests emerging vulnerabilities associated with these funds and warrants continued monitoring. Inflows into prime funds are mostly into retail funds, which we believe are less susceptible to runs than their institutional counterparts. But the inflows are occurring against a backdrop of some expansion of money fund alternative vehicles, which have fragile structures and are used by institutional investors.

Fourth, market liquidity is, overall, in good shape, although with some caveats. You'll remember that the market volatility experienced in a couple of episodes in 2018 was accompanied by anecdotes about illiquid trading conditions, and we promised to look into it further. We made good on our promise, and we come to you this round with the first part of our planned analysis, with more to come.

The black line in the top panel of your third exhibit plots a composite index of Treasury market illiquidity, which incorporates standard measures such as bid-ask spreads and market depth. It goes up when liquidity gets "bad" or "thin" or "illiquid." The red line plots implied volatility for the Treasury securities market. It goes up when volatility goes up. Relative to history, the current level suggests that liquidity in the Treasury securities market is about "as good as it gets" and responds little to increased volatility.

The equity futures market, while, generally speaking, still a highly liquid market, tells a different story. As shown in the middle panel, the illiquidity index for equity futures was quite elevated in early and late 2018, even compared with volatile times over the past 14 years. In addition, the illiquidity index in the equity futures market has become more sensitive to market volatility. In particular, even though the market volatility in late 2018 wasn't extreme, equity market liquidity deteriorated to levels not seen since the financial crisis.

Markets with fragile liquidity are more prone to a flash event, defined as a big change in prices that is at least partially reversed in a very short period of time. As shown in the bottom panel, flash events in the equity futures market were more frequent in 2018 than in any year since the crisis. This increased frequency coincides with principal trading firms coming to center stage in these markets, as liquidity provision is concentrated in only a few of these firms. This concentration may lead liquidity to evaporate in stressful periods: If even one of these firms abruptly withdraws, liquidity drops substantially, and a modest sell order may cause a sudden and outsized drop in prices.

The memo giving our analysis goes into more depth about market liquidity, including an exploration of foreign exchange and corporate bond markets. In general, liquidity may have become a little more fragile in FX in recent years, while bond market liquidity hasn't changed much. However, there's still a lot we don't know, and so we, as well as other agencies, will continue to monitor developments.

Thank you, Mr. Chair. My colleagues and I are happy to answer your questions.

CHAIR POWELL. Thank you. Questions for our briefers before we have an opportunity for comment on financial stability? President Daly.

MS. DALY. This question is for David. I just want a clarification, more than anything—if we take your chart 4 on the unemployment rate, and the gap implied by the natural rate relative to current unemployment—is that related to the calculation in chart 7 of the decomposition and the influence of slack on the inflation realizations?

MR. LEBOW. Yes, exactly.

MS. DALY. Okay. So if that's the case, then what if you—so these are related, but not completely the same question. So if you took a different approach to calculating the natural rate—something simple, saying "We've missed for so many years that maybe we don't have everything in our model," and you reduce this gap quite a lot just from that, what would happen to this red? I don't know what the exact coefficient on your Phillips curve is, but here's what I'm worried about, and I wanted to just have you comment on that. If you think underlying inflation is 1.8 percent and the other factors are dragging it down, then the disappearance of this red component, because we've got the wrong gap, poses a real risk to inflation that isn't featured in this. It seems modest, but we're talking about tenths. And so I just want you to maybe talk about the risk assessment there and what this would imply.

MR. LEBOW. So our estimates of underlying inflation and our estimates of the natural rate are not unrelated. My colleague Chris Nekarda showed, in a Board briefing within the past couple of months, a model of his where these two are estimated jointly, and there is a relationship.

If you would impose on the model a lower natural rate so that there's less labor market tightness, as you're saying, then the model would generate—I hope I don't say this backward—a higher estimate of underlying inflation. In other words, if the tight labor market is not holding up inflation, then something else has to be. And it would come up with a higher estimate of underlying inflation.

Now, his model kind of prefers a configuration such as we have in our baseline outlook. In part, that has to do with how much the model wants its estimate of the natural rate to have declined over the past decade, given what it sees about demographics and so on. But, yes, these are related, as you're saying.

MS. DALY. So is the right way to think about this that discussing what's in chart 4 doesn't really change the projection of inflation, it just changes the composition of whether you think it's coming from underlying inflation or from the gray versus the red? That's what I thought the Nekarda piece would say—it's trying to figure out which component to allocate it to, but the underlying picture is roughly the same.

MR. LEBOW. I think that's right. I mean, I wouldn't want to assert that, quantitatively, it would have no effect, but it certainly goes in that direction. And, as you see, the effect of labor market slack or a tight labor market in our inflation projection is not large.

MS. DALY. The reason I'm asking this question and pressing this point is, this seems implausible that we missed by this much for so long. If it has a material effect on what your inflation projections are, that's useful to talk about. If it doesn't, then we can continue to look at this picture. I guess that's what I was trying to assess.

MR. LEBOW. I'll also mention, we had a box in the Tealbook that you probably saw, which does a simple calculation, saying—

MS. DALY. I saw that.

MR. LEBOW. —given our estimate of underlying inflation, how low would the unemployment rate have to be according to our Phillips curve to get you to 2 percent?

MS. DALY. So, 3.4 percent.

MR. LEBOW. Yes, 3.4 percent.

MS. DALY. Okay, thank you.

CHAIR POWELL. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. Thinking about our conversation that we had about the framework—and I think it was Vice Chair Williams who talked about trying to determine, are these cyclical trends that we're seeing in asset markets or are these longer-term trends? I can imagine a low-r^* world. I can imagine a world of high asset prices, because you're discounting cash flows with the lower discount rate. I can also imagine a world, over the long term, of corporations taking on a lot more leverage just because debt is cheap. I'm just curious—as you all look at the trends you're seeing in asset markets in America, if you look at Japan, are we seeing the same trends? Are we seeing high stock prices? Are we seeing high corporate leverage because they've been in a low-r^* world for a long time? And does that give you any insight into, should we look at this as a cyclical phenomenon or just a long-term phenomenon of low r^*?

MS. KLEE. Yes. I think where we are right now—and we're just going to talk about asset valuations. Let's look at that. We're at "Notable," which is the orange color, okay? So it's not the red color. And the level of a lot of asset prices is being pushed up by Treasury yields, and yet at the same time we talk about the corporate bond spread being at about the bottom third of the distribution. Other risk premiums, the equity risk premium—they're all kind of around that level. So, in that sense, I believe what we're seeing right now with the asset prices is, at least, cyclical, other than being pulled down at the same time by Treasury yields.

I think in the case of Japan, their big financial crises were in the late '90s. They had a big real estate boom, and so they've been trying desperately to get out of that for a very long time. We sometimes meet with them, and they talk about the risks that they're seeing. They focus on the quantities—again, on what's going on with financial leverage. They see more growth in some of their riskier institutions, and we monitor just like they do. In some sense, we monitor the asset prices, and we monitor the financial leverage. And so right now we see resilient institutions. That's our structural piece. The cyclical piece is these asset valuations that have gone up and down, and we do gauge them to do that.

MR. KAMIN. President Kashkari, just to add on to that: Indeed, Japanese stock prices have actually kept better pace with U.S. stock prices than those of European stocks. On top of that, we're seeing some indications of greater reach for yield behavior by Japanese banks, particularly regional banks that have been plagued by poor profitability.

So there are some signs that persistently low interest rates are leading to some reach-for-yield behavior. But, broadly speaking, Japan is definitely the poster boy—or girl—for low-for-long interest rates. And just over the course of the decades, we haven't seen that much indication that those low rates are promoting financial imbalances. In fact, this seems like the scarring experience of the asset bubble collapse. It seems to have led to a very persistent aversion to taking a lot of risk.

Real estate prices are still lower than I think they were in 1990. Leverage of Japanese corporations is not particularly high, not particularly elevated—a lot of cash holdings by Japanese corporations. So maybe in another 10 years we would see stronger evidence of reach-for-yield, but right now it tends to be just in small pockets.

MR. KAPLAN. Can I just add to the example? So they have underperformed the United States—I'd say, dramatically—in terms of performance over the past 10 years. And the dynamism, if you look at this issue we're worried about—lack of business dynamism—I think they have it there even dramatically worse than here.

I don't know how many initial public offerings (IPOs) there have been in Japan over the past two years. They just don't have the start-ups. But, on the other hand, they don't have the failures either. We were talking yesterday about this. I think it's a different system—more controlled, more groups—but it's an example: sluggish growth, their price-earnings (P/E) ratios have gone like this, and it's a much more sluggish economy with a lack of dynamism.

MR. KASHKARI. The thing I'm struggling with is, what do we define as "reach for yield" versus what's just responding to the new macroworld that we're living in? I don't know how to tell which is which.

MR. LEHNERT. One commonly cited difference or distinction is, you could have a set of firms that have made promises in terms of fixed nominal returns, like pension funds and life insurance companies, and those firms have an obvious incentive to gamble for life in an unexpectedly low, persistently low interest rate environment. For a range of other firms, it's more like their liabilities are also cheaper in a low interest rate environment. So that's why there's this particular interest and focus on life insurance companies and pension funds and their behavior.

CHAIR POWELL. More broadly, though, doesn't it come down to whether you think the sovereign yields are going to move way back up? Obviously, if you look at the spread, it's at a pretty normal level. The equity spread looks like it's right at its median. And so it comes down to that. If really low sovereign rates are the new normal, then equities aren't overvalued, they're right on the median. But, of course, we don't know that. Is that fair to say?

MS. KLEE. I think so.

MR. LEHNERT. That's right. That is our story.

VICE CHAIR WILLIAMS. Okay. President Kashkari is asking exactly the question I was going to ask, but I'm not thinking we're getting answers. So I think that the real question is, is the term premium unusually low? You show charts that say it's very low, but it could very well be the new normal for the term premium.

I'm restating here, I guess, your point. This is what I meant by "structural" versus "cyclical." You look at the term premium, and you say, "Well, that's cyclically low." Well, look at the U.S. economy. Unemployment is 3.7 percent. You know, interest rates are essentially at neutral. It's not obvious that this is an unusual cyclical state, at least for the U.S. economy. So one hypothesis is, the term premium is unusually low, it'll get back to some new normal—we don't know what that is—and that's going to push down asset prices.

The alternative hypothesis is, this is the new normal, given the asymmetry of risks around inflation, given low r^* and everything we've been talking about. And, therefore, even, say, a term premium of around zero or slightly negative supports commercial real estate, corporate bond yields, and asset prices more generally.

So if I were to rephrase the last couple of questions, I would say, "How do we distinguish between the stories around the term premium?" I don't think this is at all about the equity market. It's not about the corporate bond market. It's actually about and has been for some time how do we view the U.S. Treasury securities market, the euro area, sovereign bonds, and everything else? So I think that's really where we should be focused—trying to understand that. Because if the term premium goes up 2 percentage points from today's levels, that's going to pull down asset prices around the world dramatically.

MR. LEHNERT. I don't know if there's a question mark at the end of that, but let me—

VICE CHAIR WILLIAMS. That was a statement of fact. [Laughter]

MR. LEHNERT. So the one thing that we've pointed to over the years is, obviously, the hedge value of Treasury securities—an asset that goes up in price during bad times—is something that can explain a structural negative term premium. And when that hedge value gets called into question—and there was one particular episode in early 2018 when that happened that was associated with a lot of volatility in equity markets in particular—it tends to have broad-reaching effects on asset prices. So I think as long as they maintain their hedge value, then, yes, this configuration is perfectly reasonable.

CHAIR POWELL. Further questions or comments for the briefers? If not—

MR. EVANS. Can I ask a clarifying—

CHAIR POWELL. Please.

MR. EVANS. I wasn't expecting Vice Chair Williams's comment about the risk of increasing term permiums. I guess—

VICE CHAIR WILLIAMS. No, I actually don't expect that.

MR. EVANS. Well, that's why I wasn't expecting it, I suppose. [Laughter]

VICE CHAIR WILLIAMS. No, no. I guess it's implicit in some of this presentation that the term premium is unusually low, and we would expect it to come back to a more normal level. It's implicit in some—

MS. KLEE. I think that we cite that as a risk, not necessarily that it would happen.

MR. EVANS. So most of the experiences in recent years that I can think of that were probably disappointments as to the future path of policy, like the 2013 taper tantrum—"Oh my gosh, you're not actually, as a central bank, going to follow through with all of the asset purchases that the markets were expecting?"—and perhaps other events. So I guess I'm sympathetic to Vice Chair Williams's perspective on that.

CHAIR POWELL. I'm just going to add that, with so many dollars in sovereign debt trading at negative rates, it's also very possible that we're all going to continue to write down our estimate of the neutral rate, as we have every year for the past five years—or maybe that process has now ended. But maybe not.

MR. CLARIDA. There's a zero bound to it.

CHAIR POWELL. Okay. Thank you very much. Let's now begin the opportunity for comment on financial stability with President Mester.

MS. MESTER. Thank you, Mr. Chair. I thank the staff for continuing to monitor financial stability risk, and I particularly appreciate the staff expanding the sectors it is monitoring, especially the unregulated sectors into which we have less insight.

And I found the analysis of the private credit market very interesting. While private debt funds and business development companies appear to rely less on leverage and don't seem to pose financial stability concerns at this time, they have been one of the fastest-growing segments of the debt market since the financial crisis. So I'm glad the staff is planning to continue to track developments there.

High levels of corporate debt, leveraged lending, and commercial real estate valuations continue to pose some risks to the outlook. Equity and corporate bond prices are near their historical peaks, and overall valuation risks appear to be rising. Firms with the fastest debt growth have seen the greatest deterioration in indicators of their credit risk, including ratios of earnings to assets and cash to assets.

The staff memo indicates there are heightened vulnerabilities in the nonfinancial corporate debt sector, although default rates on leveraged loans remain low. I think these conditions bear watching. Outreach to market participants identified that financial conditions were vulnerable to monetary policy actions perceived as less accommodative than what's priced into markets and to an upside inflation surprise.

The probability of each is not negligible. The market has priced in more rate cuts than seem likely based on the previous SEP and economic outlook, and recent inflation readings have been firming a bit. We should be prepared for some increased volatility in the markets and communicate our views on the outlook for monetary policy as clearly as possible. Now, the staff judges the overall vulnerability of the U.S. financial system as “moderate,” and I have no reason to disagree at this point. However, I continue to think we should be better prepared for how we would approach a situation of rising risks to financial stability.

The summary memo indicates that, arguably, a post-crisis consensus has emerged that supervisory, regulatory, and macroprudential tools should be used to address financial stability risk, and monetary policy tools should be used to address macroeconomic stability risk. This may be what’s desired, but it may not be achievable. In addition, as the memo points out, this is the best strategy in some models of the economy, but not all. In addition, we have to recognize that we have only a small set of macroprudential tools in the United States, consisting largely of the countercyclical capital buffer and the stress test. As last year’s tabletop exercise illuminated, these tools are limited in their ability to control risk in an asset class or, more narrowly, at institutions. In addition, the use of supervisory guidance is now more constrained, and it takes time to put regulations or rules in place.

All of this suggests that in order to control risks to financial stability, we may need to do more to ensure the structural resilience of the financial system across the business and financial cycles with stronger capital and liquidity requirements, be more willing to use the countercyclical tools at early signs of emerging financial stability risk, and recognize that monetary policy may need to help contain financial stability risk, at least in some cases. I think it behooves us to discuss and reach some consensus on how we should balance our financial stability and macrostability responsibilities and how we would use supervisory and macroprudential tools and monetary policy to foster these objectives.

Now, as our framework discussion just underscored, we have a lesson from the financial crisis and the Great Recession that the lower bound really poses challenges for us, and we may be in a new normal with a low r^*. I think the other things we learned from that period included how important financial stability is and the fact that we now have much more interconnectedness in global financial markets. And I think we need to take that seriously as well. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. A financial stability concern that I'm watching closely is the development of co-working models in many major urban office markets. The co-working model is currently employed by a variety of companies, but probably the best-known company in the space is WeWork. Though co-working still represents a small proportion of the total size of the CRE office segment, it is growing rapidly. It is growing particularly quickly in major cities around the world, including Shanghai, London, and New York, such that WeWork is now estimated to be the largest private office tenant in Manhattan.

What makes this development a potential financial stability risk is twofold. Co-working companies that enter into long-term leases with the property owners have tended to re-lease to smaller-sized and less-mature companies on a shorter-term basis. This is a segment of the economy likely to be particularly susceptible to an economic downturn, potentially resulting in office vacancies rising more quickly than they have historically. Thus, in a downturn, WeWork would be exposed to the loss of tenant income, which puts both them and the property owner at risk if WeWork can not make its own lease payments to the owner.

A second reason for concern is that companies such as WeWork have created bankruptcy remote SPV lease structures. This structure allows the SPV of the co-working company to walk away from unprofitable lease arrangements in an economic downturn without the property owner having recourse to the ultimate parent, the co-working company.

The fact that the WeWork model relies on small-company tenants with short-term leases, combined with a lack of recourse for the property owner that WeWork leases from, raises the issue of whether bank loans to property owners in cities with major penetration by co-working models could experience a higher incidence of default and greater loss given default than we have seen historically.

The potential for increased losses accruing to property owners comes not just from the limited liability arising from the SPV structure, but also from the change in the composition of tenants. The WeWork model opens the door for smaller and riskier firms that may be less able to survive a downturn to become tenants. The introduction and growth of the co-working model captures the owner–tenant structure in a way that may not be adequately captured in a stress test focused on historical relationships.

At the stress-testing conference in Boston, Mark Flannery suggested stressing parameter values in the default and loss given default equations in addition to economic variables. Such a strategy might be particularly relevant for the commercial real estate space in major U.S. cities that have become more dependent on co-working models, as these models may be less resilient to a downturn than more traditional office space. The risk is augmented by the fact that it may occur at a time when office capitalization rates are unusually low and valuations are unusually high for office space. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chair. In preparing my earlier remarks, I anticipated that, even for myself, I might be going longer than normal. So I decided to put something off until this intervention [laughter] related to the framework and financial stability. I've already mentioned this—let me just second President Mester's comment that I think it would be very useful to have a longer discussion about the interaction between financial stability issues and our monetary policy framework. I have to say, I was very heartened to hear Chair Powell indicate that nonmonetary policy tools surely seem better to address financial instability risks rather than give up on our dual-mandate goals of maximum employment and price stability.

At times, we have talked about the potential that we might have to tighten the funds rate even when it might not be the best time, in terms of the economy. Back in 2013, at least, we discussed that, and everybody sort of indicated that that wouldn't be the right way to go, which I think you always end up with.

Doing this in terms of the framework would be helpful, and I was heartened to hear about the listing of higher through-the-cycle capital—the countercyclical capital buffer presumably could be part of that—and how that could interact with our cyclical monetary policy responsibilities. So I look forward to hearing more about that in some discussions. Thank you.

CHAIR POWELL. Thank you. President Barkin.

MR. BARKIN. Just one quick point. As I read through and reflected on this morning's conversation and the one we're likely to have tomorrow, I note that the financial stability assessment is a static look. It's what it looks like today. We talk a lot about potential risk to financial stability caused in low-rate environments, and I'd be curious whether you have the capability and, potentially, whether you have the interest in taking more of a forward-looking dynamic look at these risks. I'd at least find that modeling useful.

CHAIR POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Chair. First I'd like to thank the staff for their work on the QS assessment. I always find that to be a very interesting and useful tool. But my remarks today will focus on what's referred to as "private credit," or lending by nonbanks. This credit is advanced by private equity firms through private credit funds, which obtain funding from insurance companies, pension funds, and other investors.

Private credit overall has been increasing in recent years and is now estimated at about $900 billion, compared to the institutional leveraged lending market of about $1.2 billion. No, wait—sorry. Is that right?

MR. QUARLES. Trillion.

MS. BOWMAN. Trillion. Thank you. We know much less about it because of its limited relationship with the banking sector.

Private credit funds are also relatively new entrants to the lending market, so their performance is much less understood. During the previous recession, the private credit market was about one-third the size of today's market, with slightly higher credit losses than leveraged lending. It follows, then, that this credit also tends to be extended to riskier borrowers—that is, firms with higher debt relative to assets or earnings ratios.

From a financial stability perspective, private credit funds may pose a lesser risk than banks because they tend to be less interconnected with other financial institutions. That said, private credit funds do compete with large regional banks, and yet they're not subject to the same degree of regulatory and compliance scrutiny and requirements.

Since the financial crisis, we've seen significant migration from banks to nonbanks in the area of residential mortgages, where now about half of all mortgages are originated by nonbanks.

Private credit composes a smaller, though rising, share of agricultural credit, and it seems that there may be similar trends in business credit more broadly.

My interest today is more specific and focused on lending to agricultural producers, an area where generations of relationship lending has traditionally been important. Through many cycles—some lengthy and very stressful—banks have relied on a deep understanding of agricultural production, particularly when they have geographic proximity and local knowledge. Currently, total farm debt in the United States is about $400 billion, with about two-thirds backed by agricultural real estate. And 45 percent of agricultural lending is made by the Farm Credit System, which is a GSE, and 40 percent by commercial banks. Nonbanks make up the balance of 15 percent, a portion of which is private credit.

In comparison to banks, private equity funds tend to be more focused on loans to riskier businesses for a higher yield. This additional credit source could be contributing to the elevated land prices we've seen in the agricultural markets for the past 10 years. Should agricultural land prices decline, this could lead to insufficient debt collateralization for both banks and nonbanks, potentially creating significant issues for financial institutions.

In my view, an important risk associated with the entrance of these private credit firms is the durability of their presence. They've not yet been tested by a major and prolonged agricultural downturn. Experience suggests that these downturns can last multiple years before a recovery, requiring patience on the part of lenders. Should private credit funds prove prone to liquidate and move out when, inevitably, times get tough, the resulting additional contraction in credit supply could significantly deepen an agricultural downturn.

The good news is that private equity funds are closed end and have stable long-term funding from investors, so run risk appears limited. These funds also do not appear to rely much on borrowing to fund their lending. About half of the funds borrow from large banks. It also bears repeating that, so far, this is a small fraction of the wider agricultural market. But, overall, I found the focus on private credit in the QS assessment very interesting this round, and I look forward to learning more about these issues in coming months. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chair. Well, the comments so far have been quite interesting—new takes on things. And all I've got is the same old, same old [laughter], but I will go through it anyway. I'll have a few comments on overall financial stability and how I think we should think about that, discuss a few things I think we've learned from the stress tests, both the most recent round and then over the course of the whole past decade, and wrap up with a few thoughts on the countercyclical capital buffer.

So, overall, I think what we heard today is that the macrofinancial picture seems maybe a little "frothy" but not really out of line with this stage of the business cycle. The financial system is quite resilient, though, and that has led the staff—and I completely agree with them—to conclude that overall vulnerabilities facing the financial system are moderate. So, key areas of concern: The low level of Treasury yields may be holding up the level of asset prices across a range of markets. That creates the potential for a snapback. We've had the back-and-forth as to, how great actually is that potential for a snapback? It would seem to be quite unlikely at the present moment, given monetary policy here and abroad, generally quiescent inflation, and how long the period with low term premiums has lasted. We can have a longer discussion about that, but, certainly, the near-term risk of that snapback seems to be small.

The rising level of prime money market fund assets under management—that's something that we want to keep our eye on. The level of prime funds is back to nearly half of what it was at the beginning of 2016. Business borrowing—which is something we've talked a lot about here, and it is talked about in a lot of forums—is cheap and continues to expand at a steady clip, particularly leveraged loans. Now, our available information suggests that the funding structures that support the holdings of those leveraged loans, such as collateralized loan obligations (CLOs), are stable, but the big "but" here is that that assessment relies on what it is that we can see, and most of what we can see is information from the largest domestic banks. And, obviously, I think we should be worried about the part of the market that we can't see. So the obvious potential is that CLOs could themselves have stable funding, but the holders of exposure to those CLOs could be runnable institutions.

I think in either the last meeting or the meeting before, President Rosengren raised the example of Norinchukin Bank with a significant amount of exposure to CLOs. So at the Financial Stability Board, as many of you might know, we have established a project for this year of examining globally where the risk to financial stability from leveraged lending could arise and who are the global holders exposure principally to these CLOs. The idea is that putting together this information from a broad range of jurisdictions and from a broad range of regulatory sources within those jurisdictions will give us insight that, at the moment, we can't really have from what it is that we know.

Just as a modest preview, I think we've all heard a lot that there may be risks from the exposure of Japanese banks, although that exposure tends to be to the top credit tranche. The Japanese will tell you in self-defense that non-Japan Asia has a significantly large exposure and concentrated much lower in the credit stack in the CLOs, and maybe that should be something we should look at. In any event, this should be done in the fall. I'm sure you will all pore over it obsessively, but the idea is that we really need to look at this from a global perspective, and we can’t just let it be. But even with those concerns, our financial institutions—and, particularly, our largest banks—are extremely, extremely resilient, and the confidence in that stems in part from the scrutiny that they receive as part of the stress-testing program, both recently and over time.

In June we released last year’s stress-test results. They show that the financial system remains resilient, that capital planning by banks continues to improve. The largest and most complex banks were tested against a severe hypothetical recession on perhaps the most consequential measure: the rapid fall in employment, or a rise in the unemployment rate. That, for obvious reasons, was going to be tougher this year than it was last year and than it has ever been. And they still had strong capital levels up to the test, well above their minimum requirements. Additionally, virtually all of the firms—in fact, all but one, and that was a pretty close call among the staff making the assessment—met the high expectations that we’ve set on the quality of their capital planning, taking into account their specific risks and vulnerabilities.

So, overall, those results are good news. They confirm that the financial system is significantly stronger than before the crisis. And then soon after the release of those Comprehensive Capital Analysis and Review (CCAR) results, President Rosengren and the Boston Fed graciously hosted our centerpiece stress-testing conference, and the theme of that conference was on the lessons learned over the past decade—not just the most recent stress test, but what have we learned from stress testing. And one lesson that I thought was particularly useful was on the importance of the stress test in leaning against the pro-cyclicality of bank capital.

As we all know, when times are good, banks become more comfortable with loan quality. Consequently, they don’t build as much capital over their minimums as they might in less complacent times. The stress tests push against that tendency by building in increasingly stringent macroeconomic scenarios as the economy improves. That's almost an automatic stabilizer-type consequence, given the framework in which we create those scenarios. And papers at the conference highlighted that lesson, including one by former Fed denizens Don Kohn and Nellie Liang. And that feature of bank behavior is also one of the reasons why the Basel III reforms recommended establishing another countercyclical capital tool, the countercyclical capital buffer, or CCyB.

What I wanted to end with are some remarks on the overlap that exists between the goals of the CCyB and the goals of the stress tests. In many ways, I think the two can and probably have to work together. Nellie and Don's paper flagged the potential for stress tests to lead to an unwanted and potentially sharp tightening in capital requirements in the midst of a moderate recession. So, given that, the CCyB offers an elegant complement to the stress test by creating the possibility of a layer of capital that could be turned down to support lending through that type of a stress period or a moderate downturn.

On the other hand, some object and say that that use of the countercyclical capital buffer is going to be limited. You won't be able to turn it off, because markets wouldn't permit it. You know, that's the very moment when markets are going to insist that banks preserve their capital. Whatever the regulators would allow, the markets won't allow banks to reduce capital. But the stress tests and their transparency should help assure market participants of the size of the exposures and of the solvency of the banks and thus allow the turning-down of that countercyclical capital buffer. That's certainly how the countercyclical capital buffer has worked in jurisdictions that have turned it on and turned it off. Again, the principal example of that is Britain in connection with all the anticipation around Brexit: They've turned it on, and they've turned it off. They have been able to do that. For that reason, I'd be in favor of incorporating features of the CCyB into the stress capital buffer and vice versa. But a difficulty arises in the fact that I think the assessment of financial stability that we've had from the staff here would lead us to conclude that we effectively have already turned on our CCyB with the ample structural buffers that we have.

So what do I mean by that? We've seen and we were briefed today on examples of concerns about financial stability, including stretched asset valutions and concerns about maturity transformation. If you go back to the overall purpose of the countercyclical capital buffer, it is that, as concerns about financial stability grow, we would increase the capital levels of the financial institutions that we regulate in order to bring our overall assessment of financial stability risk back down to something that's moderate, that's not meaningfully above normal. And in all the assessments of financial stability that we have talked about around this table, that we talk about at the Board, we have seen these increases in asset prices. We've seen increases in concerns in others areas about financial stability. And when we come to leverage in the financial sector, that basically swamps everything, and we say, okay, concerns are not meaningfully above normal. They are only moderate because leverage in the financial sector is so low, which is another way of saying that the purpose of the countercyclical capital buffer has already been achieved. The capital that we would have added through the countercyclical capital buffer we already have, and the problem with that is that now we don't have anything to turn down in the event of a business cycle because we did that through our stable capital levels.

One option would be to meld the two buffers to adjust the normal level of the CCyB from zero to a percentage of risk-weighted assets so that it is on generally and to take some slice of our current capital levels and to turn that into countercyclical capital buffer or a flexible layer of capital—which is similar to what many of you know that the Bank of England has done and, in fact, is aggressively trying to increase, moving to having as much as 2 to 3 percentage points of their total capital levels be this flexible layer of capital that they could turn down and then call that the countercyclical capital buffer. By doing that, I think we'd be able to simplify our capital requirements but continue to retain both through-the-cycle resilience and countercyclical buffers and, indeed, recognize what it is that it seems that we have done by our constant assessment of financial stability risks as moderate, even in the face of potentially growing risks.

The alternative of turning the countercyclical capital buffer on without making that adjustment—particularly if some of the discussion we've had about a secular decline in interest rates driven by a long-term lower *r** supporting asset prices is the case, we may not be in that much financial stability risk anyway—would result in us incurring the diminution of the capacity of the financial sector to support economic growth by increasing its capital levels without any attendant financial stability compensation because the risks may not, in fact, be that high. Or if, in fact, this is something that will adjust itself and is cyclical, since we already have quite high capital levels—effectively, the countercyclical capital buffer is "on," in my view—we could drive activity out of the resilient part of the financial system and more into the area of private credit business development corporations that are less resilient and into which we have less visibility. Do we really want to do that, given where we are? Thank you, Mr. Chair.

CHAIR POWELL. Thank you. We have several interventions left, and we're past coffee break time. So I'm going to say let's have our coffee break now, and we will start again at 3:25 sharp, by that clock. Thank you very much.

[Coffee break]

CHAIR POWELL. All right. Thanks, everyone. We'll pick it up again with President George.

MS. GEORGE. All right. Thank you, Mr. Chairman. Like Governor Quarles, I am going to continue on a familiar theme, although perhaps with a different take. [Laughter] With the easing of credit conditions since the beginning of the year, the profitability outlook for U.S. G-SIBs, especially in terms of their interest income, suggests these banks are likely to pursue riskier strategies to generate revenue to offset a slowdown or contraction in interest income.

As the quantitative surveillance (QS) report observes, credit quality for recent issuance of corporate institutional loans continues to decline. As these banks reach for other and perhaps riskier sources of income, you can see them ramping up the volumes of leveraged loans that end up on the books of nonbank entities, such as CLOs. As CLOs manufacture triple-A rated products from the speculative-grade loans, the banks generate fee income, and fund managers enjoy higher yields, reinforcing incentives to generate an increasingly larger share of these riskier loans. Although the QS report concludes this vulnerability is not out of bounds yet, these strategies are in play, as capital levels for the largest banks are declining. As Elizabeth noted, payout ratios of Global Systemically Important Banks (G-SIBs), which are already above 100 percent, are expected to increase based on the capital plans approved in CCAR. And G-SIBs have publicly announced that they are likely to raise payouts, lowering their common equity targets 100 to 300 basis points.

Historically, the combination of growing risk incentives with declining capital levels has not turned out well. Perhaps this time is different, but I find it concerning. As the Committee contemplates a more accommodative policy stance, it will be relying on assessments that these reduced levels of capital, in the face of growing risk, are sufficiently robust to withstand stress and continue to lend at the next turn of the credit cycle. Thank you.

CHAIR POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. Conditions today provide a classic environment for reach-for-yield behavior and increases in risky debt, and, of course, that is what we are seeing. Valuations in equity and corporate bond markets are near historic peaks. Commercial real estate prices are also elevated, and commercial real estate (CRE) capitalization rates remain very low by historical standards. Valuation pressures in the leveraged loan market are elevated, with nonprice terms particularly generous recently, and corporate-sector debt is at or near a historical high, whether measured relative to nominal GDP or to the book value of assets.

Moreover, the latest data suggest corporate debt continues to grow rapidly for the riskiest firms. While there has been some slowing in leveraged loan issuance recently, there has instead been a compensating increase in issuance of high-yield and unrated bonds. In this kind of environment, when it is relatively cheap to build capital by retaining earnings and when exposures to future risks are rising, classic macroprudential policy would call for capital ratios to be rising. Instead—and here my comments will echo President George's—the capital ratios at the largest banks are falling notably.

Under the rigors of the stress-testing regime and other regulatory requirements that prevailed from 2014 to 2016, the eight largest banks that pose the greatest risk to the system limited their payouts to less than 60 percent of earnings, on average, thereby building their capital buffers relative to risk assets from about 11.6 percent of tier 1 capital to 12.9 percent common equity tier 1 capital going into the 2017 stress test. Over the previous two years, payouts have been permitted to rise well above 100 percent of earnings, on average, and capital ratios have already declined from 12.9 percent to 12.2 percent. This year, the largest firms announced nearly $120 billion in planned share buybacks and plans to increase dividends.

If earnings hold steady at last year's levels, those increased distributions would represent a payout ratio significantly in excess of 100 percent and would further deplete capital ratios back down to about 11½ percent, back down to the starting ratios in 2014. If earnings are weaker, capital ratios could decline by more. History suggests that as the business cycle proceeds, both market participants and regulators become increasingly complacent. We are seeing complacency currently among market participants, as reflected in high asset prices, weak lending standards, and a tendency to favor riskier forms of lending. As regulators, we should be wary of falling into that same pattern.

With the cycle well extended, a countercyclical approach to capital regulation would suggest that current levels of capital should be above their historical average, and they should have been rising, not falling, over the past few years of solid growth and financial market gains. Capital could then be released if the economy were to deteriorate, relieving what might otherwise be a constraint on bank lending. That raises the question whether current capital levels at the large banks, which are moving down to the 11½ percent range, are indeed above the desired through-the-cycle average level of capital. Board staff research assessing both the costs and benefits found that regulatory capital ratios should be in the range of 13 to 25 percent on average. Other research has come to similar, or in some cases higher, levels.

Current capital ratios are currently below the lower end of that range and are headed lower, so if anything, we should be looking for ways to raise bank capital standards, not lower them. It is sometimes argued that our capital standards should be lower to improve competitiveness with foreign banks, but U.S. banks are healthier, more profitable, and more competitive than their foreign competitors. Moreover, regulatory discrepancies may legitimately reflect different degrees of willingness to provide government bailouts.

In the United States, post-crisis statutory changes clearly require regulation to be calibrated to avoid taxpayers again being put at risk by severe stress at a large bank. As I implied in our framework discussion, getting macroprudential policy right is crucial to meeting our dual-mandate goals. If the past three recessions are any guide, it is financial imbalances rather than price inflation that tend to pose the greatest risk to the expansion and so, therefore, it is key to achieving our monetary policy goals that the banking system remain well capitalized and that, as regulators, we resist the complacency that history suggests tends to accompany a strong economy.

Finally, President Barkin suggested that our QS should be looking at risks in a forward-looking and dynamic framework. Certainly, in my capacity as chair of the Board's Financial Stability Committee, I very much share that view, and I know the staff does as well. One of the most promising avenues for that work that we have been talking about is to use our stress-testing machinery to analyze some of these financial risks in forward-looking scenario analysis that isn't prescriptive for purposes of capital planning but is, instead, oriented simply to informing our own internal thinking. And I think that arena has great promise. Thank you.

CHAIR POWELL. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. I'll just briefly comment. I often use the term "excesses and imbalances" and talk of worries about that. And I will just clarify, here's what I'm referring to when I use that term. In a low-rate but dynamic economy, where there is not a great limit to people's desire and ability and motivation to make money—in many cases, personally make money—if it goes on long enough, it can lead to behavior that is hard to manage when a downturn occurs. And I'm not referring to stock market valuations when I talk about this. Yes, price-earnings ratios (P/E's) are going up. Last year we had P/E contraction; this year we have P/E expansion. If you had a selloff in the stock market, it might even be a healthy thing. That's really not what I'm looking at. What we've been talking to, and others are referring to, are record levels of corporate debt to GDP. I wrote an essay on this in the fall, and before this meeting I checked: Corporate debt to GDP is higher as a percentage than it was when I wrote the essay—a tripling in triple-B rated debt, dramatic growth in leveraged loans, as well as high-yield debt.

President Rosengren talked about real estate, real estate capitalization rates, and what's going on in that market. A lot of this is being driven, in fairness, by mergers, share repurchases, and a historically high level of activism, in which the typical page of the activist playbook says, you know, buy back your stock, create earnings per share accretion. It makes sense with a historically low level of rates. The cost of debt is cheap. What I'm more worried about, though, recently—and Governor Bowman mentioned—is acceleration in the growth of these private entities, usually P/E-sponsored, nonbank vehicles. And the reason I'm worried about them is, they are either going public, or they're being created in multibillion-dollar size. And they are creating access to smaller companies to get debt.

Some of these companies might not be able to get sizable bank debt, but—and I've looked at the list of names, and I mentioned it yesterday, of these business development corporations, or BDCs. I just don't recognize a lot of the companies. And when you look at the sizes, they are mid-cap companies. They are borrowing second lien debt at LIBOR plus 800 basis points. And you might say, who would borrow second lien debt today at LIBOR plus 800 basis points? But there are a sizable number of companies out there doing it. Eight-year final maturity, prepayable annually. And so what strikes me—and I'll get to what I think we ought to do about it—what we're setting up for is, we're going to get to a point where we're going to have a greater slowing in the future at some point. You'll have a credit spread widening. It's not that these companies may not be able to support this debt. It's when it comes time to refinance, they are going to have a refinancing issue. You could easily have challenged market liquidity. You'll have a credit crunch. And as we've said before, it will amplify a slowing. But as it builds, the degree of amplification is heading higher, not lower.

It strikes me, if the music stopped today, I think we'd have a challenging situation to deal with, but I'm more worried about what happens from here. And building on what President Barkin said and what Governor Brainard said, it's what happens next that worries me more. And so I think we've got a great team, and I appreciate the work our QS team is doing on this. But I would be watching very, very carefully for what's happening in terms of new developments with BDCs. And I think you mentioned it, Governor Bowman did, and we've looked. There is not great information on BDCs. There is great information on CLOs, and I actually think that is a pretty good structure. Not great information on BDCs.

We had a direct talk with the rating agencies, and it was alarming. They gave us a range of their estimate of the size of the market—$300 billion to $900 billion—in other words, not a great feel for it, and I can understand now why. But to the extent we have great information-gathering ability, if we could look more at these BDCs, who are they lending to and any other new vehicle developments—again, I think it's what happens from here that we're going to look back a few years from now and regret.

In that context, back to macroprudential options, I do think any one of our decisions in isolation seems like it makes sense. But looking at macroprudential—that is, bank regulation—

in the context of all of these other developments, I would love to step back and just say, you know, are there other macroprudential options we should be thinking about for the banks, in light of all of these other developments going on broadly in the financial system as it relates to debt and debt buildup?

I just think it would be a healthy exercise, and we're probably at the point now in the cycle where we should be at the edge of our seats. If we were vigilant before, we should be extremely vigilant from here. And, if nothing comes of it, I will be the first to apologize for annoying everyone. But I think we should have heightened vigilance from now on, because I think these risks are building. Thank you, Mr. Chairman.

CHAIR POWELL. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. One of the things I thought was really interesting in our framework discussion this morning was the intersection with financial stability. I'm glad that it came up as robustly as it did. It's very important. I continue to think that monetary policy is a poor tool to use to lean against rising asset prices, because the costs to Main Street are too high. But if the largest banks' capital levels continue to fall and if our tools that are specifically designed to enhance financial stability weaken, then even I would need to consider using monetary policy, if that's the only tool we have available. I certainly hope it doesn't come to that, because I think we'd be prioritizing Wall Street over Main Street in that scenario.

Many people over the years have talked about the countercyclical capital buffer. It's never been activated. From what I understand, when it was designed, it was supposed to be on one-third of the time, and it has not yet been activated. And the stress tests are becoming easier. As others have noted, the large banks are now paying out more than their earnings, and capital levels are falling, which is the exact wrong direction. I totally echo what Governor Brainard said. Our analysis in Minneapolis echoes other independent analyses that, to protect taxpayers, the optimal level of capital is substantially higher than the capital levels that the banks have today.

The overall QS assessment of vulnerabilities facing the financial system is yellow, not red, is based in large part, I think, on the notion that the banks have more capital and liquidity than before the crisis, so the banks are considered green. But if you go back and reassess, are the banks really green? And if not, thenis the overall QS assessment really yellow? I don't think the banks are really green. I think the banks are something south of green, and that would suggest the QS report should be red. And that would point to then activating the countercyclical capital buffer. So, to me, the standard of "Are the banks stronger than they were before the crisis?" is a false standard. There should be more of an absolute judgment. And on an absolute measure, I think the evidence is, they are not strong enough.

I am concerned about the transparency of the stress tests. You know, we have seen this movie over and over again. When dollars are on the line, people will seek to game the tests or outright cheat. Think about Volkswagen. Volkswagen literally programmed their cars to detect when they were in an emissions test and to then automatically change their engine behavior to lower their power output and reduce emissions. And then, once the test was over, the cars reverted back to their polluting, full-power ways. So they literally changed the dynamics when they were in the test. This is not dissimilar to banks buying options to hedge their investment portfolios during stress tests when they know the stress scenario in advance, only to allow those hedges to expire after the test. It makes them look safer, and then we will allow them to pay out more capital. And we know that some banks have been doing this. And, by the way, the Volkswagen executives are going to jail for this behavior.

So, on the basis of our discussion, it is clear that there is a lot we don't know about asset prices, yields, spreads, term premiums, and what is an imbalance versus what is simply a repricing in a low-r^* environment. There is a lot we don't know. Given these uncertainties, I think we should err on the side of making sure that big banks are safe, and that means making sure that they have enough capital if bad things happen. We know how to do this, and we have the tools to do it. Thank you, Mr. Chairman.

CHAIR POWELL. Thanks. More comments on financial stability? Seeing none, why don't we go right into the economy go-round, beginning with President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. At the previous FOMC meeting, I was concerned that trade and geopolitical uncertainties would become a reality by the time of this meeting. Fortunately, that did not occur. The outcome from side meetings of the G-20 was as good as could be expected. No additional tariffs were levied, and an agreement was made to resume negotiations. While the outcome of trade talks remains uncertain and is clearly a headwind for global growth and business fixed investment, this uncertainty is largely being offset by other factors. Thus, despite these headwinds, the Tealbook sees global real GDP growth picking up to 2.2 percent in the second half of the year before rising to 2½ percent in the following two years.

The effect of tariffs on trade is one part of the outlook. We should ask whether trade headwinds are large enough to depress the overall outlook. At the time of the previous meeting, the Tealbook expected U.S. real GDP growth of 1.8 percent in the second quarter. The actual number, as you know, was 2.1 percent, bolstered by very strong consumption that offset weakness in the foreign sector and business fixed investment. Thus, despite the trade-related headwinds, the economy so far continues to grow faster than potential, consistent with a somewhat lower unemployment rate next year.

Another potential headwind to growth this year was the uncertainty around the likelihood of reaching agreement on the debt ceiling and the federal budget. As we have learned, government shutdowns can be quite disruptive and threaten to undermine business and household confidence. However, with the recent agreement, it looks like these concerns have been postponed through the end of next year, reducing some of the near-term fiscal uncertainty. These improved outcomes are reflected in some measures of uncertainty. The VIX measure of stock market volatility is not particularly elevated and lies well below the peaks that occurred at the end of last year. Credit spreads, which can reflect concerns about the potential for a recession, are also not elevated and remain below the levels reached at the end of last year.

A third measure of uncertainty may be found in the probability distributions for real GDP outcomes provided by the Survey of Professional Forecasters. These distributions have not shifted significantly lately, unlike in the past periods of heightened uncertainty, such as following the stock market crash of October ’87 or the 9/11 attacks. One reason that uncertainty measures may have remained relatively calm of late is the expectation of a lower federal funds rate, but the G-20 meeting outcome and the string of positive data we have received since our June meeting were also important.

The June employment report showed an increase of 224,000 jobs that more than offset the weakness in the May report and resulted in a very healthy 171,000 jobs created on average over the past three months. Consumer spending was particularly robust in the second quarter. While the June Tealbook had assumed consumption would grow at 3 percent, the advance report for the second quarter showed a much stronger 4.3 percent. Most of the data on inflation have also surprised on the upside. The core CPI inflation rate was higher than expected. Last week's core PCE price data showed inflation firming, and the Dallas Fed's PCE trimmed-mean estimate remained steady at 2 percent.

In addition, my staff has done some work looking at the weighted median PCE measure of inflation. This alternative gauge of inflation ranks the percentage change in 211 subindexes of PCE inflation and uses as the median the percentage change of the subindex at the 50th percentile of cumulated consumption weights. An error-correction model suggests this monthly median PCE inflation measure is a good predictor of future total and core PCE measures. Currently, the median PCE is above 2 percent and it has been rising over the past couple of years. Thus, readings on median PCE prices and the Dallas trimmed-mean inflation measure are consistent with total and core PCE inflation being weighed down temporarily by subindexes that are particularly affected by changes in the calculation of some price indexes or technology innovations. Such changes would presumably be less persistent and thus less indicative of underlying inflation trends.

Corroborating these statistical measures of underlying inflation, the Tealbook forecast indicates that core PCE inflation will be just under 2 percent by the end of the year. Altogether, this evidence is consistent with the recent weakness in total and core PCE inflation being transitory and not a more worrisome and persistent miss below our target. I place less emphasis on TIPS-based inflation measures than other members of the Committee. But measures of forward and average inflation calculated from TIPS and the Michigan survey of inflation expectations have all firmed over the past month, consistent with the generally firming inflation data. Furthermore, I find it difficult to calibrate monetary policy to react strongly to relatively small changes in estimates of the underlying expectation of inflation. Finally, I would add that stock indexes and measures of nonfinancial debt to GDP are near all-time highs. Stock indexes are up significantly from both the start of the year and from the June meeting. Stoking asset valuations at the top of the valuation cycle is likely to lead to larger losses whenever these exuberant expectations are no longer ratified. I will talk more about my financial stability concerns tomorrow. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. Governor Clarida.

MR. CLARIDA. Thank you, Chair Powell. With Friday's release of the Q2 GDP data, we learned that the economy in the first half of the year grew 2.6 percent. Year-to-date, the unemployment rate has averaged 3.8 percent and remains near its lowest level in 50 years. Wages have been rising broadly in line with productivity and prices but, if anything, have recently been surprising on the downside—for example, average hourly earnings. Thus, the data simply do not signal the rising cost-push pressure that we would expect to see if the labor market were overheating. Notwithstanding strong growth and low unemployment, core PCE is running at 1.6 percent on a June-over-June basis or 1.5 percent on a Q2-over-Q2 basis. So U.S. price pressures remain muted, and various measures of expected inflation continue to reside at the lower end of a range that I myself consider consistent with our objective.

Since our June meeting, the U.S. economic data have been coming in at or even above expectations, and the staff in the July Tealbook accordingly revised up its estimate of first-half growth. So it's tempting to extrapolate these pleasant surprises into the future and to revise upward projections of U.S. activity, and the staff did that to some extent. They now show second-half growth running at 1.9 percent, roughly in line with trend, but I would point out that if that materializes, it would represent a slowdown from the recent pace of activity. While consumption growth is likely to continue to support economic expansion, given elevated uncertainties about the ultimate outcome of trade negotiations and the marking down of global growth prospects, capital spending and exports have been and are likely to remain a headwind for growth. Now, on inflation, the staff projects second-half core PCE inflation running at 1.8 percent by the end of the year, and eventually, in later years, they do expect core inflation to edge up to 1.9 percent. But I do think there are some risks to that outlook, and I'll talk about that in a moment.

I would cite three factors that continue to give me some cause for concern about the balance of risks for the outlook, especially the outlook for inflation. Let me talk about the global economy. Our mandate is U.S. employment and price stability, but we're part of a global economy, and that is a factor in our thinking about the outlook. And I must say that the outlook for the global economy continues to be marked down in the Tealbook and by outside forecasters. Sluggish global growth is a headwind for exports, and this is evident in the just-released GDP data, which show that, over the most recent four quarters, real exports have actually declined about 2 percent. It's actually unusual for real exports to decline outside of recessions—the past two times it happened were in 2016 and 1998. So, again, a slowdown for activity there.

As we've mentioned, persistent uncertainty about the outcome of trade negotiations cannot be a positive for business investment. Business fixed investment continues to be either flat or negative, and the staff sees no pickup in the second half of the year. In response to this evident loss of global growth momentum, year-to-date, a dozen or so central banks around the world have eased policy or, like the ECB this week, have signaled a clear intention to ease policy. On this point, let me be clear and more direct than I can be outside of this room. We operate in an integrated global capital market. Policy rates are low globally and are being cut in response to a common global slowdown and disinflationary headwinds, and more than $10 trillion of global sovereign debt trades at negative yields.

The United States is the only advanced economy with a positive real policy rate. U.S. rates can and do diverge to some extent from global rates, but I think there's a limit to how far this can proceed without consequences that will complicate our efforts to achieve our dual-mandate objectives. On inflation, although core PCE inflation is projected to rebound to 1.8 percent by the end of the year, the staff does not see it over the forecast horizon returning to our 2 percent target on a sustained basis. And I agree, 1.9 percent is close to 2 percent, but let's look at the risks to this outlook. Financial market signals of expected inflation have rebounded since the June meeting, but this is due, I believe, to a repricing, to some extent, of our policy rate path. For example, on June 17, the day before the previous FOMC meeting, five-year, five-year-forward breakeven inflation fell to 1.77 percent, which was the lowest "print" for this series since 2016, nearly three years and seven rate hikes ago. Since our June meeting, this indicator of inflation compensation has rebounded and is just around 2 percent now.

Regarding the staff outlook for inflation, recall that 1.8 percent is the staff's current estimate of underlying inflation. The staff can project inflation moving above underlying inflation only because it continues to project an output gap of nearly 2 percent of GDP based on a u^* estimate of 4.6 percent. One of the reasons that I see a real downside risk to our price-stability objective, and so of reaching, let alone sustaining, inflation at our target, is that I believe the output gap is much smaller than does the staff. As a result, I see less incipient upward cyclical pressure on inflation than built into the staff's forecast. My personal estimate of u^* is 4 percent, and in the next SEP round I may mark that down even lower, because I just don't see the wage inflation that would indicate overheating. So with a u^* at 4 percent or below and an

Okun's law coefficient of 2, the output gap would be less than half that of the staff's, and that would mean less upward pressure on inflation in their model.

Third, let me talk a little bit about financial markets. We cannot, I firmly believe, be handcuffed to financial markets. They move up and down. They get things wrong as much as, or more than, they get them right. But I don't think that we can ignore financial markets. The inversion of the slope of the Treasury yield curve, with respect to 3-month rate/10-year rates, has now persisted for around two months. And, to me, this is a market signal that is hard to ignore.

As I've discussed in previous meetings, there are many factors—domestic and global—that can operate to flatten the U.S. Treasury curve. And, for this reason, the slope of the curve by itself is not a particularly informative signal about U.S. economic activity. But outright persistent inversions of the 3-month/10-year yield curve are rare, as the San Francisco Fed research and other research have pointed out. And they have, without fail, at least in the past 50 years, not provided a false signal. If they're persistent, and lasted for longer than we've had so far, they have been followed by a recession within 18 months. Now, this time may be different. Let me stipulate that. But the risk that it may not should, I think, at least factor into our thinking. This is especially the case today, because the yield curve inversion is coinciding with the steep fall in global inflation-indexed bond yields and, I might add, in the Laubach-Williams estimates of r^*.

At the time of our December FOMC meeting, five-year TIPS yields, five-years forward were around 1 percent and as recently as April were 75 basis points. Right now, they're about 30 basis points, which is the lowest level since 2016. Indeed, globally forward real yields been falling. Falling forward real yields in conjunction with falling inflation measures together suggest that market expectations for growth and inflation are marked down—again, not infallible, but something to factor in. Of course, there's noise as well as signal in financial market prices, but the direction, if not the magnitude, of these moves is consistent with concerns the downside risks are elevated and should be factored into our analysis. Thank you, Chair Powell.

CHAIR POWELL. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chair. Eighth District contacts talked a lot about heavy flooding and wet conditions extending for such a long time through the spring and into the summer that many crops were substantially delayed or were simply never planted. There is crop insurance, but many policies that are commonly used pay only 60 percent of expected revenue. Agribusiness supply is down about one-third this year in many portions of the District. For comparison, we looked back at the great Mississippi River flood of 1993. We think this year's flooding is about one-third as damaging as that major event. Our calculation suggests that 2019:Q3 real GDP will be lower by about 0.15 percentage point because of this factor, mostly in reduced Q3 farm inventory because of missing or delayed production.

Business contacts are concerned about tariffs. One quote: "Tariff policy is impacting the region, and it's not just farming. We need stability in what we are doing with tariffs." A global trade policy uncertainty index that we track is at its highest level in almost 20 years. My own assessment is that trade policy uncertainty is unlikely to return to lower levels over the forecast horizon. The world is in the midst of a reassessment of global trading arrangements. It is well known from the postwar trade liberalization experience that these are thorny issues that cannot be resolved easily or quickly in a comprehensive manner. This trade policy uncertainty is weighing on global growth prospects, and there is some prospect that the feedback to the United States will be more consequential than currently contemplated in the U.S. economic outlook.

We saw some of this in the international briefing just a few moments ago: Global manufacturing purchasing manager indexes (PMIs) suggest manufacturing currently is in contraction. While the U.S. economy overall is performing reasonably well, at least looking backward, real GDP growth is slowing from the 3 percent year-over-year growth rate that we were experiencing as of the third quarter of last year and may slow further in the second half of 2019. The risk is that the continued slowdown of real GDP growth toward potential growth in the United States could be sharper than expected, given the ongoing trade war. We can afford to buy some insurance against such an outcome because inflation by our preferred core PCE measure is about 1.6 percent year-over-year, not too different from its average value over the past seven years. The positive surprise in the U.S. economy over the past two and a half years has not translated into higher inflation, using our preferred measure.

While I'm sympathetic to other measures of inflation, I think we should maintain credibility based on the preferred measure that we express even though I do respect other measures and think highly of them. I think it's fair to say that inflation is muted. Even more worrisome to me is that inflation expectations by various measures remain low compared with periods over which actual inflation was closer to target. The St. Louis Fed's factor-augmented vector autoregression, or FAVAR, model suggests actual headline inflation will remain meaningfully below 2 percent over the next 12 months. The very weak relationship between labor market activity and inflation in recent years suggests that an impulse to inflation from that channel, should it occur, would be manageable. For these reasons, I think now is a good time to re-center both inflation and inflation expectations at our 2 percent target.

Finally, the slope of the yield curve between the 3-month Treasury rate and the 10-year Treasury yield remains inverted. Recession probability measures based on spreads remain elevated, and in this regard, I agree with Governor Clarida. The spread between the 2-year Treasury yield and the 10-year Treeasury yield is not inverted yet because markets expect us to ease at this and upcoming meetings. For this reason, I do not yet take a negative signal from the 3-month-to-10 year spread inversion, but it has been 60 days, and I think we need to follow through and lower the policy rate here. My hope is that the yield curve will return to a more natural upward slope in the months ahead. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Mester.

MS. MESTER. Thank you, Mr. Chair. Overall, the reports from District contacts suggest that economic activity in the Fourth District slowed in recent weeks, but business sentiment has improved, and the majority of our contacts expect growth to remain near trend for the remainder of 2019. The Cleveland Fed staff's diffusion index of business conditions fell from 17 in June to zero in July. This decline was largely driven by the manufacturing and freight sectors, and contacts said recent slowing was at least in part due to activity being pulled forward into 2018 to avoid expected increases in tariffs on imports from China. Slower growth abroad was also cited. Although there's continued uncertainty about trade policy, it seemed to be less of a concern among our contacts than it did at the time of our June meeting, and few contacts reported making material changes to their capital spending plans in response.

District labor market conditions remain strong. The unemployment rate has moved down ½ percentage point since the start of the year and stood at 4 percent in June. This is a new low for the unemployment rate this expansion and well below the Cleveland staff's estimate of the unemployment rate's longer-run normal level. Year-over-year growth in payroll employment in the District was about ½ percent in June. While somewhat lower than earlier in the year, payroll growth remains above the Cleveland staff's estimate of its longer-run trend.

Except in the freight and manufacturing sectors, District firms continue to report they're having trouble finding workers to meet current demand. For example, a commercial construction contact in Kentucky noted that competition is so intense that if a firm hires 4 skilled workers, 3 of them will be gone within 60 days, having gotten better offers from other firms. In another case, a community banker from northwestern Ohio reported that a local manufacturer would be happy to hire 10 additional workers if only he could find them. Tight labor market conditions in the District have continued to put upward pressure on wages, especially those of lower-wage workers. However, price pressures at District firms appear to have moderated, partly reflecting lower steel prices and shipping costs. The prices received index, which was very elevated in the second half of last year, has fallen over the past two months to levels seen in mid-2017.

Regarding the national economy, incoming data over the intermeeting period were largely positive. These indicators include the June data on payrolls, retail sales, orders of nondefense capital goods excluding aircraft, and CPI inflation. In addition, although there remains uncertainty surrounding trade policy and tariffs, these concerns have tempered. A slowing in real GDP growth in the second quarter was anticipated, on account of the contribution that inventories and net exports made to first-quarter growth. But second-quarter growth turned out to be better than expected at the time of our June meeting, another piece of positive news. And growth in real disposable personal income was revised up significantly in the first quarter, indicating faster growth in compensation, which should support consumer spending.

While business investment and manufacturing activity remains subdued, we have seen some firming over the past couple of months, and housing market indicators may be stabilizing, albeit at a low level of activity. Financial conditions remain accommodative. The Chicago

Fed's index indicates that financial conditions are more accommodative than at the beginning of this year and for most of 2015 to 2017. Stock market volatility has declined, and the S&P 500 index has set multiple record highs over the intermeeting period, suggesting that equity investors are not that concerned about the outlook. The low levels of longer-term Treasury yields and other sovereign debt yields suggest these investors have more concerns, but the relatively low levels of corporate debt spreads also suggest these concerns are not severe.

Labor market conditions remain strong. The rebound in payroll growth in June after a weaker reading in May puts average monthly job growth at about 170,000 over the past three months and for the year-to-date. This is a step-down from last year's strong pace of over 220,000 per month, but it's well above trend. The unemployment rate is 3.7 percent, near a 50-year low. It has been running at or below 4 percent for the past 16 months. The labor force participation rate has been near 63 percent over the past three years despite a downward trend driven by demographics. Growth in average hourly earnings has remained stable and is at a higher level than a few years ago. Cleveland staff analysis, which updates analysis from the Atlanta Fed using their wage tracker data, indicates that in recent months, wage growth has picked up more for job stayers than for job changers. This, together with stability over the past year in the JOLTS quits rate, is consistent with reports given by business contacts that the tightness in labor markets has made them focus more on retaining the workers they have.

Inflation is running below our 2 percent target, but recent readings have begun to firm. PCE inflation rebounded to 2.3 percent in the second quarter, and core PCE inflation moved up to 1.8 percent. Over the past year, trimmed mean and median measures based on either PCE or CPI inflation have been generally stable and have averaged 2 percent or higher. For example, in June, median CPI inflation was 2.8 percent, and trimmed mean CPI inflation was 2.1 percent.

The Cleveland Fed’s experimental median PCE inflation measure was 2.7 percent in June. Long-run inflation expectations have remained broadly stable, but several measures have ticked up since our previous meeting. Market-based inflation compensation readings edged up, while the Cleveland Fed’s five-year, five-year-forward measure of inflation compensation was little changed between May and June.

At the time of our June meeting, there had been concerns about a softening in the latest monthly readings of longer-run household inflation expectations from the University of Michigan and New York Fed surveys. The latest readings in each survey moved up. Now, to better understand inflation dynamics over recent years, the Cleveland staff adopted Stock and Watson’s methodology to construct cyclical and acyclical components of core PCE inflation based on a finer disaggregation of the data than in other research. Instead of 14 components, they looked at 154 components. The cyclical component of core inflation, which by definition is correlated with measures of labor market slack, accounts for about 40 percent of core PCE.

Results based on the finer disaggregation reveal that cyclical core PCE inflation has continued to rise as labor markets have tightened. This resolves a puzzle in earlier results, which were based on less-aggregated data, that suggested that the cyclical component began to flatten out in 2017 despite ongoing improvement in the labor markets. Cyclical core PCE inflation is now essentially back to its pre-recession level, and over the past three months it’s been running at slightly above 3 percent, its highest level in the post-crisis period. The Cleveland Fed staff’s vector autoregression (VAR) analysis indicates that cyclical inflation will continue to firm, which should help overall PCE inflation return gradually to our 2 percent objective.

On balance, I view the incoming information on the economy as consistent with my modal forecast of output growth slowing toward trend, which I estimate at 2 percent; a strong labor market with the unemployment rate remaining below 4 percent; and inflation gradually rising to 2 percent. While there remain downside risks to the forecast, including slowing global growth, the trade situation, geopolitical concerns in the Middle East, and a potentially disorderly Brexit, in my view, there's less risk that a significant weakening of the economy could be emerging, and it's more likely that the U.S. economy will continue to show some resiliency to possible negative shocks. In this context, as I did at our June meeting, I continue to prefer to gather more information on how the economy is evolving and continue to assess our outlook and its associated risks before making any adjustments in our policy rate. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Daly.

MS. DALY. Thank you, Mr. Chair. Since our last meeting, data on the real economy have been largely positive. Consumers are spending, firms are hiring, and workers are being drawn into the labor force. And, as President Rosengren noted and President Mester echoed, some of the uncertainties that we were worried about have been tempering a little bit. These developments affirm the underlying momentum in domestic growth and increase my confidence that the expansion will be sustained and that we are resilient to the things that we were worried about. This characterization is echoed by my contacts, who are still executing on what they call their plan A's but are making sure that their plan B's are still ready—right in front, in fact.

I know there's a lot of disagreement around the table about this, but I view the news on inflation as less bright. Friday's GDP release showed that, over the past four quarters, core PCE prices have risen only 1.5 percent. Of course, as the Board staff notes, some of this weakness may be transitory. And recent signs of modest firming in the monthly inflation series are encouraging. But we have seen several false victories during the expansion, with inflation briefly hitting our 2 percent target only to slip back down again. So these positive monthly readings do not make me especially confident that we are on track to achieve our inflation goal.

Most importantly, our models of future inflation are not perfect, and I increasingly put weight on the notion that more persistent, rather than transitory, factors are at play. These factors may be hard to pin down in our current models. But the consistent one-sided misses of our inflation forecasts suggest that we should consider their presence and their potential effects even if we don't know yet how to precisely quantify them. And as Governor Clarida mentioned, one possible persistent factor is that we are just wrong on the gaps, that u^* is just lower than we think for reasons that are secular or not yet showing through. This would make the output gap smaller and explain one of the reasons for the consistent one-sided misses of our inflation forecasts.

Whatever the reasons, repeated misses on realized inflation create downside risks to expected inflation. Indeed, in the past few months, inflation option markets have posted notable declines in the likelihood of inflation reaching 2 percent or higher in the next five years. With all of that said, it is still tempting—and you hear this a lot in the public—to discount small misses in inflation even if they persist for many years and especially when they are related to potentially idiosyncratic factors.

A few of my contacts put it this way: "What's a couple of tenths? A tenth here, a tenth there." That's what they like to say. But lessons drawn from the experience of other countries, most notably Japan, provide a cautionary tale, and new work by researchers in San Francisco illustrate the risks. Specifically, they analyzed the response of Japanese inflation expectations since 2013 to monetary reforms implemented under Abenomics. The reform started with an adoption of an explicit 2 percent target for inflation in 2013, followed by sequential QE programs, negative interest rates, yield curve control, and an eventual commitment to overshoot the 2 percent inflation target. The staff analysis in San Francisco shows that, overall, the reforms did little to boost inflation expectations even upon announcement. In fact, after the introduction of negative interest rates, inflation expectations actually fell slightly most likely, or at least somewhat likely, because the move was seen as a negative signal about the BOJ's inflation outlook.

The key "takeaway" from this analysis is that, once the inflation anchor drifts down, it is very hard for monetary policy actions to raise it back up even if you go all in. And I don't think we're Japan, and I actually don't currently share the Board staff's view that the U.S. anchor has already dropped. But I am worried it could drift and that we look more like Japan in the 1990s when they started to see a drift—not like Japan today, when it has drifted quite a bit and it's hard to get it back up. And so with real GDP growth projected to slow to trend in the United States and global headwinds blowing against us, this poses additional downside risks to realized inflation, which then, of course, feeds back into inflation expectations.

Now, thinking about global conditions, let me briefly turn to China, which looms large, especially if you're sitting on the West Coast. There has been a lot of discussion about the question, is China's growth slowing in coming years? And China's reported growth shows a gradual slowdown, but it has been remarkably smooth since 2013. In fact, this was noted in a March Board briefing, which characterizes the greatest moderation ever recorded among two countries. So that's quite an accomplishment. So the question is, can we take the reported statistics at face value? In building on previous work, researchers at the San Francisco Fed tried to provide an assessment of this. They developed an alternative growth index using China's trading partner export data, which is collected outside of China and not dependent at all on China's statistical agencies.

Their alternative index confirms that the official Chinese figures have been implausibly smooth, remarkably smooth. So they are not sure the Great Moderation is as great as it seems. They find that there is much more volatility in the GDP figure since 2013, and they also find—and this is the important part, I think—a much more pronounced slowdown over the past two years than the Chinese data suggest. This supports the idea that China might be slowing more than we think based on simply the published GDP data. It also aligns with the views of my contacts who have many investments in China and travel there quite frequently, and they are telling me increasingly that there is a risk of a greater slowdown in China—not a falling off the charts, but a greater slowdown than you might project simply looking at the GDP data.

The arguments that underlie that are that less-expensive production opportunities in newly emerging markets, along with higher tariffs on Chinese-produced goods, have simply prompted companies with Chinese operations and sourcing activities to shift outside of China and into other countries—Vietnam and Cambodia being two of the beneficiaries. And China still has a hand in many of these industries. In fact, they are funding the development in many of those industries. But the move slowed job and income growth for Chinese workers, and this slows the chance that the Chinese domestic economy will continue to grow, and that its consumption-based move will be as fast as it had hoped. So, on balance, these factors make my contacts and me a little more bearish on China than bullish on China even if the trade disputes are resolved in the way that we hope they will be.

Overall, I see the domestic momentum in the economy as resilient. It showed itself to be resilient. But we are still leaning against slower global real growth and a lot of uncertainty that just changes the name, but it continues to be uncertainty. Now it's Brexit. And if you think about those things, I project that those headwinds will slow our economy to trend growth even if we're moving against it. And with inflation not at 2 percent yet, it doesn't give a lot of impetus for it getting to 2 percent without further policy accommodation. Thank you.

CHAIR POWELL. Thank you. President Bostic.

MR. BOSTIC. Thank you, Mr. Chairman. In my remarks this afternoon I'm going to try to make a case for the claim that we are currently well on track to achieving our dual mandate. The abatement of some of the uncertainties and risks buffeting the economy; the positive profile of recent economic data for job gains, consumer spending, and, in my view, inflation; and, perhaps most importantly, evidence on how firms appear to be navigating these uncertainties give me added confidence in my outlook for the economy. In fact, if it were a submission round, I would be penciling in modest markups to my forecasts of real GDP growth and inflation.

Now, given the uncertainties that still exist and not being one to tempt fate, I am not going to suggest that we hang a "Mission Accomplished" banner behind the lectern before the Chairman's next press conference. But I do think our primary message should be that the economy is, and looks like it will remain, in a good place.

Reports from Sixth District contacts continue to indicate that business sentiment is favorable. Most contacts noted they are on track to meet or exceed their revenue targets for 2019 and that recent developments have not knocked them off course. On balance, firms are slightly more upbeat now relative to the previous two cycles, and I am attributing that modest improvement in sentiment in part to the de-escalation of trade tensions with Mexico and China that happened last month.

I'd like to make a few specific points regarding trade policy uncertainty and its effect on firm decisionmaking. In a recently updated paper titled "The Economic Effects of Trade Policy Uncertainty," researchers from the International Finance Division at the Board find that the recent rise in trade policy uncertainty has been a modest drag on the aggregate level of investment over the past year or so. This conclusion dovetails both qualitatively and quantitatively with the estimates my staff and their collaborators derived from businesses' responses earlier this year to our Survey of Business Uncertainty, or SBU, as we call it. Along with the fact that, historically, our survey responses have been good predictors of actual firm behavior, I take the consistency of our survey results with the International Finance team's analysis as some validation for the information we obtained from this instrument. That's important because of what our recent results suggest about anticipated conditions in the future.

In contrast to a large spike in trade policy uncertainty in June, which would suggest a larger effect on aggregate investment, firms in our SBU panel and throughout my District do not appear to be reacting more intensely to trade tensions and uncertainty. In the July round of the SBU, we asked a broad set of special questions probing firms on how the trade landscape has affected their capital expenditures, their sales revenue, and their employment outcomes over the first half of the year. We further asked about expectations regarding those variables. Our preliminary results continue to suggest modest effects on capital expenditures in line with the responses to a similar question we fielded last year. Further, our respondents indicated only minor effects on sales revenue and employment. Overall, the SBU's Business Expectations Index, which aggregates the results over the responses to capital expenditure, sales, and employment questions, held up in a relatively favorable territory. And, consistent with the staff's trade policy uncertainty measure, this survey's measure of business uncertainty actually fell moderately in July.

Perhaps as noteworthy is that the subindex on capital expenditure expectations remains at a healthy level. These survey results were largely echoed by my contacts and directors. To be sure, there are specific companies and sectors where the effect is significant. One director leads a firm that is definitely a casualty of retaliatory tariffs and slowing growth in Asia, but his experience is not representative. In fact, the conversation about the travails of his business at our board meeting was instructive. He gave a clear indication that hits taken by his company will eventually have downstream effects on his suppliers, even though those businesses are not themselves directly exposed to international trade.

As it happened, some of our other directors, representing health-care and government contractor sectors, are customers of some of those very same suppliers, and they indicated that they will be very happily picking up some of that slack. Though perhaps not a representative conversation, I think that back-and-forth captured the essence of the anecdotal reports over this intermeeting period. Pockets of weakness clearly exist, and they will be felt. But, on average, businesses are moving forward and expect, if not last year's growth in sales, employment, and capital spending, a solid and satisfactory performance on all counts over the next year or so.

I want to be clear that these expectations should not come off as Pollyanna-ish. It is lost on no one that trade tensions have yet to actually come to full resolution, and there is full recognition that tensions could easily intensify. Yet here I have gathered that the protracted period of uncertainty has prompted firms to engage in contingency planning and, in some cases, reconfigure their supply chains as a defense position. Should tariffs and trade restrictions intensify, these firms may be less exposed to the fallout than they might have been, say, a year ago.

Having staked out a relatively sanguine position on one-half of our mandate, let me keep my streak going by pivoting to my read on inflation and inflation expectations. To cut to the chase, I see inflation as trending toward target, and I still see inflation expectations as being reasonably well anchored. I am not convinced that the ex-food-and-energy core PCE inflation statistic has been giving us a very good read on the inflation trend. Because the treatment of outliers in this measure is *ad hoc*, it can still be relatively noisy. And this was the case earlier this year when a sharp decline in financial services prices pushed core PCE inflation lower.

Trimmed mean inflation measures, like those produced by the Cleveland and Dallas Fedderal Reserve Banks, are much more robust to these sharp relative price changes and, as a result, are more likely to reflect the true underlying inflation trend. In fact, in formal statistical tests, these measures are more accurate than measures that exclude food and energy in forecasting inflation a year or so out. It is important, in my view, then, that the Dallas trimmed-mean measure is signaling goal-consistent inflation in the period ahead. And that's been the case officially, at least through May. And this morning's underlying data suggest that it still looks like the trimmed mean is trending at target.

In addition, core PCE inflation continues its rebound—another strong suggestion that the weakness we saw earlier this year was indeed transitory and another data point in favor of a trimmed mean approach. Inflation expectations are at least as important as the current underlying inflation trend in shaping our ability to meet our price stability objective over the longer run. And, like underlying inflation measures, not all measures of inflation expectations are created equal.

My staff compared the inflation-forecasting performance of three different survey measures—surveys of near-term expectations of professionals, of households, and of businesses—with the market-based measures of inflation compensation derived from the Treasury Inflation-Protected Securities, or TIPS. Of the four, the headline and core inflation predictions of professional forecasters tend to be considerably more accurate than those generated by household survey expectations or breakeven market-based measures.

Further, my team found that, over an admittedly small sample, business inflation expectations have been about as accurate as professional forecasters in forecasting future inflation in recent years. The inflation expectations of forecasters are little changed and appear to be reasonably well anchored. The same is true of firm expectations derived from the Atlanta Fed's Survey of Business Inflation Expectations.

In sum, I expect the performance of the economy to continue to be solid and for inflation to progress toward our target. This view substantially colors my opinion about the appropriate policy course or, even more importantly, our communications about the decisions we make at this meeting. But more on that tomorrow. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Barkin.

MR. BARKIN. Thank you, Mr. Chair. At our previous meeting, we flagged downside risks in the environment. Since then, the information we've received suggests that outlook has gotten a bit brighter. Strong employment growth in June lowered the risk that the labor market was lagging. Consumer confidence remains high. Robust data on consumer spending in May and June supported optimistic forecasts of PCE this year.

While trade negotiations are far from settled, the threatened escalation has not happened. The debt ceiling and budget deals have been negotiated. The stock market hit a record high.

Nonetheless, investment was sluggish in the second quarter. Our Fifth District Survey of Manufacturing Activity dropped meaningfully into negative territory. But as I speak to them, I hear that businesses have been more resilient than I had anticipated six weeks ago.

As President Daly suggests, my contacts tell me their investment plans have continued, though, to be fair, with a somewhat more cautious posture. The only exceptions are a couple with significant foreign exposure, reflecting the international weakness we see. This data profile is not inconsistent with a return to trend growth.

We've all been debating what to make of the relatively modest wage growth accompanying our low unemployment rates. I would point to divergence between entry and managerial levels. Entry hiring is very tight, especially for production employees like tellers or retail clerks or food service. Even though you'd expect lower skills late cycle, we hear multiple reports of increases in entry-level wages, most recently Bank of America's move to $20 per hour. The Current Population Survey earnings data support this, with growth at the bottom of the earnings distribution faster than at the median for all demographic splits.

Now, I'd agree, managerial and professional hiring is different. Employers also find that job market tight but can bear the pain of an elongated search. They tell me they're choosing to delay hiring rather than escalate wages, as suggested by the gap in openings versus hires in the JOLTS data. In the tightest sectors like construction, I'm hearing firms turn down or defer work rather than escalating wages and increasing hiring. And the point I'm trying to make is that full employment can and is affecting growth, not just wages.

We, of course, are spending a lot of time discussing inflation. I might offer three perspectives. First, like everyone else, I'd love to have a symmetric distribution around our 2 percent target. I have a hard time seeing current levels as an urgent problem. The past three monthly readings of core PCE are over, not below, our target, at 2½ percent. The Dallas trimmed mean remains steady at 2 percent. The Tealbook's inflation forecast, I believe, still has core inflation over 2 percent for the second half of the year, even with a flat federal funds rate assumption. The first-quarter slow readings had to be affected by the confidence shock we had at the end of last year and its effect on firms' willingness to push and accept price increases. The data certainly aren't perfect, but this close to our inflation target feels really close to me. I liked the Chicago conference comments by Sharon Kozicki of the Bank of Canada, which suggested to me that if we are in the range of our inflation target and headed in the right direction, we shouldn't worry too much.

Second, some indicators of inflation expectations have risen since our previous meeting, perhaps, to be fair, related to changing expectations on our rate path. More fundamentally, as I talk to contacts, I get no sense that they see us off target, nor that their expectations are moving down. I do worry that the more we talk about low inflation, the higher the risk is that we will change that perception.

Finally, to the extent that you see these inflation levels as a problem, I do believe it's a structural issue in the context of anchored expectations. Firms have embedded perceptions about the reaction functions of their competitors and their customers. Over the past couple of decades, they have gotten used to limited pricing power in the environment we've supported. Low-priced big box stores have taken share and driven supplier prices down. Purchasing departments have become more talented and aggressive, leveraging global, lower-cost competitors and private label.

Internet transparency has made it easy for customers to shop around. The growth in government has introduced an ever-larger, low-priced purchaser. The reduction in firm exit rates, perhaps supported by loose lending terms and low interest rates, could be limiting industry rationalization and its resulting effect on pricing power. These pricing paradigms won't change quickly on an aggregate basis. Contacts hear us talk about overall numbers, but their pricing behavior and resulting inflation is being driven more by the supply-and-demand dynamics in their particular sectors.

Are competitors entering or exiting? Are supply costs increasing or decreasing? Are customers and supply markets globalizing or localizing? Can value propositions be defined that capture greater customer surplus? Our moves aren't changing these parameters, or at least not quickly. These structural headwinds are consistent with the long lag we've seen in transmission of policy through to inflation.

Tomorrow I'll come back to the challenge of using moderate moves in short-term interest rates to intervene in these structural dynamics. Thank you.

CHAIR POWELL. Thank you. President Harker.

MR. HARKER. Thank you, Mr. Chair. Regarding the forecast, I am in general agreement with the staff's near-term forecast of economic activity. But I am a bit more confident that inflation will gradually return to target. I still have concerns, like others do, as inflation has remained stubbornly below target. Also of concern is that market-based inflation expectations continue to lie below target. However, as others have noted, some of the recent readings on inflation have shown an uptick, and inflation appears to be moving in the right direction. Even if the pace is excruciatingly slow, it is moving.

The upgrade in the staff's economic projection appears consistent with the most recent data, and I share the staff's view. The upgrade is also consistent with what I'm hearing from contacts in the Third District. Although the Third District did not experience a strong bounceback in employment, unemployment remains historically low, and the unemployment rate has fallen to that of the nation. As well, we are seeing increases in the participation rate.

For manufacturing, our business survey recovered markedly in July, with orders, shipments, and employment returning to healthy territory. The stronger readings are driven by fewer firms indicating they were seeing a decline in activity rather than more firms saying they saw an increase in activity. Price indexes, however, were quite soft.

Regarding the future, respondents are somewhat optimistic. And, as others have noted, they continue to plan for additional capital expenditures and employment growth. One diversified manufacturer, one of our contacts who serves global markets, indicated that the third quarter looks like it's going to remain soft, but he is starting to see a strong pickup in fourth-quarter orders across the globe.

We're also hearing reports of midcycle wage increases in order to retain workers. And it's interesting that people are seeing a lot of wage pressure now in the range of $18 to $25 an hour. However, economic uncertainty, especially concerning trade, continues to weigh negatively on our business community.

Now, regarding services, we saw a rebound in our nonmanufacturing sector as well. However, some of that optimism appears to have waned in the service sector. On the downside, residential real estate markets are moribund, with no sign of pickup in activity. For example, real estate transaction counts have turned down, and they appear to be a leading indicator of housing activity.

A contact indicated that revenue in her building supply business that serves that market is also down. But just as an aside, she did report she had a very interesting week. In one week, she had her first offer to be paid in Bitcoin, and in that same week an Amish customer came in and paid with a barrel of cash. And I literally mean a barrel of cash. [Laughter] So there is a change in technology going on in our society.

As an aside, recent work in Philadelphia and elsewhere has highlighted the continued decline in dynamism in our economy in terms of new business formation and labor mobility, both of which are contributing factors to declining productivity. And I raise this because at our recent policy briefing, we had a very interesting presentation on declining geographic labor mobility. Mobility has been declining steadily for 30 years and is largely the result of decreased out-mobility from the west and the south. This is largely due to the convergence of population growth rates and the increased proportion of the population that is now native to those regions. The increase in the percentage of people who are not only born in those regions but whose parents were born in the region is associated with an increased desire for people to stay put. In some sense, it increases the utility of remaining where one is and, therefore, is part of an optimal household decision.

The study found no evidence that there has been a negative effect on struggling local labor markets or on short-run population movements. It is not that the population fails to relocate when needed, but that there is simply less need to relocate. Thus, the decline in mobility is largely due to these optimal staying positions. And the reason I raise this is, these results and others add to my growing sense that it is these types of structural factors that are increasingly important and, of course, not within our reach given our mandate.

And I think what we're seeing, whether it's these factors or the research on inflation by Stock and Watson and others that President Mester and others have talked about, is that these things seem to not have the same reaction to our moves. And this is something that I think is worthy of further study as we move forward.

So, to summarize, the District's economy is growing modestly, but that growth is almost entirely driven by the consumer, which is exactly what we are seeing nationally. The most recent data have reduced much of the pessimism that I expressed at our June meeting, and it looks like the recovery still has room to run. So more on how that affects my policy stance tomorrow. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chair. My contacts were mixed this round. On balance, they indicate that growth is proceeding at trend or slightly faster, with no inflation pressures. Starting with the commentary about growth, in discussing our discount rate recommendation, a couple of my banking directors reported that their clients in manufacturing and construction were doing quite well. They said concern over the global economy was holding back capital expenditure some but wasn't taking the sheen off of the generally bullish business environment.

Both of the major automakers we spoke to this round were satisfied with the recent pace of vehicle sales. They remain positive about the near-term outlook, with sales in the second half of the year expected to run a little bit above the first-half rate. And a large temporary help agency noted that domestic demand was holding up well, and they weren't making any changes to their outlook for the United States.

Regarding the less positive news, this same temporary help firm reported some pretty bad numbers for their business in Europe, particularly Germany. The weakness did not appear to be intensifying, but they won't be able to tell for sure until they see the size of the seasonal pickup in activity following the regular August vacation downtime.

There also were some downbeat reports about manufacturing activity in the United States, in contrast to what I heard from the bankers. Though I'm not pushing the panic button yet, one of my directors who runs a large manufacturing conglomerate has become more nervous, and many of his counterparts have seen softening demand in recent weeks. And a major steelmaker was quite downbeat. Demand was down in every sector except energy for them. More generally, there is a sense of fragility among my manufacturing contacts. As one major equipment producer put it, although their business is currently doing well, the cumulative effects from prolonged business uncertainties could push the sector into a downturn following one more bad event.

With regard to wages and prices, my temporary help contact continued to see the same modest wage growth in his domestic business that he's been reporting for some time. Although he noted that tight labor markets aren't generating a lot of wage pressure in the United States, he does a lot of business in Europe. And, as he put it, the Phillips curve is alive and well, at least in the Czech Republic, where the unemployment rate is low and wages are growing at a rate of about 8 percent.

On the price front, the steelmaker reported that prices for basic steel products have ticked up a bit in recent weeks but were still down a good deal from last year. He also made a point of noting that prices today were lower than they were just prior to when steel tariffs were invoked in March 2018. Ironic, isn't it? And an equipment manufacturer said that while still high, at least transportation logistics costs were not rising more. So, all in all, I heard nothing from my contacts to suggest building wage or price pressures.

Regarding the national outlook, combining my contact reports with the incoming data, we came up with a fairly decent outlook for growth this year. The numbers we put together are similar to those in the Tealbook, with real GDP rising a bit under 2½ percent in 2019 and the unemployment rate ending the year around 3.6 percent. This is a moderately stronger forecast than I had in June. I also think the near-term downside risks have abated some. True, global uncertainties remain, and they are having a notable imprint on cap-ex, but at least the latest orders numbers look a little bit better. Furthermore, businesses aren't showing any hesitancy in hiring, which reduces the risk of global uncertainties spilling over to the consumer sector. I almost feel like I should be on that side of the table. [Laughter]

And the downside risks from the potential 2019 fiscal cliff now appear to be off the table. However, over a longer period, there still seems to be an ongoing fragility in business confidence that could spark material cutbacks in activity if trade talks or other headline events turn sour. It does seem that important downside risks remain, but it's hard to envision any notable potentially offsetting upside tailwinds.

What about inflation? We have had a couple of good monthly readings on consumer prices. That's encouraging. The incoming data have pushed our time-series model forecast up somewhat, but the model still generally projects inflation to be flat at around 1¾ percent, similar to the Tealbook's low underlying trend. And there simply isn't any meaningful evidence of building inflation pressures. As I noted, wage growth is modest, and commodity prices are restrained. And TIPS breakevens and other indicators of inflation expectations have not moved in any meaningful manner. They are still too low.

Our forecast has inflation moving up to target and then overshooting some by 2021, but this relies on aggressive policy actions, including an explicit acknowledgement of policies aimed at lifting inflation to its symmetric target. Indeed, if we don't do something definitive soon or get bailed out by simple luck, I fear inflation will remain mired below target for the foreseeable future. More on this tomorrow. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. Our Dallas Fed base case for 2019 U.S. GDP growth is now approximately 2 to 2¼ percent. This forecast has been adjusted downward over the past three months, primarily because of the effect of heightened trade tensions and decelerating rates of global growth. I would emphasize, though, that much of the deceleration in growth from 2018 and 2019 was expected because of the waning of fiscal stimulus. So even though the trade tensions weren't expected, we did still expect growth to decelerate.

In the June meeting I said the risks to our forecast were to the downside. My own sense today is that, due to the strength of the U.S. consumer and some time for businesses to adjust psychologically to heightened uncertainty, the U.S. growth outlook is stabilizing, although there's still, based on discussions with our contacts, an underlying fragility, which is affecting business investment.

To that point, contacts in the 11th District particularly cite the threatened trade tariffs against Mexico as having been the event that really jarred their thinking about the economic outlook for their businesses. While China and other trade uncertainties certainly had an effect, it was the estimated financial effect of the tariffs on Mexico, if they'd been enacted, that would have had a material effect on a number of businesses that we speak with. And they haven't yet recovered; the jarring effect of the threat has made them begin to believe that trade uncertainty, even with countries we have trade agreements with, is likely to be a persistent feature of managing their businesses.

As a consequence, many describe actions to revisit capital spending, reassess supply chains and logistical arrangements, and generally operate in a much more cautious manner. With these conversations and our Dallas Fed surveys, all of this has convinced me that trade uncertainty now is just more likely to be a more persistent headwind for economic growth and uncertainty is going to be with us. I was hopeful that trade uncertainty would be more positively resolved. But I also believe that businesses have a real capacity to psychologically adjust to this. And because of that, most of our contacts report a solid business outlook, albeit at a more moderate pace than in 2018 and certainly a more moderate pace than they might have expected just three or four months ago.

Our Dallas Fed contacts continue to report difficulty finding workers as a top challenge. This is particularly for companies in the more rural parts of our District as well as smaller companies that are unable to offer promotion opportunities, certain types of employment benefits, as well as a level of job security and stability that can be offered by larger companies. Across the board, company contacts report to us needing to pay higher wages at the low end—and I mean the $12 to $15 range as the low end—as well as for skilled workers, but larger companies report no substantial issues in finding or retaining workers to fill jobs in the middle. And by the middle, I mean $25 per hour plus benefits.

Regarding inflation, our Dallas trimmed-mean measure of inflation, which we recalculated in response to this morning's releases, continues to run at approximately 2 percent. We continue to expect it to end the year in the neighborhood of 2 percent. I would continue to emphasize differentiating between the cyclical and structural aspects of inflation. I believe with growth at or above potential, cyclical inflationary forces continue to firm.

I continue to believe, however, that an intensification of the structural forces of technology, technology-enabled disruption, and globalization are limiting the pricing power of businesses. And to the extent our contacts are experiencing wage pressure, they report to us it's just as likely these pressures are going to translate into margin erosion rather than price increases.

I would say that a substantial number of our contacts are recently pointing out to us and to me that they have a number of issues with trade uncertainty, global growth deceleration, challenges with their workforce, and competitive pressures, but they emphasize—a little more vocally recently—that availability and cost of capital are not among their operating concerns.

And, increasingly, some of our contacts are citing low cost of capital as potentially having a negative effect on their industry dynamics. And what do they mean by that? Allowing zombie companies to continue to survive. Lowering the discount rate for those competitors who are not making a profit and who are disrupting their businesses and, by and large, undermining capital discipline. I am hearing that raised by our business contacts more.

Having said all of that, basically what you're hearing from me is, I am, I guess, sanguine about real GDP and inflation. There is one thing out there that I am increasingly concerned about, and Governor Clarida talked about, and that is market-determined interest rates vis-à-vis the federal funds rate.

First, as has been mentioned, we all know that a material percentage of government bonds globally are now negative yielding. In addition, apparently in response to recent trade tension intensification and decelerating rates of global real growth, U.S. Treasury yields have declined, all along the curve. I am sensitive to the possibility that some of this—just some of it—may be a response to central bank rhetoric. But I believe that a good bit of the decline, along with the inversion of the 3-month/10-year yield curve, is due to an expectation of diminished prospects for global growth. And I have begun to believe that this situation is likely to persist and is worth paying attention to in thinking of prospects for future economic growth and in formulating monetary policy. This is a nice way of saying that the level of the federal funds rate is out of alignment with the rest of the Treasury curve.

Now, if I look at this a different way and just step back—with my team, we have gone back and looked over the past number of years of economic growth, and we looked at pre-2017. For a number of years we were basically in a 2 percent growth economy, maybe a 1¾ to 2 percent growth economy. And what happened in 2017 is, we had the prospect of fiscal stimulus; we had the actual passing of substantial fiscal stimulus. Before that prospect of fiscal stimulus, I have to remind myself that the target range for the federal funds rate was at 25 to 50 basis points. We then had our increases in 2017 and 2018. We got to a range of 2¼ to 2½ percent.

In my view, we are now—I am not thrilled with the way we have gotten here, because of trade tensions, but—we may now well be in a 2 percent, maybe 2¼ percent growth economy. The question, then, before the house is, in that regard, and setting aside the fiscal stimulus that we have experienced over the past couple of years, are market-determined rates out of alignment with this growth potential of the U.S. economy?

In my own view—and I've looked back to what Treasury interest rates were in 2016 and 2015—I'm not sure today's rates are out of alignment with that. I do think the federal funds rate, though, is out of alignment with those rates, and I do believe we're at the point at which it's worth paying attention to, because I believe if this situation is allowed to persist, it will ultimately affect financial conditions negatively, which in turn will create headwinds for economic growth. And so that's the big issue that I think should be addressed, which we'll talk more about tomorrow. Thank you, Mr. Chairman.

CHAIR POWELL. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. The outlook for the 10th District economy is little changed since our June meeting. Business contacts remain positive, while noting a slower and more typical pace of growth compared with 2018. Our surveys of services and manufacturing activity reported flat activity in June and July, but the majority of contacts tell us that they have not changed their plans for 2019.

District employment continues to expand at a moderate pace across our seven states. Unemployment rates remain at historically low levels, and labor force participation rates have stabilized for prime-age individuals. Given the current stage of the business cycle, job gains remain quite healthy, with employment growth exceeding population growth in each of our states.

Like the nation, the region's residential construction and real estate sectors have slowed. Single-family permits are down about 16 percent compared with last year. And, although slightly below year-ago levels, home sales have improved over the past couple of months. Home prices continue to rise in every District state, but the pace of appreciation has slowed.

Oil price volatility has increased in recent months, as markets weigh concerns about demand and geopolitical tensions. With oil prices just above breakeven levels, and natural gas prices well below, the District's energy sector is not expected to contribute significantly to growth. Likewise, the agriculture sector shows no signs of a turnaround, with adverse weather issues and unresolved trade disputes with China.

Regarding the national economy, my outlook is relatively unchanged from our June meeting. Incoming data suggest that the economy is expanding at a moderate pace but, as anticipated for some time, with less momentum than the stronger pace of growth last year. I expect real GDP growth to stabilize close to its trend rate in the medium term, the unemployment rate to stay at its current level, and inflation to remain subdued.

The expansion relies heavily on solid growth in household spending. Recent readings on household consumption, in particular spending on durables, have rebounded from their weak readings in the first quarter. This bounceback in spending, coupled with continued high levels of consumer confidence, suggests that consumers generally feel optimistic about their economic prospects.

Importantly, household spending continues to be supported by a robust labor market. The strong reading on June payrolls was a welcome rebound from the weak May report, suggesting that over the past three months employers added, on average, 170,000 jobs per month to their payrolls. This deceleration in payroll growth remains consistent with my modal outlook, which calls for a gradual deceleration of employment growth to levels more consistent with the pace of labor force growth by the end of 2020.

In contrast to the relatively healthy consumer sector, both residential investment and some components of business investment have been a drag on real GDP growth. Residential investment contracted during the first half of this year, and new orders for core capital goods have been below shipments for six of the past seven months. This weaker investment picture is consistent with the June National Federation of Independent Businesses (NFIB) survey, where the fraction of small businesses reporting a capital expenditure during the past six months has declined since the start of the year. Still, the net fraction of firms planning to increase employment in the next three months remains near its post-recession peaks. I hear a very similar story from my own business contacts.

Weakness in business investment is consistent with a weaker global outlook. And spillover to the U.S. manufacturing sector has shown up in the new export orders component of the ISM manufacturing index. By contrast, current production and employment indicators in the services sector seem to be healthy and generally consistent with an economy slowing toward trend.

The United States continues to import low inflation, and I expect this disinflationary influence to continue throughout the forecast horizon. Goods prices in the PCE price index continue to show deflation, owing to the large appreciation of the dollar and the resulting drop in import prices that began early last year. In contrast, services prices continue to rise at a stable rate over 2 percent.

While I still see risk around my outlook for both real activity and inflation as tilted to the downside, I have been encouraged to see some firming in U.S. economic data since our June meeting, and fears of an escalation in U.S.–China trade tensions have been somewhat alleviated. The successful negotiation of a deal to increase federal spending and lift the debt ceiling is also a positive sign. The contours of weak business investment and a weak global outlook against the backdrop of healthy consumer spending and a strong labor market are reminiscent in a number of aspects to the 2015–16 period. During that time, resilient consumer spending sustained the economic expansion despite global headwinds and a slowdown in investment.

Obviously, such an outcome cannot be assured in the context of today's dynamics, so careful monitoring of these downside risks remains important in judging the appropriate stance of monetary policy in the months ahead. Thank you.

CHAIR POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Mr. Chair. My baseline outlook for the domestic economy has not changed since the June meeting. I continue to expect output growth will slow this year but remain near or a little above its trend, and that the labor market will continue to show strength, with the unemployment rate holding near its current historical low.

With regard to prices, incoming data confirm that the dip in inflation early in the year was transitory, but the pickup in monthly price increases in the second quarter was smaller than the staff had been anticipating. In particular, the 12-month change in core PCE prices through the end of June was just 1.6 percent. The year-over-year changes are expected to rise to 1.8 percent this summer and to hold there through the end of the year. If this occurs, it will be close to where I had expected we would be back in June.

In my assessment, some of the potential downside risks to the outlook have eased in recent weeks. For one, we saw a large increase in the payroll numbers in June, which appears to have confirmed that the May figures were not the precursor of a more material slowdown in job growth. Averaging over the first six months of the year, payroll gains have been about 172,000 per month, which is a healthy amount that is sufficient to accommodate new entrants into the workforce without pushing up unemployment.

Other indicators of labor demand also continue to signal strength. Further, the near-term risks related to negotiations over the debt ceiling may be resolved with the pending two-year federal budget deal. In addition to removing the near-term uncertainty about lifting the debt ceiling, the top-line budget authority levels in the agreement imply that government purchases will continue to contribute positively to real GDP growth in the current and coming years.

And, finally, fears of escalation in trade tensions have faded somewhat since the June meeting, partly because of the discussions at the G-20 meetings in June. These discussions were viewed by many as moving in the direction of an eventual agreement. Even so, trade tensions remain elevated, and the outlook for trade agreements remains uncertain.

Concerns about the slowdown in foreign activity have persisted. Although the outlook for activity in Canada brightened a little, the staff forecasts for the economic performance of several important trading partners, especially China and the United Kingdom, have been downgraded again. And, in the United Kingdom, this is complicated by new leadership and Brexit uncertainty.

There's also evidence that the uncertainties about global demand and trade policies are leading domestic businesses to delay or pull back on their planned investments. U.S. manufacturing output has been declining so far this year, and indicators of business sentiment and the data on new orders are pointing to weakness in business investment in the second half of this year.

It seems likely that the softening in activity in the business sector is tied to trade tensions and concerns about demand from abroad. I've heard from several business contacts who are concerned about the upward cost pressures on their supply chains from abroad. I've also heard worries that export demand has weakened. And, to be sure, the incoming data suggest that economic activity abroad has continued to deteriorate, and this will present risks to the activity here at home.

In addition, I continue to be concerned about the outlook for the agriculture sector. Agriculture producers, particularly farmers, continue to face significant challenges, and, overall, conditions have not improved. The extreme flooding and continued wet conditions in the Midwest and other regions have resulted in significant delays in planting, decisions to replant due to washed-out fields, or in some cases farmers have simply not been able to get seed in the ground, with waterlogged fields not being able to support the weight of planting machinery and tractors.

On the brighter side, I have seen evidence in my recent travels and heard reports from farmers that despite the unfavorable conditions, crop growth, particularly where corn was planted, has surprised to the upside, and there is optimism for decent yields and higher commodity prices. Even so, the outlook for this year's harvest is still highly uncertain, and many producers will rely heavily on the U.S. Department of Agriculture farm program payments.

Another weak year for crop production will compound existing financial pressures for many farmers. Opportunities to export farm products have likely diminished, on account of the emergence of trade replacement routes and continued oversupply of commodities in recent years. There have been some positive developments on the pricing front. Corn prices, in particular, have moved up in recent weeks, likely reflecting the downgraded outlook for U.S. production. Even so, financial pressures on farmers continue to gradually increase. Nonperforming loans have continued to edge up, carryover debt has continued to rise for many borrowers, and loans have continued to be restructured because of cash flow shortages.

In some cases, farmers with long-paid-off land are amortizing operating debt over decades, secured by that equity. While land values continue to hold at strong levels—and some reports indicate that they have increased—struggling producers who are determined to continue operations are taking on longer-term debt commitments in hopes of better outcomes.

Elsewhere, the national statistics continue to suggest that households are faring well. Consumer spending growth rebounded strongly in the second quarter following the first quarter lull, and real disposable income is reported to have increased 3.2 percent over the past four quarters, a strong foundation for further gains in consumer spending in the second half of this year. Readings on consumer sentiment have also remained upbeat.

In summary, while I have maintained my optimism that the U.S. economy is fairly well positioned to withstand the current economic headwinds from softening demand from abroad, I acknowledge that the downside risks have remained prominent. In particular, I see a risk that if the period of heightened uncertainty is prolonged, businesses will become more cautious and pull back on their long-term plans for hiring and capital investment, generating further negative feedback effects. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. Regarding the local economy, growth in the Ninth District is characterized as modest. Most sectors are reporting doing well. Like in other regions of the country, firms are reporting difficulty hiring, with anecdotal evidence that firms are increasing overtime and overlooking attendance issues. One staffing firm reported that "worker attendance has never been worse, and our percentage of no-call, no-show, and walk-offs has never been higher." We heard some evidence from contacts of wage increases of around $1 an hour, around 8 percent, at typical low-wage jobs. It seems like low-wage workers have a lot of choices today, which is good.

On a less positive note, manufacturing in the District is slowing. Several firms are reporting expansion plans being put on hold, and contacts point to uncertainty about market conditions amid trade tensions. And, throughout my region, the concerns in the agriculture sector, as Governor Bowman just said, are widespread. They've been going on for years.

In the national economy, the intermeeting news has generally been positive, but inflation continues to run below target, and risks to the outlook remain large and tilted to the downside. Core inflation remains below target, as others have noted, with 12-month core PCE inflation coming in at 1.6 percent. Market-based five-year, five-year-forward inflation compensation has risen a bit since the June meeting but remains quite low by historical standards.

Regarding the real economy, Friday's GDP report confirmed that consumption growth remains strong, but it also confirms that investment is very weak, and concern over trade tensions is likely playing a significant role. No dramatic developments in the labor markets. Nonfarm payrolls bounced back in June from the weak May reading. Average hourly earnings growth remains stable, around 3.2 percent. The fact that wage growth is not rising indicates to me that the labor market is not overheating, and slack likely remains.

Let me just take a second to endorse the Chair's very clever comment in his testimony: "To call something 'hot,' you need to see some heat." I couldn't have said it better myself. [Laughter] A slowdown in the global economy seems ever clearer. The Tealbook has marked down Q2 forecasts for China, Mexico, and the euro zone. Inflation expectations appear to be falling globally. On Thursday, Mario Draghi described the euro-zone outlook as "getting worse and worse," with manufacturing especially hard hit. The global PMI for manufacturing has dipped below 50, indicating likely contraction.

Another indicator of a weak domestic and global outlook is low, long-term interest rates. The 10-year TIPS yield declined from over 1 percent around the end of last year to around 25 or 30 basis points today. This echoes comments from President Kaplan suggesting the neutral interest rate is very low. So if we take a 10-year neutral rate of around 25 or 30 basis points, that says to me the neutral overnight real rate could be around 0 or maybe even negative. If the neutral overnight interest rate is 0, with inflation of around 1½ or 1¾ percent, that suggests that monetary policy is maybe 75 basis points, contractionary at this point. I don't think that we should be in a contractionary policy stance.

So, in summary, the U.S. economy seems to be doing okay overall, but businesses seem somewhat pessimistic. The global economy is weak, posing a threat to the continued U.S. expansion. Inflation continues to run below target, and monetary policy appears to be contractionary. Thank you.

CHAIR POWELL. Thank you. Governor Brainard.

MS. BRAINARD. Thank you. I've been broadly reassured by developments since our June meeting. Incoming data have confirmed consumer spending and employment are solid, financial conditions have been supportive, and important sources of policy uncertainty have been resolved.

While global growth remains subdued, foreign authorities have pledged to provide additional support, and the important risks surrounding the leadership transition at the ECB have been resolved favorably. Even inflation expectations have improved, although it's too early to take much comfort from this.

Against these positive developments, inflation remains below target, and business investment remains soft. Let me briefly touch on each of these points. The economy has been doing well, bolstered by confident consumers and a strong job market. Real GDP rose at a 2.1 percent annual rate last quarter following a 3.1 percent gain in the first quarter. And consumer spending posted an annualized gain of 4.3 percent last quarter. Recent data revisions boosted compensation notably, providing a positive support to consumer spending that will carry forward into the second half of this year. By contrast, equipment investment by businesses has been lackluster, and indicators of business sentiment have been soft, with the notable exception of President Harker's District. [Laughter]

The June job market data similarly provided reassurance that employment has continued to expand at a healthy pace. Payrolls have risen at about a 170,000 monthly pace over the past three months—more than enough to provide jobs for new entrants. The unemployment rate remains near a 50-year low, wages are growing a moderate pace, and the percentage of prime-age adults who are employed is close to its pre-crisis peak.

Importantly, initial claims for unemployment insurance have continued hovering around historic lows. After fluctuations earlier in the year, financial markets currently are more conducive to near-term growth in economic activity than they were early in the year, with borrowing rates low and the stock market at all-time highs. And, as of late last week, equity prices were up about 3 percent since our last meeting. Spreads of corporate bond yields over Treasury security yields were down 20 to 30 basis points, and the dollar had depreciated about ½ percent. The 10-year Treasury yield is little changed from the last time we met.

As we turn from the outlook to the distribution of risks, recent weeks have seen important downside risks recede. The recent G-20 summit provided a critical shift in the landscape of potential trade conflict. While most observers now put little weight on the possibility that tariffs will be lifted, the prospect of a significant escalation of trade conflict with China has diminished notably.

In addition to the reduction in trade tensions, the budget deal removes a very significant source of downside risk that was clouding the outlook for this year and next. The deal between the Administration and the Congress removes the threat of a near-term default and the sharp fiscal drag that would have resulted from the reimposition of sequester caps over the next two years.

Despite the constructive change in tone on trade, business sentiment and investment plans will likely remain sensitive to uncertainty about trade and the global outlook. With the notable exception of Canada, the incoming data on activity and foreign economies continue to paint a disappointing picture. China posted a particularly weak second-quarter GDP reading. Purchasing managers' indexes in many countries suggest outright contraction in the manufacturing sector. And Germany's export-intensive growth has been weak, with the auto sector projected to exert a drag through the end of the year.

Against the backdrop of that ongoing weakness in activity and shortfalls of inflation, a number of foreign central banks have added accommodation or indicated they would do so soon. This broad-based global easing should help bolster demand as it gains traction.

Over the past month, Europe has successfully navigated a set of major leadership transitions. The ECB leadership transition removes a major risk by doubling down on the current policy posture and augers well for a continued proactive accommodative posture in the critically important euro-area economy.

While the dollar depreciated over the intermeeting period, perhaps reflecting some reversal of earlier flight-to-quality pressures, the ongoing weakness abroad and resultant accommodation by foreign central banks suggest some risk of a future reversal of this depreciation.

Downside risks remain, especially from abroad. I've already noted risks from China and Germany. The choice of the new British prime minister appears to increase the probability of a no-deal Brexit. Against this backdrop, many indicators of the risk of recession remain somewhat elevated, although they have generally come down since earlier in the year. That's true not only for models that rely on the yield curve slope, but also for those that incorporate a broader set of indicators. And I'll continue to watch those recession probability indicators carefully.

This morning we received the June reading on PCE prices. We saw core PCE prices increasing 0.2 percent in June, and they are up 1.6 percent from a year earlier. While inflation has been disappointingly soft this year, on a three-month basis there is some evidence of rising momentum.

The Board staff model that separates common from idiosyncratic factors affecting inflation suggests an increase of 1.75 percent in common core inflation over the past 12 months, and the Dallas trimmed mean measure of inflation is coming in still around 2.0 percent. We've also seen some encouraging developments on inflation expectations. The latest reading from the Michigan survey was the strongest we've seen in some time, and inflation compensation has also moved up. Three-year expectations in the New York Fed Survey of Consumer Expectations also ticked up.

Nonetheless, recent developments still suggest underlying inflation is running below our 2 percent objective, and it has done so over the past several years. A variety of statistical filters suggest underlying trend inflation is running around 1.8 percent, short of our target, and we need to remain visibly committed to moving inflation back up around 2 percent on a sustained basis.

So, overall, the incoming data on the real economy are looking better than they were the last time we met. And some important downside risks, notably for trade and fiscal policy, have receded, at least for now.

I see the case for providing additional accommodation today relative to the case for watchfully waiting as finely balanced. With financial conditions predicated on expectations of easing, I support proceeding with an adjustment in the policy rate, along with an end to the balance sheet roll-off to provide some insurance against those downside risks in the context of persistently soft inflation. In coming periods, however, we risk being pulled by market expectations rather than guided by the data. So it is important to use the occasion of this cut to gently realign market expectations and regain some optionality.

As I will discuss tomorrow, I don't currently see a need for further stimulus, and I'm somewhat reluctant to repeat the language that we used in June, which clearly signaled tomorrow's cut. And I'd like to see whether we can find some language that recalibrates us a little bit back to the May–June statement. But that is tomorrow's discussion. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you. And please note, Chairman, that after the Mahabharatan length of my first two interventions, my comments here are going to be mercifully brief. [Laughter]

MR. CLARIDA. There will be a quiz. [Laughter]

MR. EVANS. There was a gesture over there.

MR. QUARLES. The macroeconomic environment seems as uncertain as at any time during my tenure on the Board. Some aspects of the domestic data look quite good. The labor market continues to be the best in generations, with low unemployment, better-than-expected labor force participation, and wage growth that's not far from its pre-crisis trend. Obviously, with the labor market doing so well, it's not surprising that consumption has remained robust, with second-quarter measures growing at one of the fastest rates in the past decade.

On the other side, there are some domestic sectors that are a source of concern. In particular, as Governor Brainard and a number of you have noted, investment in equipment was almost flat through the first half of the year. And there are growing signs, as Shaghil discussed in the international briefing, that trade uncertainty is starting to weigh on investment plans.

On the other hand from that, some of the most recent indicators—including the June advanced durables report—have popped up. I had thought, as President Kaplan suggested, that the threat of tariffs against Mexico in early May seemed to have moved us into a new normal of permanent trade uncertainty. However, the most recent indicators suggest that the threat of tariffs had a shock effect that may be fading.

Now, the staff expects weakness in investment to persist, with a forecast of flat business investment in the second half. I think it's significant that, as the Tealbook describes, this forecast is taking a lot of signal from a sharp decline in analysts' expectations for longer-term profit growth. But this drop in profit expectations just reflects a turnaround from the sharp increase in growth expectations that followed the 2017 tax cuts. I think there's a possibility that the sharp step-up in profit growth expectations following the tax cuts might be the anomaly here, as the tax cuts should have mostly affected the level of profits rather than the growth rate.

So, overall, I think that the decline in profit expectations might be less informative than normal in the current circumstances, and that there might be some upside risk, as the economists say, to the staff's outlook for falling investment. I am not giving up yet. So while the balance of domestic data is somewhat cloudy, the global economy more broadly is looking increasingly fragile, I think. Manufacturing data continue to disappoint. Growth appears to be slowing across a number of countries and regions.

Trade tensions are likely a contributor to the slowdown but are probably not the whole story. In particular, it looks like autos, which have, at least up to now, largely avoided tariffs, have taken a hit across the advanced and emerging economies. More directly, weak foreign activity weighs on exports. But apart from that quantitative effect, a fragile global outlook is also likely to depress business confidence and lower investment.

As a final remark, I would simply note, in response to President Harker's interesting comment about the lack of outflow of population from the west, which is an entirely sensible fact, there does not, however, seem to be any decline in the flow within the west of people from

California into Utah, which I view as a major policy problem, but perhaps not one for this group. [Laughter] Tomorrow I will discuss my view on the policy implications of the other factors I've covered today. Thank you.

CHAIR POWELL. Vice Chair Williams.

VICE CHAIR WILLIAMS. Thank you, Mr. Chair. I will ignore the disparaging comment about Californians. [Laughter]

MR. KASHKARI. As somebody who left California. [Laughter]

VICE CHAIR WILLIAMS. First of all, Mr. Chair, is it possible to get another flag? Because I feel I would like to be a little closer to the flag [laughter] than to the map right now.

CHAIR POWELL. We'll get to work on that. [Laughter]

VICE CHAIR WILLIAMS. Thank you. Economic data since our June meeting paint a picture of an economy growing at a moderate rate, although with very mixed signals across sectors. Robust consumer spending is balanced by weakness in housing, business and fixed investment, and exports. And I take more signal from the signs of slowing investment than from the free-spending consumers. And I expect second-half growth, like the Tealbook, to step down to around trend rate.

Indicators of inflation and inflation expectations have been uncomfortably subdued. And looking beyond our borders, the global outlook for growth in inflation has continued to darken. The poor showing of business fixed investment, the decline in exports, and ongoing weakness in manufacturing suggest that the realities and uncertainties of trade policy, and of the state of the global economy more generally, are adversely affecting businesses' willingness to invest. Although press reports of the trade skirmishes wax and wane, business contacts tell me that the pervasive uncertainty around trade and other policies is unlikely to go away anytime soon, and they are acting based on that assumption.

Regarding the global outlook, the news over the intermeeting period, including the most recent PMIs, has been discouraging. The latest IMF World Economic Outlook Update downgraded its projection for global growth and highlighted mounting disinflationary pressures with risks tilted to the downside. In particular, the risk of a no-deal Brexit has moved to the forefront. The situation in the euro area is particularly troubling. As already mentioned, Mario Draghi said in his press conference on Thursday that the outlook for the euro area is getting "worse and worse."

In response to these continuing fragilities, the ECB and several other central banks have either adjusted or indicated they soon will adjust the stance of their monetary policies to provide more support for their economies. However, on account of the already highly accommodative stance of policies in many jurisdictions, the ability of central banks to offset a downturn is quite limited, and a downturn abroad could spillover to weaker U.S. growth and inflation.

The one clear bright spot is the resolution of uncertainty around U.S. fiscal policy and the looming debt ceiling. The compromise agreement to raise spending caps and suspend the debt ceiling for the next two fiscal years eliminates, or at least significantly postpones, a major risk to the economy and financial system.

In considering the risks to the outlook, and particularly the risk of a recession, we often focus on warning signs of trouble down the road, such as yield curve inversions, as a number of people have commented already. But, more recently, some weakness in some indicators, especially for manufacturing, has led some commentators to conjecture that the economy may have already peaked or will soon do so. That is, from their view, we may already be in the initial stages of a recession.

My staff has looked into this question. Because a widespread and persistent decline in economic activity characterizes the onset of recession, they took a big-data approach to measuring peaks in the business cycle and assessing real-time performance of various approaches using various techniques. And after evaluating a wide range of methods, they found that, in fact, this well-known, simple rule of thumb that a 0.35 percentage point rise in the three-month average of the unemployment rate from its recent low point is actually a very good measure and one of the best indicators of a peak in the overall economy. My staff also found that there are other useful turning-point indicators based on the Conference Board jobs availability survey, job finding rates, and some cross-sectional measures of labor market and economic activity.

So if you're looking at the signals, whether it's the unemployment rate rule of thumb or these other indicators, there's really no evidence that the economy has already peaked. This analysis also identified that cycles in manufacturing in recent decades have not been as closely associated with turning points of broad economic activity as they had in previous decades. And the manufacturing recession of 2015 to 2016 is one good example.

And this weakening of the link between the performance of the manufacturing sector and that of the general economy suggests that the recent slowdown that we've seen in manufacturing more likely signals a step-down in the overall growth rate of the economy rather than the start of something more broad based. But it's also important to remember that the 2015–16 episode happened at a time when the FOMC significantly shifted its policy view, in terms of the number of times the FOMC increased rates relative to expectations. Did I slip into the policy discussion right there? Okay.

Regarding inflation, core PCE inflation is around 1½ percent. It's well below our goal. And the recent annual revision to the data shows that underlying trend inflation is somewhat lower than we thought. Measures of wage inflation, as a number of people have already commented, are quite muted. And despite the tight labor market, wage growth remains below where it was prior to the recession. And average hourly earnings growth, in fact, has slowed since earlier this year.

And although indicators of inflation expectations have not changed substantially over the first half of the year, on net, measures based on the Michigan survey and the market-based measures are roughly ½ percentage point below the level that we saw around five years ago, a time when we thought they were at a level consistent with a 2 percent longer-run goal. And this is something that I worry about in our discussions around measures of inflation expectations. I do feel that sometimes in our focus on the ups and downs that invariably happen in these measures, we lose track of what the underlying question is.

Are measures of inflation expectations where we want them, or have they moved perhaps very low or maybe to the low end of the range consistent with our target? I feel that that is the case, and inflation expectations are quite low relative to history.

This overall picture of a slowing domestic economy, weak global growth, and persistently low inflation calls for a somewhat more accommodative stance of monetary policy in order to maximize the probability that we achieve the desired outcomes of sustained economic growth, a strong labor market, and inflation near our symmetric 2 percent inflation goal in the medium term. I will come back to those points in the discussion tomorrow. Thank you.

CHAIR POWELL. Thank you. And thanks, everybody, for your comments. I'll offer my own. At the June meeting, we saw a positive outlook but with risks from the crosscurrents of weak global growth and trade policy uncertainty. We also had concerns about below-target inflation. Our postmeeting statement said that we would carefully monitor the implications of incoming information and act as appropriate to sustain the expansion.

Since then, the incoming U.S. economic data have been largely good news, and with some less good news. Headline growth for the second quarter was 2.1 percent, a bit below staff expectations at the June meeting, but the composition of second-quarter growth was actually an improvement, with private domestic final purchases (PDFP) rebounding strongly. PCE surged at an annual rate of 4.3 percent. Business fixed investment, however, was down 0.6 percent, and manufacturing moved down again. The solid June jobs report was a relief after May's weak showing. Job gains are running well below last year's level but still are at a level more than high enough to absorb new entrants.

Wages are rising, but not fast enough to put much upward pressure on inflation. Core PCE prices rose only 1.6 percent in June from a year earlier. Market-based measures of inflation compensation and the Michigan survey reading on inflation expectations have rebounded recently but remain low.

Regarding the crosscurrents—and I'll start with trade—it is true that talks between the United States and China are resuming today and tomorrow. And we're likely to know and outcome there is overnight and get a sense of the talks before our meeting tomorrow. At least until hearing the outcome—and maybe well after that—I am reserving judgment. I think all that's really happened here is an agreement to have a meeting about having future meetings. [Laughter]

By many, many accounts, the chances of a broad agreement in the near term are small, and the chances of further escalation remain quite real. A lasting reduction of tensions with China, if that happens, may have to wait until after the 2020 election, and tensions with China and other countries could easily flare between now and then. So from the standpoint of near-term economic performance, even in the best likely case, trade uncertainty would remain a persistent feature of the economic landscape at reduced frequency. Hope to be wrong, and I'll hope for good news overnight.

Global growth prospects remain dim, particularly in the euro area. I'll be yet another person to quote President Draghi last week as referring to the euro-area economy as "worse and worse," a phrase that I suspect will be remembered, alongside others in his highly eventful term.

President Draghi is trying to put together a broad easing package as he hands over the reins, and we certainly wish him success and expect success, but questions linger about the ECB's remaining monetary policy space and the incremental effects of any easing moves. Hence, President Draghi's repeated urging for fiscal policy, which seems the obvious answer—except to those who have fiscal space to use.

As for China, growth there has slowed sharply in the second quarter, as some temporary supports to activity faded. Underlying demand remains weak, and business and consumer sentiment have deteriorated.

In early June, financial markets were flashing clear warning signals, beginning at the *Fed Listens*' Conference on Monetary Policy Strategy, Tools, and Communication Practices at the Chicago Fed. Some of us, including yours truly, signaled our vigilance, and others followed suit. Financial conditions improved and are now much more growth friendly. Had we stayed on the sidelines and continued to watch patiently, financial conditions would probably be in a very different place. More to the point, the outlook for economic activity, predicated as it is on financial conditions, would be weaker.

Regarding that outlook, according to the staff, real GDP growth will edge down to roughly potential, as Vice Chair Williams suggested. The staff continues to expect 12-month core PCE inflation to edge up closer to 2 percent in coming months but not actually to reach the 2 percent target on a sustained basis in the forecast period. And that is, to me, all too plausible.

For many years, we have asserted that inflation would rise persistently to the neighborhood of 2 percent. That forecast actually seemed on track for a good bit of last year. But, since December, we've all marked down our 2019 forecasts for core inflation and the federal funds rate, even if many of us did not write down an outright cut.

Many of us have also revised down our estimates of u^* and r^*. Since September, the median estimate of r^* has declined 50 basis points, and the estimate of u^* declined 30 basis points. We are not in complete agreement, but, to a large degree, we are seeing the same things—lower stars, lower inflation, and an outlook supportive of more accommodative policy than we had previously expected.

Finally, as some of you have noted, one of the risks of keeping interest rates low for a long time is that doing so may increase financial stability vulnerabilities. For now, I concur with the staff's assessment that, overall, such vulnerabilities are moderate. Prices in asset markets, like equities and commercial real estate, are elevated. Leveraged lending bears close watching, and high corporate debt could amplify a downturn, but leverage and maturity transformation in the financial system are low.

We'll, of course, continue to monitor developments, but I don't believe the current financial stability concerns should deter us from adjusting policy if we see fit to do so to achieve a somewhat more accommodative stance. On that note, I see the case for providing more accommodation at this meeting as persuasive, if not overwhelming. The position of our economy relative to the dual-mandate goals is historically good. The modal outlook is also reasonably good despite areas of weakness stemming from the crosscurrents we've been monitoring all year, particularly weak global growth and trade policy uncertainty.

That positive outlook, though supported by the expectation of more accommodation, is still threatened by downside risks from the crosscurrents. The threat is particularly salient given the proximity of the effective lower bound. And we face what appears to be a more persistent shortfall of inflation below our symmetric 2 percent target.

A rate cut tomorrow would be designed to sustain the expansion. It would offset the ongoing drag coming from trade uncertainty and weak global real growth. It would provide some insurance against further downside risks from these factors. And it would promote a faster return of inflation to our symmetric 2 percent target.

I see the Committee as adjusting policy midcycle to a somewhat more accommodative stance, not beginning an extended loosening cycle, and I intend to make that clear. I will also signal that future adjustments will depend on our assessments of the incoming data and risks to the outlook, if the Committee does decide to move.

Thank you for a great set of comments, and that brings our go-round to an end. And I will now turn it over to Trevor for the monetary policy briefing.

> MR. REEVE.[8] Thank you, Mr. Chair. I'll be referring to the handout labeled "Material for the Briefing on Monetary Policy Alternatives."
>
> As of your meeting six weeks ago, many of you concluded that the case for a somewhat more accommodative policy rate path had strengthened. You signaled your willingness to act as appropriate to achieve your goals, while awaiting additional information. The questions you now face are, what actions are appropriate to best

[8] The materials used by Mr. Reeve are appended to this transcript (appendix 8).

promote your employment and inflation objectives? And how should your communications explain these actions and shape expectations for the future?

The upper-left panel lists some considerations that are relevant for your deliberations. First, as many of you noted, the data on real activity received over the intermeeting period have been reassuring, although somewhat mixed. Job gains bounced back in June, the unemployment rate remains low, and growth in household spending rebounded strongly in the second quarter. On the other side of the ledger, business investment slowed to a standstill, and manufacturing output remains below its level at the beginning of the year.

As Shaghil discussed in his presentation, sluggish real growth abroad has weighed on the U.S. outlook and continues to be a source of downside risk. On the trade front, the risk of an imminent escalation in tariffs eased over the intermeeting period. Even so, as shown in the upper-right panel, uncertainties about trade, as measured by the staff's trade policy uncertainty index, remain elevated. These uncertainties, along with weaker foreign demand, appear to have weighed appreciably on domestic investment, manufacturing, and trade and may continue to do so.

The headwinds and risks posed by these global developments are likely contributing to the evolving view that lower interest rates may be required to achieve given economic outcomes. This perspective is evident in the evolution of private forecasts for the U.S. economy. The middle-left panel shows vintages of Blue Chip forecasts over the past year and a half. The real GDP growth projections for 2019, the solid black line, and 2020, the dashed black line, have held roughly steady over time. In contrast, the Blue Chip projections for short- and long-term interest rates, the red and blue lines, have declined about 1 percentage point. The lower path of interest rates, reinforced by FOMC communications over the course of the year, has likely helped stabilize the outlook for the economy.

Regarding consumer prices, recent data, on balance, have come in about as expected, consistent with the view that the weakness in PCE inflation seen earlier this year was in large part transitory. Even so, inflation pressures clearly remain muted, despite the fact that the expansion is in its 11th year and the unemployment rate has remained at or below 4 percent for 16 consecutive months. And as David noted in his presentation, the staff continues to project headline and core inflation to run slightly below 2 percent over the medium term.

The middle-right panel shows the evolution of median projections from the SEP for core PCE inflation over recent years. Each line shows a projection for a particular year, with the SEP vintage shown on the *x*-axis. When projections for a given year are first made—roughly three years out—the typical forecast has been of 2 percent inflation. With the passage of time, however, these forecasts have routinely been revised down, as inflation has continued to run below 2 percent. While this time may be different, and 2 percent inflation could be around the corner, you may not find the historical record on this score to be all that reassuring. In addition, both market- and survey-based indicators of longer-term inflation expectations are low by historical standards—suggesting that inflation expectations may be somewhat below, or may be at risk of moving below, the level consistent with your symmetric inflation objective.

In the context of these developments, you may judge that had it not been for Federal Reserve communications signaling a somewhat easier policy stance, current financial conditions would be tighter, and the outlook for both the real economy and inflation would be weaker. Hence, you may judge that a modest reduction in the target range for the federal funds rate is appropriate at this meeting, as in alternative B. You may see that such an action is warranted to counter the headwinds and to guard against the risks posed by trade and global developments and to support the sustainable return of inflation to 2 percent.

Alternatively, you may view the recent data flow as sufficiently strong to defer any decision to change the stance of policy, as in alternative C. You may judge that global risks and uncertainties, while being important to monitor, do not at this time call for a policy response. In this regard, you may be concerned that financial markets have gotten too far ahead of themselves in pricing in rate cuts and that some recalibration is warranted.

Conversely, if you have greater concerns about the outlook, especially the risk that inflation expectations may be anchored at too low a level, you may favor a more aggressive policy easing at this time, as in alternative A.

As Lorie noted, market participants widely expect you to lower the target range for the federal funds rate by 25 basis points at this meeting. Your communications regarding this presumed action will be important in shaping expectations for policy in the future. The lower-left panel shows an options-derived probability distribution for the federal funds rate following your September meeting. At this time, investors place roughly 65 percent odds on at least another 25 basis point reduction in the target range at that meeting and about a 30 percent probability on no change.

While it is always difficult to predict how market participants will react to your policy statement and associated communications, the bottom-right panel highlights some aspects of alternative B that will likely draw attention. First, although the 25 basis point reduction in the target range is widely expected, the action will confirm recent Federal Reserve communications indicating that a somewhat easier stance of monetary policy is appropriate to achieve your objectives. Second, retaining the reference to the Committee's willingness to "act as appropriate" may signal continued openness to additional policy adjustments. On the other hand, replacing "closely monitor" with "continue to monitor" may convey less imminent concern about the outlook. Finally, the decision to end balance sheet runoff in August may reinforce perceptions that the Committee will be flexible in adjusting its policy in light of economic and financial developments.

Thank you, Mr. Chair. That completes my prepared remarks. The June statement and the draft alternatives and implementation notes are shown on pages 2 to 11 of the handout. I will be happy to take any questions.

CHAIR POWELL. President Rosengren.

MR. ROSENGREN. So if we wanted to be flexible going into September, would we want a 65 percent probability that we ease 25 basis points? If the Committee adopts the language in alternative B for its statement following this meeting, do you think there will continue to be a 65 percent probability that we ease 25 basis points in September? And I thought we'd want a number significantly lower than that if we truly wanted flexibility.

MR. REEVE. Well, I would say a couple of things about that. One, as I said in my remarks, it's always difficult to know how the market will fully react to the Committee's statement. I think, as Lorie noted, the expectations for this meeting are for the Committee to cut rates slightly more than 25 basis points, because it may be a little better probability on 30. That difference between the language in alternative B and market expectations alone will likely shift the expected path for policy slightly in the upward direction. But I do think the odds the Committee will ease 25 basis points in September would remain high, maybe not necessarily higher than they are now. I don't know. It depends on the whole package of communications, including the press conference.

But, perhaps just as important, the probability that markets place on an easing in September is not going to be fixed in time between this meeting, the outcome tomorrow, and the time of your September meeting. There will be a lot of information coming in over the intermeeting period that will affect market expectations for the path of future policy, including communications from all of you. And what we have seen, certainly both in the recent intermeeting period and previously, is that policy expectations do maintain a pretty high sensitivity to data releases and economic news. So my expectation would be that those probabilities would continue to evolve as September approaches and be importantly shaped by both the data and your communications.

CHAIR POWELL. Maybe I'll offer a couple of comments. I do want to have more optionality coming out of this meeting. I do. I think that's appropriate. I think that's where the Committee is, and I just think there's too much certainty priced in that we will ease 25 basis points.

The worst time to change policy expectations is in the press conference. We have a bunch of other shots to do that over the course of the intermeeting period, and I'm sensitive about coming in to the press conference and trying to move the probability the market places on a easing in September to zero or way far below where it is now. You could get a very big market reaction then, and it would look like kind of a big surprise, which I don't think is a great idea.

What I'm planning to do, though, is to suggest that—I mean, the language I had written down is, "In contemplating potential future adjustments, we will continue to monitor the implications of incoming information." So "in contemplating any potential future adjustments" is what I'm going to say. That suggests that you're contemplating potential future adjustments. That suggests a slight probability of a cut in September—it's a "data-dependent lean," but it's far short of certainty. So I would think that would be the right tone to strike. I mean, it's very hard to get these things exactly right in real time, of course. Governor Clarida.

MR. CLARIDA. Two observations. First, thank you, Trevor and team. You definitely had an active six weeks since our June meeting. I'd like to make two comments on two of the slides on page 1. The first slide I'll comment on is the one showing the evolution of Blue Chip forecasts, and Trevor made this point, but let me make it more explicitly. I think this is very informative, and it dovetails with something that Chair Powell indicated.

In September of last year, our median *r** estimate on this Committee was 1 percent, and the median *u** was 4.5 percent. So, as the Chair indicated, the *r** of the median participant is down 50 basis points and the *u** is down 30 basis points. And jam that into your John Taylor rule, and you'll basically get about an 80 basis point easing relative to what would have been appropriate policy last September.

What's striking to me about this chart is that the Blue Chip forecasters, many if not most of whom actually get paid to do a really good forecast, have seen that the rate profile is down substantially. The policy rate profile is down relative to where the Blue Chip forecasters were a year ago, and they have not changed their GDP forecast at all. And that's, at least in a first cut, indicative of this view that I and I think others around here have that there are these headwinds, and the appropriate policy rate path to get our desired outcomes has been adjusted. So that's a striking way to present that.

The other thing I would mention is the companion chart to the right of the Blue Chip chart, and I've seen this type of chart as well. I used to do versions of this chart in my earlier career. But what I would say is, we're thinking about the framework review, and we're thinking about what maybe the Committee does in five or six years to look back on this period, and it would be nice if, at the end of our review, we set in place a process and a framework so that the picture for the years 2020 to 2025 does not have this pattern.

It would be nice for the median projection from the SEP for core PCE inflation to be a straight line, because remember these projections are done under appropriate policy. We're basically saying in each of these median SEP projections under appropriate policy the outcome is inflation below our 2 percent target, and I think this gets at a concern that some of us have expressed about inflation expectations moving below levels consistent with our inflation objective. But, anyway, that's for tomorrow and down the road, but thank you.

CHAIR POWELL. Governor Quarles.

MR. QUARLES. This is just a very boneheaded question that I know has to be clear to everyone else around the table, but I'm just curious. Paragraph 4 on alternative B—I had thought that we were ending our reduction in the balance sheet in September, and now we're ending it in August, and a close study of the Julian calendar would suggest [laughter] that August is one month before September. So what's happening there?

MR. REEVE. So if you look at the implementation note—

MR. QUARLES. Oh, there's an implementation note.

MR. REEVE. Yes, well, you don't need to look at it. The implementation note makes it clear that that change in policy is effective August 1. The previous communications were that roll-off would finish at the end of September. The current implementation note actually reflects two calendar months of a difference in timing. This sentence in paragraph 4, whether helpfully or maybe a bit obscurely, doesn't actually use the month "September" to try to avoid that particular confusion, but it is two months.

MR. QUARLES. Okay.

CHAIR POWELL. President Kaplan.

MR. KAPLAN. We had this discussion, I guess, this morning. I know we've been talking for some time here in various statements about sustaining the expansion, and it was talked about this morning, about how our goals should be sustained maximum employment and price stability.

For me, I wonder about us, if not in this meeting, soon, weaning off "sustain the expansion" because I don't think for me that is the same as achieving our dual-mandate goals of full employment and price stability over a sustained period of time. I can imagine scenarios in which those could diverge, and I'd rather hang my hat on the second rather than the first. But I'd like to raise that and just get other comments on this, because I know "sustain the expansion" has been embedded in our statement language here for some time now.

MR. KASHKARI. Could I ask a question about that? So you're saying there's a scenario where you could have an end of the expansion that would be helpful to achieving our dual-mandate goals over the long term? I don't—

MR. KAPLAN. I guess I'm saying there are limits to what I would do to sustain the expansion. In other words, if your goal really is to sustain the expansion at all costs, you might actually undertake monetary policy actions that make the next downturn more severe and may actually imperil your ability to achieve your dual mandate objectives. It's a nuance, but I'd want to just raise it.

CHAIR POWELL. Esther.

MS. GEORGE. Said another way, our mandate is clearly directed toward sustainable levels of maximum employment, as well as price stability. So I just think you could run those in a direction in the interest of sustaining the expansion that may not actually fulfill those dual mandates.

These colored lines in the SEP slide in Trevor's briefing show that I've done a poor job here. I guess when you look over the period displayed in the slide, there were varying levels of accommodation in place throughout. Now, we're talking here about a 25 basis point reduction with, if I read this right, no promise of others. That we expect will turn the curve on inflation expectations? Will it alter some of these headwinds we have been discussing in a way that—I just want to be clear about what you said your message was going to be, and—

CHAIR POWELL. I'm not trying to get to a completely neutral, patient place in the statement—we're not looking in that direction. That is not what I'm trying to accomplish, and I don't think that's where we are. What I'm saying is that we will be data dependent in any potential further adjustments. That's what I'm saying. I'm trying to inject data in there, because when you have a 25 basis point easing in September priced in at 70 percent probability, it's not very data dependent. So I'd like to move that back down. I'm not looking to take the probability of a rate cut in September to zero, because I don't think the probability is zero. I'd like to create more optionality with this statement and then see how things play out. Does that make sense?

MS. GEORGE. I think so, except what it suggests to me is, given what we've experienced over the past decade, it will take more, I assume, based on the discussions we've had, to alter those long-term inflation expectations.

CHAIR POWELL. My point is, we're not making that decision today. Tomorrow we're making a decision, but we're not deciding about September at this meeting. And I think it's a good thing that we have more optionality about what we do at the next meeting, right? I mean, it may well be that some group supports doing another rate cut at the next meeting. I don't think we know that or need to decide that today, but I think it's unhealthy to have the markets pricing a rate cut in September in to the point they currently have I think this is the right time to adjust market expectations to create more optionality. I'm just reluctant to do it in a way that's very disruptive and confusing to the markets. That's all. President Daly.

MS. DALY. I completely concur with what you just said. This is not about what you just said about tomorrow, but I'm going to follow up on President George's point. So one of the tensions that I think is arising that we should talk about, perhaps, is that when you're data dependent and then we put a portfolio of data together that we'll look at, but then we're also looking at this SEP chart here, which we don't really emphasize as much—this is a chart that's different, in my read, from just muted inflation pressures of a tenth or two. This is saying we've persistently missed. And at some point we have to decide, I think, as a Committee—will we really go for moving inflation expectations and inflation up, and is that different from watching incoming headwinds and judging whether they are so much, they'll push us back or not? And I'm not suggesting you do that tomorrow, but I do think, ongoing, that's the tension in the language—that we're trying to accomplish, with one set of language, two different kinds of things, and it may not fit under that big tent forever.

CHAIR POWELL. I'll just say, I would never say that we will do whatever it takes to get inflation up to our 2 percent target, because we don't know whether we can. Nonetheless, I think it is a good thing to be seen to be using your tools to support inflation moving up.. That's why I'm trying to characterize this as a midcycle adjustment to a somewhat more accommodative policy stance. We're not saying that we're just going to keep cranking the federal funds rate down until inflation gets over 2 percent.

President Bullard.

MR. BULLARD. Yes. One thought about creating optionality based on this chart number three here in exhibit 1 is that sometimes we would say, "Okay, this looks like a small move, because it's only 25 basis points," but earlier this year we took some other tightening off the table, and now we're adding one cut to it. So we've actually done quite a bit in the first six months of the year. The Committee, I think, in the past would have said, "Well, we've done quite a bit here. Let's wait and see how the data come in, see if this has the kinds of effects that we thought," so that that will take away the market expecting that if something doesn't happen during the intermeeting period, we've got to move again. I think we can credibly make the case that we've done a lot, and it's time to wait and see the effects of our action.

CHAIR POWELL. President Evans.

MR. EVANS. I agree with President Bullard on that. It does seem like we've done a lot relative to December. I thought President George's question was a really good one, because it's so easy to say, "It's only 25 basis points." Is that really going to make a big difference to the outlook? And I was chuckling because, yes, that's true. You know, it is only 25 basis points.

I go back to December, and I thought that was only 25 basis points too, and the continuation of the balance sheet adjustment was just what we'd been saying we were going to do anyway. And so I view this as, it's only 25 if we do alternative B. I get that. But I think it's trying to indicate that we're alert to the risks and clued in, and we'll see how things progress—the data dependence and all of that. So I think that it's more than 25 in terms of its effect, and, combined with what we didn't do after December, it's probably even more. But it's a totally valid question and concern.

CHAIR POWELL. Other questions or comments? [No response] Hearing none, seeing none, we adjourn to the elegant West Court Café, as always. See you at nine o'clock tomorrow morning. Thanks, everybody.

[Meeting recessed]

July 31 Session

CHAIR POWELL. Good morning, everyone. Before we get started today, I want everyone to join me in congratulating one of our number on a very special achievement. On this very day, Jim Clouse celebrates 30 years at the Fed. [Applause] I think we all know Jim is tremendously valuable in his work here. He will also shortly turn 60, which means that he's spent half of his life here at the Fed. [Laughter] Anyway, thank you so much, Jim.

All right. Let's get started again. David, do you have a data update for us?

MR. LEBOW. I do. This morning we received the employment cost index for June. For private industry workers, the numbers for total compensation were a 2.1 percent annual rate of increase over the three months ending in June or 2.6 percent over the past 12 months ending in June. That's a little bit below our Tealbook estimate of a 2.8 percent increase over the past 12 months. The downward surprise was in benefits, not wages and salaries. We don't yet know the components of benefits—we get that information later today. So, more evidence that wage gains remain moderate.

This morning we also received ADP's public estimate of their employment change for the month of July. This is distinct from the weekly ADP figures I reported yesterday. They estimate a 156,000 increase in private employment in July—so, not very different from our Tealbook estimate on which I reported yesterday.

CHAIR POWELL. Great. Thank you. Questions for David? [No response] If not, let's begin our policy go-round. Governor Clarida.

MR. CLARIDA. Thank you, Chair Powell. I support alternative B as written. I support the policy decision to lower the funds rate target range by 25 basis points and to conclude in August the process of reducing the holdings of securities in the SOMA.

I'm glad to see in the statement that we acknowledge that "measures of inflation compensation remain low." Yes, they have rebounded since our June meeting, but only because a somewhat more accommodative policy stance has been priced in.

Regardless, breakeven inflation rates remain some 30 basis points below the levels that prevailed before the financial crisis. We continue in the statement to state that "survey-based measures of . . . inflation expectations are little changed," but, of course, at least in the Michigan survey, they're little changed at a historically very low level. And, as I think was pointed out yesterday during the economic outlook go-round, if the measures of expected inflation that we consult were consistent with our 2 percent inflation objective in 2005 and 2006, then, since they're lower now, they probably are not consistent with the objective. Indeed, the staff estimates of inflation expectations based on TIPS, which correct for liquidity and term premium effects in the TIPS market, suggest that conclusion.

In regard to the way forward for policy, I'd like to make three points. Again, u^* estimates of Committee participants have been trending down. Many of us have a u^* of around 4 percent, and, obviously, if u^* is lower, then that means that the output gap is smaller, putting less upward pressure on inflation. And, as I mentioned yesterday, I do think this is a downside risk to our outlook for returning to 2 percent inflation.

With regard to inflation expectations, obviously, they're not something that we directly observe. But I, for one, think it's important to try to do our best to understand where inflation expectations are moving and to communicate that inflation expectations are one factor that enters into our policy thinking.

Finally, I'd like to conclude with a little calculation to address head-on this issue of data dependence in our reaction function. So I want to begin with a 1993 Taylor rule, but I'm going to use our June SEP estimates of r^* and u^* as the inputs to that Taylor rule. If you take the data that we have as of today on core PCE inflation over the past year and on unemployment and you use John Taylor's coefficients, you end up with a Taylor rule policy rate, given current data and the r^* and u^* in the SEP, of around 2.4 percent.

Let's recall that, in September 2018—which, coincidentally, was my first meeting as a Fed Governor—the SEP median showed an r^* of 1 percent and a u^* of 4.5 percent. Since then, Committee participants have been revising down estimates of the "star" variables based on the incoming data that we've seen. If you take the 50 basis point adjustment in r^* and the 30 basis point adjustment in u^*, that accounts for most of the projected shift down in the policy rate path since our September meeting.

So I support our policy decision today while acknowledging that it does imply a top end for the target range of the federal funds rate that's about 15 basis points below the Taylor rule calculation. But I believe this is justified for prudent risk-management considerations, given the downside risk I see to inflation. Thank you, Chair Powell.

CHAIR POWELL. Thank you. President Daly.

MS. DALY. Thank you, Mr. Chair. I support alternative B as written. But, like President George yesterday, I wonder if this will really be enough—most likely, for different reasons, given that she's on the map side of the room. [Laughter]

Relative to June, my confidence that the economic expansion is on track has increased. The data on economic activity have largely met or beat expectations, and some of the potholes we were worried about have been avoided—for example, the federal budget accord avoids a debt ceiling event this year. Against this backdrop, it seems like we could stand pat and wait for more data.

I know, at this point, it sounds like I might be arguing for alt-C, but the intermeeting data are only part of the story. And, along lines similar to Governor Clarida, I want to go through just some simple arithmetic that helped me. If you compare the current situation that we are in today with where we were in March, the median SEP participant in March had no change in the funds rate over the course of 2019, and the median estimate of long-run r^* in the March SEP was 0.8 percent. In contrast, in the June SEP, the median r^* had fallen to 0.5 percent, implying a 30 basis point decline in the long-run funds rate. So if we assume that short-run r^* is at least as low as this long-run number, this implies we need one rate cut this year just to keep the stance of policy unchanged from March. And that was a time when we characterized the economy and our policy as being in a good place.

So why move beyond this simple rebalancing, recalibrating policy to where we were in March? What's the case for further cuts this year? I find two arguments most persuasive. First, as we discussed yesterday, we face one-sided risk in our ability to control the path of policy. One way to take insurance against this risk is to recognize the estimated nature of our star variables, especially r^*. Estimates of r^* are highly uncertain and have fallen steadily over the past several years, and there is some downside risk to further declines, given the lower interest rates in foreign countries.

Vasco Curdia's presentation yesterday, based on the framework memo, makes the case for insuring against the downside risk to further declines in r^* by using the lower range of r^* estimates when setting policy, rather than the mean or median values. Under that scenario, if r^* turns out to be higher than we think—we've made that mistake—and, hence, policy is too accommodative, we can easily course-correct by raising interest rates, particularly since a nonlinear effect on inflation or a jump in inflation, is highly unlikely, as work by not only the San Francisco Fed, but also many other people in the System, has documented.

If, on the other hand, *r** is lower than we think, policy will be too tight, and the effective lower bound (ELB) will limit our room to adjust. In other words, in such a close proximity to the effective lower bound, it's important to err on the side of being too accommodative relative to our estimated *r** rather than too restrictive.

Now, a related but different rationale comes from considering inflation. Inflation projections for this year and next have come down since March by at least a couple of tenths of a percentage point. And, given the volatility of the data and the imprecision of monetary policy, inflation of 1.8 percent or 1.7 percent may feel close enough to our 2 percent target. However, as we all discussed yesterday, if we consistently miss our inflation objective to the downside, despite an apparently strong economy and a tight labor market, the public will increasingly incorporate these sustained low inflation readings into their expectations. And my concern is, they won't anchor on the 2 percent inflation target we talk about, but on the less than 2 percent inflation we deliver. This is a challenge that Europe is currently facing, and, of course, Japan has lost that battle and is now fighting a completely different war.

In more tangible terms, lower actual and expected inflation—even if just a few tenths—translates into less conventional policy space should a negative shock occur. If, for example, inflation expectations are ¼ percentage point below our target when the next downturn arrives, and so are nominal interest rates, this translates into one rate cut fewer that we have at our disposal. When I look at that, it simply says that underrunning the inflation target on a consistent basis limits our conventional policy space, making it more likely we will hit the ELB and then be forced to turn to less-proven, less-certain unconventional policy tools.

Finally, as we discussed yesterday—and I think it's very important—we have to consider our policy decisions in the context of financial stability. But, like many, I see the best protection against financial stability risks as being our macroprudential tools. So I would like to see the countercyclical capital buffer being deployed or the stress tests becoming tougher before using a blunter tool like monetary policy to address financial stability concerns. In the end, I would hate to see us err on the side of holding back insurance accommodation for low r^* or low inflation to solve for potential imbalances in the financial system, which we could treat first with other tools.

So, in sum, weighing the risks of further declines in r^* and continuing low inflation versus creating imbalances that can be corrected with other tools, I come out currently thinking that we should be adjusting our policy rate path downward. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Bullard.

MR. BULLARD. Thank you, Mr. Chair. We did not make a policy rate move at the June meeting but signaled a likely move at the current meeting. Accordingly, markets have placed a 100 percent probability on a 25 basis point move or more for today. In my view, we essentially already made this move at the previous meeting, at least in terms of influencing market pricing, and now we need to ratify that decision. This is not my preferred way for the Committee to operate, but, nevertheless, I think we will be fine with alternative B today.

I think we may need to move again at coming meetings in order to position the policy rate appropriately, given current global macroeconomic conditions. But I would like to avoid having the market place a 100 percent probability on another move occurring at the September meeting. One way we may be able to accomplish this is to emphasize the sea change in U.S. and global monetary policy that has occurred during 2019. In the second half of 2018, there was a widespread view that rates would be normalized considerably further, perhaps by as much as

100 basis points, in order to contain incipient inflation pressures associated with an economy that continued to surprise to the upside.

The Committee has, generally speaking, stepped back from that view and now sees the current level of the policy rate as a bit high relative to the level that would return inflation to target or, preferably, above target over the forecast horizon. Arguably, with another rate reduction in train, this has been a swing of as much as 150 basis points on the level of the policy rate relative to expectations in late 2018. Given this large swing, it is likely appropriate that the Committee now takes a wait-and-see posture heading into the next few meetings to measure the effects of these actions. I hope we will see more evidence during the fall of a re-centering of inflation and inflation expectations at our 2 percent target. As an example: The TIPS breakevens were up about 15 basis points on the news coming out of the June meeting. I interpret this as a somewhat higher market-based inflation expectation, given the dovish surprise at that meeting.

I think we can also argue that today's move provides some insurance against a sharper-than-expected slowdown in the U.S. economy. We already expect the economy to slow to trend growth, and that trend growth is itself not particularly high compared with U.S. historical averages. Much of this slowdown is, in fact, happening during 2019. Real GDP growth is slower, on a year-over-year basis, than it was last year. Job growth is also slower this year than it was last year.

The uncertainty around global trade arrangements has increased significantly and, in my view, is unlikely to return to normal levels over the forecast horizon. We're just going to have to live with trade uncertainty. This is having a much larger effect outside the United States than it is inside the United States, slowing global growth, and this may feed back into deteriorating U.S.

macro performance. A positive aspect of our present policy is to encourage continued strong labor market performance that should especially benefit groups of workers that have historically had higher rates of unemployment.

I continue to be concerned about yield curve inversion. I agree with President Kaplan's comments yesterday that the inversion suggests that our policy rate setting is somewhat out of alignment with respect to market fundamentals. The slope of the yield curve between the 2-year maturity and the 10-year maturity is not inverted at this point, which gives me some comfort that there is not a recession signal coming from yield curve inversions between other rates within the curve. So I think that we can make some small adjustments beginning today, and then we'll again see an upward-sloping curve soon.

Finally, I would say it's not unusual to search for the right level of the policy rate following the end of a normalization cycle; the 1995–96 period was very much like this. The Committee had to feel its way around in the meetings following the end of the normalization cycle at that juncture. They did so successfully and set up the economy for an excellent second half of the 1990s, one of the best periods of macroeconomic performance in U.S. postwar history.

On alternative B itself, I would just make one comment. I would prefer not to raise the balance sheet issue again. I think that we've already made a decision on the balance sheet. I would be willing to live with that decision. I think if we were asked about it, we could just say, "Well, the balance sheet runoff is ending anyway, so we just left that decision alone." I think that, by putting paragraph 4 in here, we may be inadvertently raising the specter that balance sheet policy would again become an active tool of policy. My sense is that the Committee doesn't want to do that any time soon.

So if it was just me, I would strike paragraph 4. I understand that some people may want this paragraph in here, and I can live with it. I do think we can make our way with this paragraph, but my preference would be not to raise this issue at this juncture. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Rosengren.

MR. ROSENGREN. Thank you, Mr. Chair. I support alternative C for this meeting. Easing today when the data since the past meeting have been favorable seems at odds with the data dependence that we have emphasized so much recently.

In light of the favorable data since June, the decision to reduce rates at this meeting poses significant communication challenges. Numerous investment letters and private forecasters are speculating that our reaction function has changed. You may recall that the communications paper at the Chicago *Fed Listens* conference emphasized that being clear about our reaction function is an important focal point. That there is speculation that we have changed our reaction function without adequate communication is problematic.

At this point, I do not find heightened uncertainty a compelling case for easing. Many measures of uncertainty are not elevated. While trade uncertainty is elevated, the effects to date are largely in the forecast, and those effects are modest. It is difficult to know when and in what way this uncertainty will be resolved.

One rationale for easing is to take out insurance against the possibility that the trade war will intensify and the global manufacturing slowdown will snowball into a full-blown global recession. These concerns might be heightened, given our relative proximity to the ELB. However, I would prefer policy not to get too far ahead of the actual data. If these concerns materialize, I would support easing at that time.

Finally, this action seems to turn the punch bowl metaphor on its head. Rather than taking the punch bowl away, we're arguably spiking it. Should an asset price collapse be a driver in the next economic downturn, it will be hard to explain what tradeoff we are weighing at this meeting when asset prices are inflated on the one hand while unemployment is near historical lows and inflation is forecast to be close to target by the end of the year on the other. That is to say, I am worried about the financial stability implications of easing when the economy is relatively strong and financial markets are exuberant. The past several recessions were caused not by reaction to inflation concerns but rather by the failure to address financial stability concerns in a timely manner. In summary, with unemployment near 50-year lows, trimmed-mean PCE inflation at 2 percent and core PCE inflation likely to rise, many measures of uncertainty not unusually elevated, and financial stability concerns rising with stock prices and corporate leverage near all-time highs, I see no need for additional monetary accommodation at this time.

I find this press conference likely to be a substantial communications challenge. The best way to go into a press conference is with a simple and clear message. I think that's difficult at this time because, if you use r^* as the reason for easing at this time, micromanaging a difficult-to-precisely-measure r^* is, I think, a difficult argument to make. If we focus on global conditions, a challenging logical question would be, why should we move to ease policy before central banks whose countries are much weaker? And, finally, if you're worried about low inflation, to get to President George's question yesterday, with one move in rates, it's difficult to alter inflation expectations.

So I think it is a difficult message to deliver. I hope others can provide that simple, clear message that I'm missing right now. And I wish the Chair luck at the press conference. Thank you.

CHAIR POWELL. Thank you. President Bostic.

MR. BOSTIC. Thank you, Mr. Chair. I support the policy action as described in alternative C.

I agree with President Bullard—this action that's proposed in alterative B ratifies a signal that was sent earlier. But the scope of the action and the accompanying explanation in alternative B are troubling for me. Let me explain. The case for a rate cut, as I see it, rests on one of three fairly distinct arguments. The first is that the data suggest that the economy has weakened and there's a plausibly high probability of a turning point in the cycle. I don't think anyone at this table is in that camp.

An alternative rationale is that the level of uncertainty and the risks to the outlook are sufficiently elevated that one or more insurance cuts are prudent on risk-management terms. This, I believe, is the reason that is motivating much of the Committee. As I noted in my comments in the economic go-round, this view does not mesh with the feedback received from my contacts and directors. Policy and global real growth risks do persist, but I don't hear the sentiment that they are accelerating or that uncertainty is growing. If anything, businesses, having gone through several iterations of contingency planning related to trade exposures, seem to be better positioned to deal with the negative surprises should they come.

That leaves a possibility that global risk attitudes, having depressed market yields on safe assets, have lowered the policy rate that is consistent with a neutral stance of policy. I think a neutral stance is appropriate given my read on the state of the economy relative to our dual mandate. So this rationale is harder for me to dismiss than the other two. But two points on this. First, if the yield curve is telling us that we need to adjust monetary policy to keep the stance neutral, it seems to me the more assertive policy adjustment in alternative A feels more appropriate than the 25 basis point cut in alternative B, though I'm not supportive of the reasoning given for the move outlined in alternative A. This is the last point that President Rosengren raised. If we are convinced that the inverted yield curve is telling us we are north of neutral, then we should take actions to get back to neutral as quickly and as boldly as possible.

Second, I would feel a lot more comfortable with a rate cut at this meeting if the rhetoric supporting this move was based on a defensive adjustment to developments that require a move to maintain a neutral policy stance in the context of an economic outlook that is otherwise just fine. But that is not how I believe we have set up this move. It is certainly not how it is going to be perceived, in my view. Although it is better now than in earlier drafts, the language in both alternative A and alternative B still clearly suggests that, because of risks, we have downgraded our outlook for the economy.

I will share an anecdote from one of my Branch directors, who represents a very large national and international manufacturing firm. This director noted that last month, his company had slightly downshifted production volumes despite positive readings on all of the business indicators they typically use to make such decisions. The reason was, in fact, that they are taking on board additional downside risks. The kicker is that our director indicated that recent Fed talk about loosening policy in the face of risks played a role in their assessment. This was not an isolated comment. In fact, the apparent disconnect between our views and what businesses see from their perspective proved to be a dominant and, I might add, unsolicited theme in my Atlanta board of directors meeting last Thursday.

I don’t want to overstate the case. Exposure to international trade disruptions is clearly real, but even those contacts most exposed to trade and global economic developments recognize that their challenges are not universally shared across the economy. And I have been receiving the very clear message that the sentiment that is creeping into business planning is, what does the Fed know that we don’t?

The upshot is that I fear we are providing, in President Evans’s terminology, some negative Delphic guidance. If we persist in conditioning the public for yet more rate cuts in the absence of data suggesting a discernible softening of the trajectory of the economy, I think the risk of negatively affecting sentiment in this decisionmaking is real.

I’d also like to make some comments about the decision to conclude the reduction of our security holdings effective August 1. Terminating the balance sheet rundown two months early isn’t going to make a material difference in the stance of policy either way. So the decision obviously comes down to the question of what we intend to signal with this aspect of the policy decision. Our position—or, at least, my position—has been that the effect of our balance sheet reduction has been de minimis. If there has been any quantitative effect, it has not shown up in term premiums or, at least, has been swamped by other factors easing financial conditions.

Accordingly, the Committee had decided that the best course was to gear our asset management to longer-run issues related to the desired size of our balance sheet, driven by considerations about the effective implementation of monetary policy. Balance sheet policy, in other words, was to be moved to the background, and interest rates would be the primary instrument for adjusting the stance of policy.

So, what has changed? A logical, though unstated, conclusion from the proposed balance sheet policy shift is that we are sufficiently concerned about the need to provide additional stimulus that we are willing to break from our earlier commitment and from the rationale that supported that commitment. I do understand the counter to this position. We took great pains earlier in the year to disabuse markets of the view that our balance sheet policies were locked in, come hell or high water. I also understand that a rate cut without a halt to the balance sheet reductions could and likely would open the gates to negative commentary and the accusation of incoherence in our approach. And maybe this should be determinative. But if our announced policy plans and the reasons for them are taken seriously, then the double barrel of a rate cut and the early halting of balance sheet reduction will indicate that we believe that a serious reversal of fortune for the U.S. economy may be looming.

This doubling down is exactly what worries me about this policy decision and statement. We need to strongly and clearly hammer the message that we expect the economy to remain strong. Alternative B does say this, but I feel the message gets lost amid the signals about a weakening outlook. I am very concerned that our subtlety in language will be too subtle, and that expectations will not adjust the way many of us hope. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Mester.

MS. MESTER. Thank you, Mr. Chair. I support no change in the target range for the federal funds rate at this meeting. The economic information that has come in over the intermeeting period has been largely positive, and the downside risks to the forecast have moderated somewhat since our previous meeting.

As President Bostic found, business contacts in my District are coping with the uncertainty over trade policy. Though they’re experiencing some slowdown in activity compared with last year, they expect growth to continue at its trend pace.

My modal forecast remains that growth will slow to a trend pace of 2 percent, that labor market conditions will remain strong, and that inflation will move gradually back up to 2 percent. In this context, I don't see a compelling argument for cutting the funds rate at this time and would prefer that we continue to monitor incoming economic and financial information and assess the outlook and risks before making a change in our policy rate.

I realize that not everyone did, but if one believes that the funds rate was at the appropriate level at the time of our previous meeting, it's difficult to explain why we need a lower funds rate now, given that the data have improved and the risks of a weak-growth scenario have moderated. The economy has grown at an above-trend pace over the first half of the year, and labor markets are strong. Inflation has been running under 2 percent, but I don't view that undershoot as overly concerning, since the data and models suggest that inflation will be firming over time. And even if one were concerned, with the majority of components of core inflation being acyclical, I'm skeptical that one or two 25 basis point cuts in the federal funds rate are going to do much to speed up a return to 2 percent inflation. In fact, implying that it could do so could very well be counterproductive, because if those actions don't generate stronger inflation because of the structural or idiosyncratic factors, it will undermine our credibility, not enhance it.

More than half of PCE inflation is acyclical or structural. So either we need to be much more aggressive with our policy in order to encourage a faster increase in the cyclical components to engender a faster return of inflation to target or we need to be more patient as the cyclical components rise with continued strength in the labor market.

Now, one can consider this strategy an opportunistic approach to inflation. To avoid deleterious effects on inflation expectations, we need to explain that this is our strategy. My preference is to take this patient approach, given that our forecasts still have inflation gradually moving up. Currently, readings are not far from our goal, and inflation expectations remain well anchored. This strategy worked well in the 2014–16 period.

President Evans's framing yesterday of a question thinking about the costs of running the economy hot was salient for me. I've been thinking about this for a while, and, aside from any imbalances in financial stability, I think there are costs that come through the structural side of things—distortions in decisions of both workers and business owners. For workers, it's perhaps opting for working versus getting more education, which can affect their future productivity. For businesses, it's focusing on retaining and attracting workers rather than focusing on improving product offerings. In fact, several of our business contacts on our advisory council have mentioned that their ability to innovate has been lessened by how much time they're spending on recruiting. So these both can be thought of as maybe a shifting intention from future benefits to current benefits, a type of short-termism that can affect longer-run productivity. And I think it's related to some of our discussion yesterday about sustainability in these tradeoffs.

So, obviously, these ideas aren't well formulated yet. But I think they're worth considering, and they really make me think that patience is likely to be more consistent with our balanced approach.

Now, intermeeting communications may have likely precluded the ability to leave the target range for the federal funds rate unchanged today. Given the situation we're in, I believe we have a very difficult communications challenge, so I agree with President Rosengren. You know, is the reason that we're cutting rates today the inverted yield curve? Is it because inflation readings are low? Is it because the overall outlook for growth and inflation has changed significantly? Without a clearly articulated rationale for making a cut today, today's actions could be read as the beginning of a series of cuts, which could be destabilizing. It could be misleading, as President Bostic said, about our own outlook.

It could undermine efforts that have been taken to clarify our reaction function. Now, this is particularly a risk in my mind if we use the language from the June statement about uncertainty, which I took as a signal that we were ready to act in July. And I noticed that was reintroduced on Monday in the language in the statement.

Also, it isn't clear to me what will happen to the yield curve slope after today's cut. Markets are expecting more than 25 basis points of easing this year. So it could be that the yield curve remains inverted.

Former Chair Ben Bernanke's "hall of mirrors" idea seems relevant here. If the FOMC is trying to infer signals from the market but the market is trying to anticipate what our policy actions will be, then by following the market, we could be driving rates away from fundamentals, not bringing them into alignment. And then, what will we do? Will we have to take another action?

I agree with others that the proposed balance sheet action poses another communications challenge. Halting our balance sheet runoff a couple of months earlier than previously announced seems to run counter to our statement that we're going to use the interest rate tool as our main policy tool. I don't see an inconsistency with leaving the balance sheet plan in place while cutting the funds rate. It's the combination of the two that determines the level of accommodation.

In view of the current condition of the economy and the economic outlook, I'd like our communications to preserve our policy optionality. As we've seen, the data can move in unexpected ways, and our economy is quite resilient. Our meetings are spaced out precisely so we have the necessary time to gather economic information, evaluate whether it's changed our medium-run outlook and the risks around that outlook, and assess whether our policy is well calibrated.

Now, it's possible the downside risks will rise or be realized—or that we'll conclude that our policy is not well calibrated, as Governor Clarida and others pointed out yesterday, right? And that would necessitate a decrease in the funds rate later this year. But it's also possible that the economy has more momentum than some think, that the strong income growth in the first quarter could lead to stronger-than-expected consumer spending, and that this, coupled with reduced uncertainty on trade policy or even static uncertainty on trade policy, could spur investment growth and lead to further strengthening in the economy, which would show through to market yields, too. We should be prepared for either outcome, and our communications should support the Committee as it continues to evaluate the evolution of the economy and the outlook.

I understood from Chair Powell's comments yesterday that he's trying to maintain some of that optionality with his press conference remarks. And I noticed that he said that, as a part of his statement at the press conference, he's going to say "In contemplating any further adjustments in the funds rate." But I don't see that in this postmeeting statement, and I wonder if perhaps that language might be added to the statement accompanying this rate cut. I don't quite understand why we wouldn't put that language in the postmeeting statement rather than putting it in the press conference statement. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. I might point out that late in the day yesterday, I added the word "any" inadvertently to the language you just mentioned. And I know you correctly wrote it down, but I incorrectly said the word "any." That was not in there.

MS. MESTER. I see.

CHAIR POWELL. And we've had extensive discussions—about whether that language should go in the press conference statement or also in the meeting statement, and here's where it's come to rest. But it's a fair question.

MS. MESTER. Okay. Thanks.

CHAIR POWELL. Governor Brainard.

MS. BRAINARD. Thank you, Mr. Chair. The economy has been doing well this year, bolstered by confident consumers and a strong job market. Financial conditions are very accommodative, with borrowing rates low and the stock market at all-time highs. Fiscal and trade policy uncertainty has diminished but remains.

Nonetheless, business investment has weakened, reflecting trade and global forces, and inflation remains soft. While the modal outlook is solid, the risks are still tilted to the downside. Taking into account the downside risks at a time when inflation is on the soft side supports the case for a 25 basis point cut in the target range for the federal funds rate, according to principles of risk management.

The incoming data, though, have shown no indication that the expansion is at risk of ending. The pace of job growth, while slower than last year's strong pace, is still strong enough to further bolster the prime-age employment-to-population ratio. And coincident indicators, such as initial claims for unemployment insurance, are at historical lows. The latest 12-month data on inflation remain soft, but the three-month data provide some reassurance that we're likely to see slow but steady movement toward our 2 percent inflation objective. Some survey evidence suggests that the pall that has hung over the manufacturing sector this year may be lifting.

So I would like to take some time to wait and see. If the economy were to slow more than I'm currently expecting, if recession risks failed to abate, or if inflation failed to move toward target, I would be open to additional rate cuts. However, the extended risk appetite in financial and credit markets and historically high leverage among risky corporate borrowers provide some reasons for caution. Experience suggests that rising financial imbalances, rather than price inflation, have precipitated the past several downturns. Financial market overoptimism is pro-cyclical. Current asset valuations and leveraged lending are consistent with that pattern.

We should be addressing these financial imbalances by activation of the countercyclical capital buffer, more rigorous use of stress tests, and active monitoring of leveraged lending. Instead, payouts are exceeding earnings for the third year in a row, and capital buffers are falling. Short of deploying macroprudential tools, a cautious approach is our best hope of keeping exuberance in check while moving us toward our price-stability goal.

I support a rate cut at this meeting, but beyond this I would want to take some time to assess how the outlook is evolving, just as we've done with all of our policy actions throughout this expansion. On the basis of the outlook and the balance of risks today, I don't see the case for an additional reduction in the policy rate in September—although I'm open to it, should the data surprise me.

I am concerned that the statement language will be seen as doubling down on expectations of a September cut, and, as a result, we will be pulled by market expectations rather than being guided by the data. Today's policy easing, which combines an expected cut in the federal funds rate with an unexpected early end to balance sheet runoff, provides the best opportunity to recalibrate the language in order to have a gentle realignment of market expectations and regain optionality.

As Trevor's presentation indicated yesterday, market expectations already place a 65 percent probability on an additional rate cut in September. We added the language "will act as appropriate" to the postmeeting statement in June to signal the near certainty of a rate cut in July. I'm concerned that, by repeating that phrase today, we will lock in market expectations of a rate cut in September. From what I've heard so far, signaling a rate cut in September doesn't appear to reflect the views of the Chair or the Committee currently, which appear to be more dependent on the data.

I'm not going to offer language today, because I recognize that the communication challenge is great. But I would have liked to see us moving the language one notch backward toward our May language, perhaps by reintroducing the notion that the Committee is monitoring incoming information as it determines whether future adjustments may be appropriate. That said, I am prepared to support alternative B, recognizing that this is a delicate and difficult time for communications. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Harker.

MR. HARKER. Thank you, Mr. Chair. I'm quite conflicted with this decision. I've heard the arguments for cutting rates, but I simply do not think the economic fundamentals warrant such a decision. However, I think that we have boxed ourselves in as a Committee and this cut is inevitable. Thus, I can very reluctantly support the 25 basis point cut in the target range for the federal funds rate described in alternative B. But I don't support the early end of balance sheet normalization.

On the cut, in order for me to come to the view that I will support it, I must view the rate cut more as a recalibration of policy and not as the first step on a path to taking out more insurance via further cuts, as others have said. On ending the balance sheet normalization earlier than we had previously announced, I believe it is unnecessary, will confuse markets, and will send signals that will make both the normalization of the balance sheet and the conduct of future monetary policy more difficult.

So let me explain briefly both of these views. While I share others' concerns over the persistent undershooting of our inflation target and recent inconsistency of market-based expectations with that target, we do seem to be slowly making headway. Some recent readings on inflation have come in a bit stronger, and the economy seems to be on relatively solid footing. Trade policy developments have yet to affect the U.S. economy materially, and economic fundamentals appear strong. Additionally, the economies of our two major trading partners—Canada and Mexico—are improving. An indication that the current rate cut is the start of even more accommodation could very well be misinterpreted and sow unease among the public over the state of the economy. That, in turn, will only serve to increase the likelihood that future rate cuts will be needed.

On the balance sheet, a premature ending of the balance sheet runoff will only intensify that unwarranted signal. The Committee made clear in our communications that we expected the balance sheet normalization would be largely mechanical, and that the federal funds rate would be our primary policy instrument. The remaining runoff, as others have said, is inconsequential in size, so I see no reason to put balance sheet policy front and center. Doing so could easily be interpreted as the Committee being more concerned about the economy than is warranted, given the improvement in the most recent data, or that we are contemplating a return to additional asset purchases. Furthermore, emphasizing a change in balance sheet policy will make it more difficult to assure markets that when the balance sheet starts growing, along with reserves, later this year, that's a natural step in normalization, not some part of a larger plan for more QE.

Finally, I would like to highlight the conversation at our recent board of directors meeting. They, like the Committee, are very divided over the necessity of adding accommodation. Many at that meeting are confused. They were confused as to why we were taking this action and expressed deep concern about Federal Reserve independence and political pressure. While they did not believe, as a group, that we were in any way influenced by the current political climate, they hope—and, in some cases, ask—that we continue forcefully dispelling any perception that we are reacting to such processes and pressure.

So, in conclusion, I cannot support alternative B as written. While I do not believe economic fundamentals warrant any change in the policy rate at this time, I, like my board, am reluctantly willing to go along with a 25 basis point cut, in view of the strong signal we have given to the market already. However, in light of the inclusion of the balance sheet paragraph, I must tilt to not supporting alt-B as written. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Evans.

MR. EVANS. Thank you, Mr. Chair. You know, this is a very tough meeting. Except for being in the midst of a full-fledged crisis, this is among the most difficult decisions, I think, the Committee ever faces.

I think President Bullard framed this quite well. We're looking for the level of the federal funds rate that seems most appropriate for the economy. Are we neutral, restrictive, or accommodative? And it's a lot easier when we kind of see—we want to be up here, and we're here, so we can see the path, or things like that. So I think this is very difficult. I have great respect for everybody's opinions that they've expressed. I think somebody has to make a choice, and I think that's the role of leadership in this.

I will support alternative B and the associated balance sheet action today, although I prefer alt-A—its language and its 50 basis point cut. Regarding alt-B, I have some reservations about how the statement describes our rationale for cutting rates. Mainly, I'm concerned that we're being too timid in the face of the continued underrun of inflation relative to our symmetric target and the downward shocks we have faced in recent years. Those risks remain. That is why I would give overshooting inflation a chance.

Regarding growth, the incoming data on economic activity generally have been positive. Indeed, with a baseline projection for growth at or a bit above trend, there does not seem to be a strong case for a rate cut on the grounds of the baseline projection. However, important uncertainties remain—namely, trade policy, slowing global growth, and Brexit—which I do believe support a move on a risk-management basis. But, for me, the most straightforward and important reason to cut rates is persistently low inflation. In the current setting, the risk is not doing too much—it's being timid and doing too little.

Now, I will note, I heard Governor Brainard's comments on financial instability risks and their link to past economic risks and downturns that we've faced. That gives me pause. I am assuming that the state of our financial stability regulation is strong—strong enough to focus on our monetary policy dual-mandate responsibilities.

For me, the language in alt-B doesn't quite align with my views on where I think the inflation risks are. The commentary that inflation has been "running below 2 percent" but is expected to rise toward target has been in our statement for a long time now without any substantial progress. Furthermore, the reference to "muted inflation pressures" in paragraph 2 almost sounds like an afterthought and is a much softer characterization than my view of the current policy challenge. I prefer the language in alternative A that refers to "inflation running persistently below 2 percent." This language more explicitly expresses a rationale for lowering the policy rate as a proactive effort to increase inflation. I think this language has a better chance of being effective.

Indeed, there's a strong argument for incorporating not only alt-A's language on inflation, but also its 50 basis point rate cut. Our repeated failure to meet our inflation goal puts our credibility over the symmetric inflation target at risk. A 50 basis point action today that was tied closely to the inflation outlook would be a forceful communication of commitment to our symmetric inflation objective.

In seeking to keep the expansion going, giving inflation overshooting a chance would help. Like President Daly, I see little downside risk to aggressive action tied to inflation. If inflation pressures are stronger than I currently think, a rate cut would simply help get us to our inflation objective a bit sooner. There's nothing wrong with that.

I also worry that alt-B's attempt to preserve optionality could negate the value of a rate cut today. The discussion yesterday and today suggests to me a high tolerance by the Committee for a single rate cut, if it has to be done, and a lack of concern if inflation improvement stalls once again. I worry this would promote a lot of confusing commentary about fine-tuning, regret, and other such issues. With only 25 basis points today in alt-B, I think the "prepared to make further adjustments in the target range" language in alt-A would communicate an appropriately stronger tilt toward additional easing to address our inflation problem and support sustaining the recovery. This language would be useful for emphasizing risk-management considerations.

Nevertheless, I will support alternative B today in its current state. If I thought our policy decision and near-term communications strategy conveyed too much complacency over our strategy for delivering symmetric 2 percent inflation, I'd have more concerns. But today I support alternative B. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Kaplan.

MR. KAPLAN. Thank you, Mr. Chairman. I support alternative B. I believe the economic outlook is stabilizing, with real GDP growth around 2 percent for 2019, although I do think trade tensions persisting and global growth deceleration are real risks.

With headline inflation running below our 2 percent target—I'd point out that the Dallas trimmed mean, though, is still running around 2 percent—I would emphasize that we expect inflationary forces to remain muted due primarily to structural forces rather than cyclical forces. As I've said before, I would again emphasize that I question how much these structural forces are susceptible to being addressed by monetary policy.

Having said all of that, I do believe the yield curve is flashing a signal that the federal funds rate is out of alignment with market-determined rates. This situation has persisted. It's gotten worse since May 1. But it feels to me like it's going to continue to persist. With a clean sheet of paper, I would have said that the federal funds rate is 25 to 50 basis points too high relative to market-determined rates. Or—said another way—I think it is 25 to 50 basis points too high relative to the strength and the potential of this economy in the aftermath of fiscal stimulus and with fiscal stimulus waning.

At the Dallas Fed, we've been running a modified Taylor rule calculation in parallel for some time now. And when I say "modified," we use a lower natural rate of unemployment than the Board staff, and we've been using a modified intercept. In running that calculation, we've come to the conclusion, as a reality check, that we, again, are about 25 to 50 basis points too high on the federal funds rate.

I believe it would be prudent to make an adjustment to the policy rate so it is better aligned to market-determined rates. I would emphasize that this is a modest, restrained, and limited tactical move, not a signaling of a fundamental change in strategy suggesting the beginning of a rate-cutting cycle, a fundamental shift in the FOMC's framework, or a change in our reaction function. It is not a shift away from a balanced approach to monetary policy where we're willing to offset the undershoot in one objective with an overshoot in the other objective.

In terms of communication, I would support making the adjustment today, but accompanied by a signal that we will be patient. I know we've stopped using that word, but something along the lines of "We'll be patient and continue to monitor incoming economic data." I think, as President Bullard said, I support a wait-and-see posture.

I would also be open to the language that Governor Brainard threw out about "whether"—using that word. I know the markets may be disappointed by that. I hope they are. While I do believe a second move may, in fact, be needed down the road, I'm also very concerned about market probabilities pricing in three or four rate-cut moves. And I think our thinking and our communication have to take account of that concern. I, for one, would want to see more evidence of weakness in the outlook, of the prospect of real GDP growth below potential growth, before embarking on more than a tactical adjustment in the federal funds rate.

I mentioned this yesterday—and this is not for this meeting, as we've got enough on our plate, God knows, for this meeting—but I would still want to put on the table for the future whether we could wean off this language related to sustaining the expansion. And let me explain again why. There are limits—and I think it's important that the market sees that there are limits—to how far we're willing to create excesses and imbalances in order to extend the expansion. My fear is, if excesses and imbalances build excessively, that, in fact, will make it harder for this and future Committees to achieve our dual-mandate objectives on a sustainable basis. Thank you, Mr. Chairman.

CHAIR POWELL. Thank you. President Barkin.

MR. BARKIN. As I look at the map, I'm reminded that Richmond is geographically closest to Cleveland, Atlanta, and Philadelphia. So I believe I will be repeating what my colleagues at those three Banks said, which is that today's move makes me uncomfortable. And I would agree with those who would suggest that moving again in September feels quick.

Over and over, I've had contacts ask me why we think we need a rate cut so urgently. My board pushed me hard on this, with questions that echoed President Rosengren's words from the previous meeting and this meeting, which I might paraphrase as "With growth above trend, unemployment at 50-year lows, the market at all-time highs, corporate lending a bit "frothy," and inflation close to target, why use your scarce ammunition now?" And this case seems even stronger today than it was at our previous meeting.

As we discuss this statement, I hear three possible rationales for moving now to cut the federal funds rate. And, of course, they can be combined. A cut could be insurance at a time of uncertainty. For this rationale, I'm challenged by the data. The economy's growth, employment, and inflation seem to be headed in the right, not the wrong, direction. Uncertainty seems, if anything, lower. And it's hard to see evidence that the current policy stance is constraining—even in the most direct transmission markets, like autos. For sure, something bad could happen, either globally or politically, but that concern seems like a constant these days. If we move now, under what circumstances wouldn't we make a similar move in the future? If the concern we have is business confidence, what makes us think firms' investment posture will shift based on a modest change in what they already see as historically low rates? Put differently, might it not be better insurance to save our scarce dry powder for when we truly need it?

Alternatively, a cut might support our efforts to meet our symmetric inflation target. And I can see the case here, given our multiyear underperformance. I do wonder, though, if "the juice is worth the squeeze," particularly after taking account of the strength of the recent data. In view of what I said yesterday about the embedded nature of sectoral pricing dynamics, I'm concerned this won't have a visible effect on inflation or inflation expectations in any nearby period. If true, then what would be our next move—further rate cuts? If so, it's easy to imagine that logic leading us inexorably toward the lower bound. But I might argue that Japan and Europe have been there for quite a while without stimulating the inflation in the way we aspire to. Or, if we're too successful and we overstimulate the economy, can we count on the economy being healthy enough to bear the rate increases necessary to control it?

Of course, we can justify a cut by pointing to the markets. Either they know something we don't or not cutting will lead to a market reaction that will shake the economy. Perhaps this happened in December. I can't deny the likelihood of a market rout if we don't cut today. But this, too, makes me uncomfortable, as I believe we've been the ones moving the markets as they overparse our statements rather than the data. It's not healthy for markets to be this overindexed on us. We somehow need to find a way to send a message. So if we do make this cut, then I support Governor Brainard, President Kaplan, and others who've said, "Let's accompany it by finding a way to reset expectations."

Net, I guess my risk-management assessment is different. The upside of today's move is modest, unless there are data we aren't seeing. If the upside isn't realized, its logic will hasten our path to the effective lower bound that we fear. No move is costless, and this one spends some of our precious firepower, unmoors our decision rationale from its historical underpinnings, and potentially messages that we see hidden economic and/or inflation weaknesses. It will tempt a market reaction that will engender even more dependence than today. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President George.

MS. GEORGE. Thank you, Mr. Chairman. In March of this year, I lowered my estimates of appropriate policy, shifting to a flat policy rate path. At that time, the outlook called for growth moderating to trend in the face of downside risk stemming from a weaker global outlook and heightened trade policy uncertainty. Data from the first half of this year indicate that economic conditions have largely unfolded in line with my outlook. Real GDP growth has moderated, as expected, with strong household spending but weaker-than-expected business investment. In my view, the outlook has not fundamentally changed, and I continue to see our current policy settings as appropriate today, along the lines of alternative C.

Although widely expected at this meeting, a 25 basis point reduction does not seem warranted when the economy is growing above trend, labor markets are healthy, and consumers remain optimistic and are spending. I'm also skeptical that easing policy will be effective in moving inflation higher. After years of accommodative policy, inflation has shown little interest in adhering to historical norms or Phillips curve theory, while trade and global developments over the past year appear to be exerting additional downward pressure. It seems to me that today's circumstances call for relying on a balanced approach, as referenced in our Statement on Longer-Run Goals and Monetary Policy Strategy. Reacting to muted inflation pressures seems less compelling in the context of a strong labor market, with an unemployment rate that sits below most estimates of its longer-run level and an economy that continues to grow above trend.

Although I do not support the action in alternative B today, I am prepared to adjust our policy settings in the months ahead should economic activity fundamentally shift the outlook for the economy. With downside risk prominent and heightened market sensitivity to central bank communications, being data dependent seems particularly important now. Doing so will provide the flexibility that the Committee needs as it seeks to set policy to achieve our dual mandate. Thank you.

CHAIR POWELL. Thank you. Governor Bowman.

MS. BOWMAN. Thank you, Mr. Chair. I support alternative B as currently written, and I appreciate the perspectives that President Bullard and President Evans provided on finding the appropriate level of the federal funds rate in the course of our policy normalization.

It remains my baseline expectation that the domestic economy will perform well in 2019. The unemployment rate remains at its lowest level in decades, and various indicators point to the continued strength in labor demand and hiring activity. The BEA reported that real GDP increased at a solid rate of 2.6 percent over the first half of the year, with much of that strength reflecting momentum in consumer spending growth, and financing conditions for both households and businesses appear favorable.

But since our June meeting, the outlook for economic growth abroad has once again been downgraded, and uncertainties about trade negotiations and the step-down in global trade have persisted. We're already seeing signs that the concerns about global developments are beginning to weigh on activity in the business sector—most notably, earnings expectations for capital goods producers have moved down sharply, and measures of business sentiment remain lower.

There appears to be some risk that business investment and manufacturing activity here in the United States may weaken more than in the staff's baseline forecast.

In addition, we've fallen short of our inflation target so far this year. Although 2 percent does not seem to be an unreachable target should labor market conditions tighten to the point that they apply upward pressure on wages, we have yet to see much of this effect. The inflation shortfall this year could be concerning when viewed against the backdrop of lower inflation expectations, as shown by the downtrend in median long-run inflation expectations in the Michigan survey. The fact that we've not yet achieved our 2 percent inflation objective for an extended period, despite being well into an economic expansion, is also a relevant consideration at this point.

In sum, given all of the information we currently have in hand, in my view, the balance of risks and available data support making a modest downward adjustment to our policy stance. My expectation is that this should be sufficient to bolster confidence and support the continued economic expansion, but I will continue to watch the incoming data closely, especially for signs that inflation is firming. I will also monitor the economic data for signs that the uncertain global outlook threatens the positive outlook for economic performance here at home.

Additional warning signs in either of these areas may lead me to change my assessment for the appropriate path of monetary policy. I also agree with Governor Brainard and Presidents Barkin and Kaplan that we need to reset the expectations for future movements in the federal funds rate through our communications. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. Governor Quarles.

MR. QUARLES. Thank you, Mr. Chair. I support alternative B as written—not free of reservation, but I have many reservations about our imperfect world, yet life must go on.

I see three potentially persuasive rationales for supporting a rate cut at this meeting, only one of which I find actually persuasive—and then only on the basis of certain reasonable but not inarguable assumptions. The first rationale might be concerns over inflation and slipping inflation expectations. Inflation pressures are certainly subdued, but that's a good thing, and I don't find the current shortfall in core PCE inflation to be that concerning. As the transitory factors that depressed prices in the first quarter fade, I expect inflation to move back up toward 2 percent on a year-over-year basis. Measures of inflation are imprecise. Measures of inflation expectations are difficult to interpret, especially as market-based measures seem overly influenced by movements in oil prices.

Second, the rate cut could be justified by signs of economic slowing. The rate reduction could reflect our data dependence. The case here is certainly not clear cut. The domestic data remain quite good—strong consumption growth and a continued robust labor market. As mentioned yesterday, the global picture is more troubling, with more definitive signs of slowing growth, although I think it's interesting that the staff's estimate of the quantitative feedback of global growth developments to the United States since the June meeting actually reflects a slight positive for our growth prospects, reflecting increases in growth projections in Canada and Mexico and the great deal of trade that we do with those countries relative to the rest of the world. Overall, while admitting that the outlook is unclear, all else being equal, I would not be inclined to cut rates today on the basis of the data alone, taking into account the full force of the Chair's point that he made yesterday—that, in part, financial conditions are where they are today because people are expecting this cut.

That brings me to the third potential rationale—heightened risks and the opportunity to take out an insurance cut. So while along some dimensions—trade tensions and the debt ceiling—risks to the outlook appear to have diminished since June, I completely share the Chair's assessment that he expressed yesterday that this decline in risks, especially with respect to China trade tensions, is deceptive. I think that the public, markets, and perhaps this group have taken too much signal from the fact that people left Osaka without a shooting war having actually broken out in the South China Sea, and there is much less there than people have been expecting. On top of that, we're entering a volatile political season. I find it highly unlikely that trade tensions will diminish much further—even from what I think is the more elevated level that they're actually at rather than what people are currently perceiving—and, indeed, quite likely that tensions could escalate rapidly.

So, given the assumption that trade tensions quite likely could escalate rapidly, I am comfortable with today's rate cut, but I don't, at this point, see the case for making further cuts later in the year. Like others, I'd be quick to reassess that if the data were to deteriorate or risks were to increase meaningfully further—again, beyond what I'm already baking in to be comfortable with the cut today. I think the market has gotten ahead of itself in terms of expecting future rate cuts. Like many, I would like to maintain some optionality on our decisions later this year. But in that regard, I'm very supportive of the Chair's strategy that he described yesterday, which is not to try to move markets in one fell swoop to that conclusion, but to take the opportunity for the various communication events that will happen during the course of the intermeeting period to try to move the markets in that direction and to give us more optionality.

Finally, on ending the balance sheet runoff two months early, this change seems fairly minor and inconsequential to me from both a financial and a policy perspective. I supported halting our balance sheet reduction at the original September date, having concluded from the

Sturm und Drang in December and the caterwauling over the couple of months that followed that the people stirring the pot over this issue were either cynical or ineducable [laughter], and that the key would be to hold the balance sheet steady for a long enough time to shrink it relative to GDP as we take steps to further decrease banks' demand for reserves rather than potentially restart that frustrating and certainly fruitless education effort of six months ago. I have no problem starting that process on August 1 rather than September 30. Thank you, Mr. Chair.

CHAIR POWELL. Thank you. President Kashkari.

MR. KASHKARI. Thank you, Mr. Chairman. I support alternative A at this meeting, but with a twist that, as I did last time, I would encourage us to add forward guidance that after we cut by 50 basis points we will commit to hold the federal funds rate or not raise it until we see core inflation return to our target in a sustainable manner.

I was really struck by President George's comment yesterday at the end of the meeting. This is about Trevor's chart showing the SEP PCE inflation forecasts. This is what a picture of a ceiling looks like. Whether we meant to or not, we have taught the markets that our reaction function is that our 2 percent inflation target is a ceiling, and that, to me, is why inflation expectations are less than we would like them to be. And now we need to teach the markets a different reaction function. As, much to my surprise, folks on that end of the table, Presidents Mester, Bostic, and Rosengren—maybe I'm leaving some out—said today, I don't think 25 basis points today is going to be enough to demonstrate that we, in fact, have a different reaction function that treats 2 percent as a symmetric inflation target. That's why I think my forward guidance is a step in that direction.

Now, one thing I heard the Chair say, which I agree with, is, I don't want to make a commitment that we will do whatever it takes to raise inflation to our 2 percent goal, because we may not, in fact, be able to achieve it. But my forward guidance is not that strong a commitment. It's simply saying we're not going to raise rates until we succeed. Number one, it doesn't guarantee success. Number two, it doesn't prevent us from further reducing the target range for the federal funds rate or taking other actions. It's a stronger form of forward guidance than I think has been used historically, but it's not the ultimate form of forward guidance and does not guarantee success.

You know, my base case is not that we are Japan. I think there are important differences between us and Japan, demographics being number one, but I do think we have to learn from Japan. If we wanted a strategy to follow the Bank of Japan strategy, what would we do? We'd cut 25 basis points now, we'd follow the data, we'd cut 25 basis points later in the year, and we would slowly walk to the effective lower bound. And then once we get there, we would declare, "Okay, now it's our decision to stay here"—you know, ending up in a ditch and pretending that it's your choice to stay in the ditch. That's why I think it's much better to err on the side of being accommodative and being aggressive to avoid hitting the lower bound in the first place rather than pretending that you're going to stay there by choice. So that's why I support alternative A, which includes a 50 basis point cut, with the addition of this forward guidance.

The last comment I'll make—and I want to just go back to something that Charlie said yesterday about being precise on what the costs are to running the economy hot. If we get to a hot economy, what are the costs? One that we talked about is financial market imbalances. Is it imbalances, or is it just repricing of financial assets? That's hard to know for sure.

And then, both President Daly and President Mester—neither of you were putting a hard line in the sand, but both of you mentioned the notion of, if the economy is hot, some people may choose to take jobs as opposed to getting education. I've got to tell you, that gives me great discomfort—that we would be in the business of telling people we're going to not let the economy get hot because we want you to make different choices with your life. I mean, if the economy is hot, and people have jobs, and they choose to take jobs, God bless them for making that choice. That's their choice to make. And, again, I know neither of you were saying that—that's a strong view but that's just my reaction to something that both of you mentioned.

So that's why I think it would be really great for all of us to be very precise on what we think the costs are if the economy gets hot and then have a really frank discussion: Is it appropriate for us to respond to those potential costs? Thank you, Mr. Chair.

CHAIR POWELL. Thank you. Vice Chair Williams.

VICE CHAIR WILLIAMS. Thank you, Mr. Chair. I support alternative B. As I indicated yesterday, slowing domestic growth, a weak and uncertain global outlook, and very muted inflation pressures all argue in favor of a somewhat more accommodative policy stance.

Now, one may be tempted to put weight on the strength of household spending and financial conditions and bet on these being sustained even with an unchanged policy stance. But, as has already been mentioned a number of times, these very favorable financial conditions and all that comes with them are a result of expectations of a more accommodative policy stance already. Maintaining the current level of interest rates would lead to a tightening of financial conditions, with negative implications for the economy.

This is not an argument that we have to follow the markets. The argument is, we've got to do the right thing. The markets are reading our communications—whether it's our statements or other communications—and coming to a conclusion about where we're going. So I don't see this as being boxed in or cornered by the markets. It's really, that alternative B is the right policy stance to best achieve our goals and manage the risks, as others have said.

The low levels of inflation and inflation expectations have really sapped my confidence in a rapid return of inflation to our 2 percent goal. And, like President Kashkari, we all should be looking at the SEP PCE inflation chart from Trevor's briefing. I've been on this Committee throughout these years. These are my forecasts. I've been pretty much close to the median forecaster throughout this period, and I have learned a lot from this experience, and Governor Clarida has highlighted important lessons numerous times, I think. One is that u^*, the natural rate of unemployment or what is a sustainable level of unemployment, is clearly a lot lower than we thought. And r^* is lower than we thought. Changes in the inflation process, the weakness abroad, which is one of the factors that's held down inflation—inflation has been held down by structural and other factors.

There's a lot of learning on the way. But still, this pattern of consistently—and predictably, in a way—overpredicting inflation and being overly confident about the return of inflation to its goal, I think, should teach us, one, that the world has changed in important ways that should affect our decisions and, two, the importance of actually delivering, in a consistent, sustained way, on our symmetric 2 percent goal, given this past history.

Additional accommodation in a timely fashion, I do think, does support moving inflation back to our 2 percent goal. This is in the context of a strong economy. I think this is an important point. A lot of people think, well, do we just want inflation to be higher? It's part of wanting a strong economy—sustain the expansion to support our dual-mandate goals. So I think all of the arguments for moving to a somewhat more accommodative policy are aligned. We want to offset some negative influences on the economy. We want to keep growth around or a little bit above trend. We want unemployment to be roughly around 3½ to 3¾ percent. We want to see inflation moving up.

So I think these all make sense. Will they be game changers? Like President Kashkari, I was struck by the strong call by a number of my colleagues in the map section for a 50 basis point cut. But I don't think that that is actually the right answer at this time, because, as many have said and as President Evans, I think, appropriately said, this is a difficult decision. There are strong arguments on one side. There are strong arguments on the other side. That argues for perhaps some moderation in how we proceed at this point.

I think that we have seen that inflation expectations responded positively to our communications over the past six weeks, showing that our actions and our communication do affect the public's view of our commitment to our 2 percent symmetric goal. Obviously, I am influenced pretty strongly by the experience of Japan, the euro area, and elsewhere, where inflation expectations have drifted lower, and that has long-run consequences for how much policy space we have to deal with future downturns.

Now, looking further ahead, I continue to expect that a further rate cut may well be warranted this year. However, with today's action, we are well positioned to collect and observe more data and more information—in advance of making that decision. Thank you.

CHAIR POWELL. Thank you. And thanks for a great discussion. I would echo what President Evans said about really being able to see both sides of the case. After hearing all of the arguments again, though, I do feel this is the right decision, to make a rate cut today. I do feel that it's actually very possible to communicate the rationale for it, and I think the rationale will be accepted in general—obviously though, not by everybody, that's for sure.

But I think the far more challenging issue in this press conference and this meeting concerns what we say about the future and how to communicate that in the statement and in the press conference statement. So what I'm going to do is call a coffee break and ask people to have some coffee or maybe the decaf [laughter]—try the decaf—and come back in about 15 minutes.

I want to think in a small group about the communications. I'm taking to heart some of the comments that people made about maybe gently creating more optionality without—I don't think it's going to be appropriate to call a hard stop and say "We're done unless things get worse" or something like that, because I don't think that's where the Committee is, either. But there may be more we can do, so I'm going to do that now.

So we'll be back, why don't we say, at 20 of 11:00. That's 20 minutes from now. Thank you.

[Coffee break]

CHAIR POWELL. Okay. The coffee break's over. My thought is that the statement here should really do the work and express the consensus of the Committee and the views of people around the table and not leave a lot of work to be done in the press conference statement. So we've been considering not making any change or making one particular change to paragraph 2, which I'll ask Trevor to read out. And, again, the idea is to create optionality and give me a basis for discussing data dependence in answer to the question on how we will determine the future path of policy that will inevitably be asked during the press conference.

MR. REEVE. Okay. What we have on the table is the augmentation of the last sentence of paragraph 2 of alternative B. It would state "As the Committee contemplates potential future adjustments to the target range for the federal funds rate, it will continue to monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective." So that sentence remains unchanged after the "continue to monitor." And, again, the beginning is “As the Committee contemplates potential future adjustments to the target range for the federal funds rate, it will continue to monitor . . .”

CHAIR POWELL. I think you need to know what I would plan to say when people ask me what the added phrase means. And what I’ll say is, “Well, as I explained, here are the reasons why we made the adjustment in our policy stance, and those same factors will be the things that the Committee is going to be looking at over time.” Or—I won’t say “over time,” but “the things it’ll be looking at” and talk about the factors one by one. So the sense of it clearly is, we’re going to be looking at these things, which makes it pretty obvious that we haven’t decided to move in September. But it also doesn’t say that we’re not going to be looking at moving, or that we’ve gone to completely neutral and things have to get worse for us to move, or anything like that. I throw that open for discussion—Loretta.

MS. MESTER. Okay. To my ears, because you’re saying “potential future adjustments”—

CHAIR POWELL. “Contemplates potential future adjustments.”

MS. MESTER. Yes. The addition of that language seems to suggest more of a chance you’re going to be cutting, not less.

MR. EVANS. Yes, I thought so, too.

MR. QUARLES. I would agree with that, not having reflected on it. But then, most people who hear it won’t have reflected on it, either.

MR. ROSENGREN. Instead of “adjustments,” you could use the word “path,” and that doesn’t—the “adjustments” has a connotation of “down.” The “path” is a little bit less directional—something like that might not give a direction, necessarily.

VICE CHAIR WILLIAMS. So, "contemplates the future path of the target range for the federal funds rate."

MR. ROSENGREN. Yes.

MR. HARKER. That's better. It is better.

CHAIR POWELL. "Adjustments to the path"?

MR. HARKER. No.

MS. DALY. No, "contemplates the future path."

MR. HARKER. Yes.

MR. EVANS. I'm fine with that. I was of the opinion that President Mester and Governor Quarles were—the comment about how "adjustments," if anything, leans a little bit more toward a future cut or something like that. But I don't have a problem—

MR. QUARLES. That's the future path. I would think that's perfect, but I could probably belong on that end of the table. [Laughter]

MS. MESTER. Come on down. [Laughter]

MR. KASHKARI. Trevor, can you read it again?

MR. REEVE. Which version? The "path" version or the other one?

MR. KASHKARI. Either one.

MR. REEVE. The original suggestion: "As the Committee contemplates potential future adjustments to the target range for the federal funds rate, it will continue to monitor the implications of incoming information for the economic outlook and will act as appropriate."

MR. BARKIN. What's the alternative?

MR. REEVE. The other version: "As the Committee contemplates the future path for the federal funds rate . . ."

CHAIR POWELL. I mean, "potential future adjustments" is kind of neutral, too, isn't it?

MR. BARKIN. No, no.

MR. LAUBACH. I mean, everything hinges, arguably, on the words and how the word "potential" is taken, right? Because I think, in the interpretation that we had discussed, it's not a foregone conclusion.

CHAIR POWELL. "Potential changes to the future path of the federal funds rate"?

MR. BOSTIC. "Contemplates the future path"—I think the concern is, the focus on adjustments suggests that our bias is toward action and doing something. By taking the action out of it and just saying, "There's a path, we're going to think about what that is, and then, once we figure out what that path should look like, we might act"—it's a little more distant from the action space.

CHAIR POWELL. But that goes further than I'm looking to go. Mary.

MS. DALY. Oh, okay. The way I heard it, with "adjustments," is that, given that we were doing a rate cut today, "further adjustments"—people will baseline it off the cut and just naturally assume that the adjustment can only go one way. I think it's generally neutral if you don't move the rate, but if you move the rate and then say "adjustments," it has a carry-on effect, potentially. So I like the original language better.

MR. KAPLAN. I would stick with the original language also. I'm fearful of making people think we're actively considering future—

MR. QUARLES. Future adjustments.

MR. KAPLAN. I don't think they should come away thinking we're actively planning to cut rates further—we're basically going to monitor data first. Then we're going to figure out, as this period goes on, whether there's any reason to move. But I like the current language better.

CHAIR POWELL. So, let me say, do people broadly, then, think that the current statement language creates a lot of optionality for us?

MR. KAPLAN. No.

CHAIR POWELL. Then am I supposed to go do it in the press conference? I mean, it—

MR. KAPLAN. It depends on how you'll answer the question. The question will be "The market has priced in three or four rate cuts over the next *X* periods. Does the market have it wrong, or what's your comment on market probabilities for this many rate cuts?" They're going to ask that.

MR. QUARLES. They will ask whatever this says.

CHAIR POWELL. Yes, but that's on me. That's not the Committee. That's on me in the press conference. I think alternative B as written is roughly a neutral statement. Maybe—it's hard to say, actually, but it's roughly a neutral statement. And then, if the Committee wants to adjust expectations toward more optionality, then let the Committee do that. I don't think it's good communication to issue what will be seen as a dovish statement and then have me going back into the press conference and pull it back. I think my communications at the press conference, which will convey optionality about September, should be very consistent with what's in the statement, and I'm worried that alternative B as written does nothing to create more optionality regarding September. So I'm trying to address your concerns here.

MR. BARKIN. Jay, I'm sure you don't need line editing, but another idea would be to remove the "uncertainties" clause. I mean, you are hanging this on the global developments and the muted inflation pressures, I think, more than the uncertainties. And if you just remove the "but uncertainties about this outlook remain," arguably, that makes it less forward leaning on uncertainties. It doesn't change the "forward leaning" on inflation or global growth. I don't know if that helps.

VICE CHAIR WILLIAMS. Can I—

CHAIR POWELL. Go ahead. Yes, jump in.

VICE CHAIR WILLIAMS. Okay. I think that removing "uncertainties" turns the dial a notch. But the problem is, uncertainties are a key part of the narrative from the previous meeting from the risk management perspective that a number of people highlighted. So the problem with the statement without "uncertainties" is that the whole risk-management component is lost, and that creates the question: "Well, does that mean there are no uncertainties anymore?" That's not a part of it. So I think—

MR. BARKIN. And you don't think you could point to global developments? That may—

VICE CHAIR WILLIAMS. Well, that was the idea at that point when we were doing that, but—

MS. MESTER. Well, if it's part of the rationale, maybe the uncertainties belong in your list of things, which are global developments, muted inflation pressures, and uncertainties.

CHAIR POWELL. "Global developments" is kind of code for "uncertainties."

MS. MESTER. Yes—well, it's code, but if you moved up "uncertainties" into your list of things, it's part of your rationale for doing something today. And then you could delete it later in the statement, because that phrase, "but uncertainties," was the trigger of saying at the previous meeting that we're going to do something at this meeting. And then it was, basically, intermeeting communication reinforced that view. So you could say "global developments for the economic outlook, the uncertainties surrounding that outlook, as well as muted inflation pressures" and put in "uncertainties" there because it is part of your rationale, because you're thinking of this as an insurance cut.

CHAIR POWELL. I'm losing the thread here. How does that help create optionality?

MS. MESTER. Well, it takes out the "but uncertainties about this outlook remain," because that clause was the thing that triggered—right?—in the minds of the public that we were going to be setting up a cut at this meeting.

CHAIR POWELL. If you say "in light of uncertainties," you're kind of promoting them, too, rather than having them just "remain," you know? I'm not sure there's a—am I missing the point here?

MR. BARKIN. One is past, and one is future. So when you say "in light of global developments, uncertainties, and muted inflation," that's why we made this particular decision. When you have that thought at the back, it's almost pointed at the future. I take John's point—that was very right—which is, maybe you want to point at that.

CHAIR POWELL. Which is what? Yes.

MR. EVANS. Can I offer a different—

CHAIR POWELL. Charlie.

MR. EVANS. Let me take one crack at this, which is, to create optionality, you kind of want to turn the clock back a couple of meetings, before we started talking about this. And the language that you have, "the Committee will continue to monitor"—if you could find a clause, and I don't have it, but something like "As the Committee has done since last spring, the Committee will continue to monitor." If there was some kind of phrase that lets you refer to a couple of meetings ago, where the environment was before you were doing this, that might—

CHAIR POWELL. We can say "as always."

MS. DALY. As always.

CHAIR POWELL. But then you have to explain what that means. No one knows what that means, and that means I get to fill it up with meaning—hawkish meaning. So let's have the Committee say what it means. I mean, maybe that's the right answer—sort of a de minimis answer. Rob.

MR. KAPLAN. You're not going to like this suggestion—or maybe not you, but people around the table—but let me make it anyhow [laughter]: "The Committee will continue to monitor the implications of incoming information for the economic outlook." And I would love to say, instead of "will act as appropriate to sustain the expansion," "as it seeks to achieve its dual mandate of . . ."

CHAIR POWELL. All of the market commentary we have suggests that that would be the bomb. That would be taking it too far.

MR. KAPLAN. Too far. Okay.

CHAIR POWELL. Yes. Right. Do it all in one sentence.

MR. KAPLAN. That's fine. I got it.

MR. HARKER. To pile on to something you're probably not going to like [laughter]—

CHAIR POWELL. Please.

MR. HARKER. —because we don't like touching paragraph 3. One way of creating a little bit of optionality, in my mind, is to just change the first sentence in paragraph 3: "In determining the timing and size of any further adjustments to the federal funds rate . . ."

CHAIR POWELL. See, this paragraph talks in a way that's completely—this is just our objective function.

MR. HARKER. Well, I know. I understand. That's why it won't work.

CHAIR POWELL. We're not pulling a sign of our policy outlook into paragraph 3. I mean, you've got to signal the policy outlook in the second paragraph.

MR. BULLARD. Is your feeling that you don't have enough optionality to move again—that the current language is too restrictive?

CHAIR POWELL. No. My feeling is, you have a market that sees a two-thirds probability that we're going to move in September.

MR. BULLARD. Yes.

CHAIR POWELL. This statement does nothing to pull that back, in my opinion—or risks doing nothing. Let me finish. So I go into the press conference, and I should be delivering the same message that is broadly consistent with the statement. I think that takes the probability of a cut in September to close to 100 percent, probably, given the fact that we didn't cut by 50 basis points this meeting. All of the people who expected 50 basis points, you can add that probability on top of September now so I think you get close to 100 percent, and then we have a full intermeeting period to try to create optionality. I mean, no one has any certainty about how this works, but that would be my guess. So I'm trying to create optionality in the direction of being able to take some time, as you suggested, to wait and see.

MR. BULLARD. Yes.

CHAIR POWELL. The idea would be, over coming meetings—or the idea that it doesn't have to be September. You know, we've got the whole rest of the year. There are three meetings left in the year.

MR. BULLARD. Okay.

CHAIR POWELL. And we need a technology for stretching out that review period over that longer period of time—rather than 100 percent probability of another rate hike in September.

MS. DALY. Could you say that?

MR. BULLARD. Yes.

MS. DALY. "Over coming meetings"?

MR. BULLARD. Yes.

MS. DALY. I mean, I know you can't say "date based." Okay. Too date based?

MR. BULLARD. You can say "future adjustments."

VICE CHAIR WILLIAMS. Also, "meetings."

MR. BARKIN. "Over time." What if you just added the words "over time"—that we'll "continue to monitor, over time, the implications of incoming information"?

VICE CHAIR WILLIAMS. And knock September off completely? That sends the September probability to zero.

MR. QUARLES. That knocks September completely off.

VICE CHAIR WILLIAMS. Yes.

MR. QUARLES. You want to do that in one move?

VICE CHAIR WILLIAMS. You want to send September to zero?

CHAIR POWELL. Go ahead, Loretta.

MS. MESTER. Yes. I hate to get involved in this, because usually last-minute changes are not good, but instead of "this action supports the Committee's," could you say "with this action, the Committee continues to view," which is basically—is that too far on the one side?

VICE CHAIR WILLIAMS. It's one and done.

MS. MESTER. Is it?

VICE CHAIR WILLIAMS. It's close, but I think that might—

MS. MESTER. But not if you keep the "continues" and "uncertainties"—maybe not.

VICE CHAIR WILLIAMS. Maybe "uncertainties" might balance that. So the statement—

MR. BULLARD. I like something like "over time" or "over coming meetings." That's what I kind of like, if that's what you want to do—if you want to spread it out so that we don't put 100 percent probability of a cut in September, which, I think, as I understand it, is the goal.

CHAIR POWELL. We had many drafts go around with "with this action," and the issue is having it be read as "with this action," is that it is one and done. And I know that's what you want, right? But—

MS. MESTER. No, no, no. I wouldn't—

CHAIR POWELL. That's not what I'm trying to achieve.

MS. MESTER. No, I would never offer language that was only consistent with my—

CHAIR POWELL. Okay. I thought you were nodding to that.

MS. MESTER. No. I'm trying to work through what you want.

CHAIR POWELL. Yes, yes. So maybe that's worth—

MR. CLARIDA. It just occurs to me as I hear this that one way to move some optionality to September is to say, in the last sentence, "The Committee will take time as it closely monitors the implications of incoming information." Then you don't get into "over coming meetings." You just say we'll "take time."

CHAIR POWELL. That takes September off the table, right?

MR. QUARLES. I would think so.

MR. CLARIDA. It reduces the probability—yes.

VICE CHAIR WILLIAMS. I actually brought up "with this action" a little while ago because I think it does have—when we first thought about "with this action," it didn't have the "uncertainties," and it sounded very much like it's closing off future action. I would write it this way: "With this action, the Committee views sustained expansion of economic activity, strong labor market conditions, and inflation,"—you know, the symmetric goal—"as the most likely outcomes, but uncertainties about this outlook remain."

MS. MESTER. That seems balanced.

VICE CHAIR WILLIAMS. It gets the balance there with the "uncertainties." I think a lot of these efforts to use time or temporal words really are going to be read by markets—but, Lorie, correct me if I'm wrong—as a strong signal about one meeting or another meeting. If you say "over time" or "over meetings," it's hard. You're kind of going into date-based language.

MS. LOGAN. Yes. And I think the suggestion you just recommended balances the two, because it keeps the "uncertainties" but then provides that clarity of this meeting. So I think that's a nice balance from the market's perspective and in light of what we heard.

MR. BOSTIC. Could we just put the "uncertainties" part as attached to the next sentence so that the uncertainties are linked to our monitoring? So, "With this action, the Committee views . . . as the most likely outcomes. But uncertainties remain, so the Committee will continue to monitor." I agree with some of the things that were said earlier—that "but the uncertainties remain" being tied—

CHAIR POWELL. See, that reads like we are one and done, but we're going to monitor these uncertainties—to me. I wanted "uncertainties" to be part of the "one and done" sentence. I want it to be—

MR. QUARLES. Yes.

CHAIR POWELL. I do.

MR. BOSTIC. I don't see it as saying that.

CHAIR POWELL. No? I mean, "uncertainties" is in the same sentence with this—you know. If you move "uncertainties" to the next sentence, it seems to me you're saying, "We're done here, but we're going to be monitoring," as opposed to—and maybe I'm being—Thomas, just jump in.

MR. LAUBACH. Can I offer one suggestion to the final sentence that takes "act" away but not "appropriate"? So it would read "The Committee will continue to monitor the implications of incoming information for the economic outlook and the appropriate path for policy to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective."

MR. KAPLAN. I like that change, too.

MR. LAUBACH. So the key thing would be to say "implications of incoming information for the economic outlook and the appropriate path for policy."

CHAIR POWELL. You're losing "act as appropriate." Lorie, what do you think? John?

MS. LOGAN. I think it's keeping a version of the "as appropriate." The three things that we heard from everyone were some version of "uncertainties," some version of "closely monitor," and some version of "as appropriate." So it still maintains an element of those.

VICE CHAIR WILLIAMS. Could you say it again? I couldn't—

MR. LAUBACH. Okay. "The Committee will continue to monitor the implications of incoming information for the economic outlook and the appropriate path for policy to sustain the expansion."

MR. HARKER. "With the monitoring the appropriate path"?

MR. LAUBACH. "To monitor the implications of incoming information for the economic outlook and the appropriate path."

MR. QUARLES. “To sustain the expansion.” So you got that in there.

CHAIR POWELL. Did we move off of “with this action”?

MR. KAPLAN. No.

CHAIR POWELL. Yes.

MR. KAPLAN. I mean, my own—listening to this, I would keep that “with this action,” keep the “uncertainties,” and then take Thomas’s change to both.

MR. LAUBACH. I mean, the “act as appropriate,” I think, just sounds a little—that’s the forward-leaning piece, right?

MR. KAPLAN. I agree.

MR. LAUBACH. That’s sitting a little bit—I mean, it feels to me like it’s very close to what you try to accomplish by moving from “closely monitor” to “continue to monitor”—namely, being a little bit less on the edge of the seat.

MS. BRAINARD. I like Thomas’s suggestion.

MS. GEORGE. I do, too.

MR. HARKER. Yes, it’s good. I agree.

CHAIR POWELL. John? But, I mean, the question I have is, does it go too far? I mean, we were trying to do this by changing other stuff and leaving the “holy language” intact. If you start messing with the holy language, that’s a different thing.

VICE CHAIR WILLIAMS. The question you’ll be asked is, “Why did you change that? Is that telling us something?”

CHAIR POWELL. Yes. Why would you change that?

MR. LAUBACH. “Continue to monitor the implications for” this and that, to me, sounds like this is a description of what you’re going to do in coming months. Namely, you’re going to look at the implications of incoming information for the economic outlook and for the appropriate path of policy. So, I mean, I do believe that it sends the signal of, the urgency for action has diminished, given the action that you've taken today.

CHAIR POWELL. Yes, I think it does. I definitely think it does.

MR. LAUBACH. The urgency for further action has diminished, given the action that you've taken today.

CHAIR POWELL. I'm concerned it may send it too well.

MS. DALY. Can I ask—I don't think you like this, but I wanted to know why. There was an original suggestion, or something that came second, that, instead of saying "the Committee will continue," it was "in deciding the future path of policy, the Committee will continue." And that seems a little less problematic than the language that Thomas just suggested, in terms of going too far, but I didn't know why you didn't like it. I didn't know what discomfort it was going to cause you in the press conference.

CHAIR POWELL. But that was part of that tag-on clause before this sentence, right?

MS. DALY. No, I thought it was by itself. It was just the only change.

CHAIR POWELL. Where are we going to put it?

VICE CHAIR WILLIAMS. At the beginning.

MS. DALY. Instead of "further adjustments," we were talking about—I forget what—

MR. BULLARD. "Future policy path."

MR. WILLIAMS. "Potential future path."

MS. DALY. Yes, "future policy path."

MR. QUARLES. "Policy."

VICE CHAIR WILLIAMS. "Contemplating the future path for policy."

MR. BULLARD. So, take the original proposal—

MR. LAUBACH. “As the Committee contemplates the future path.”

MR. QUARLES. Instead of “adjustments.”

MS. DALY. Instead of “further adjustments.”

MR. BULLARD. Instead of “adjustments.”

MS. DALY. So you came out and said—Trevor, can you reread the first suggestion, I think?

CHAIR POWELL. Is this in lieu of the other five ideas?

MS. DALY. Yes. This is instead of the other five ideas. And I just wanted to go back to why—you didn’t like it originally, but you might like it better now with the other—[Laughter]

MS. DALY. So, Trevor, can you please read the one you guys came out with?

MR. REEVE. I’ll read the two versions with the “contemplates” formulation.

MS. DALY. Okay. Thank you.

MR. REEVE. “As the Committee contemplates potential future adjustments to the target range for the federal funds rate.” That’s the first one. The second is “As the Committee contemplates the future path for the federal funds rate, it will continue to monitor.”

MS. DALY. That was the one I asked—

CHAIR POWELL. And that’s it. Everything else stays the same.

MS. DALY. And that’s it.

MR. QUARLES. Everything else is the same.

MR. EVANS. What was that last one?

MR. BULLARD. It’d be very close to what the original proposal was.

MR. EVANS. Sorry, the last one is what we’re talking about?

MR. REEVE. It doesn't have "adjustments"—yes.

MR. EVANS. Could you say it again?

MS. DALY. Can you reread the last one?

MR. REEVE. "As the Committee contemplates the future path for the federal funds rate."

CHAIR POWELL. Gives me what I need.

VICE CHAIR WILLIAMS. And then it has "act as appropriate" later or "appropriate"—

MR. QUARLES. Everything else—"act as appropriate."

MS. DALY. Everything else is the same.

VICE CHAIR WILLIAMS. And I would leave everything else.

CHAIR POWELL. I think that works.

MR. CLARIDA. Yes.

MS. DALY. I added value. [Laughter]

CHAIR POWELL. Damn, Mary. [Laughter]

VICE CHAIR WILLIAMS. "Future path for the target range"?

MR. BOSTIC. "Future path for the target range"?

MR. LAUBACH. Yes—"The future path for the target range of the federal funds rate."

MR. CLARIDA. That does it.

CHAIR POWELL. All right. Read it. Read the whole thing one more time—that sentence.

MR. EVANS. The whole sentence, please.

MR. REEVE. Okay. "As the Committee contemplates the future path for the target range for the federal funds rate, it will continue to monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion, with a strong labor market and inflation near its symmetric 2 percent objective."

VICE CHAIR WILLIAMS. How many ways—

CHAIR POWELL. So—great. And we think that is a basis for creating optionality?

MR. BOSTIC. It's better.

MR. HARKER. It's better.

CHAIR POWELL. All right. Are we good, then?

VICE CHAIR WILLIAMS. No other changes.

CHAIR POWELL. All right. Let's move, then. Let me now ask Jim to make clear what the FOMC will vote on.

MR. QUARLES. Good luck. [Laughter]

MR. CLOUSE. Thank you.

CHAIR POWELL. Jim.

MR. CLOUSE. The vote will be on the monetary policy statement as it used to appear on page 4 of Trevor's briefing materials but with the amendments we've just discussed to the last sentence of paragraph 2. The vote will also encompass the directive to the Desk as it appears in the implementation note shown on pages 8 and 9 of Trevor's briefing materials.

Chair Powell	Yes
Vice Chair Williams	Yes
Governor Bowman	Yes
Governor Brainard	Yes
President Bullard	Yes
Governor Clarida	Yes
President Evans	Yes
President George	No
President Rosengren	No
Governor Quarles	Yes

CHAIR POWELL. 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 associated with policy alternative B on the second-to-last page of Trevor's briefing materials?

MR. CLARIDA. So moved.

CHAIR POWELL. May I have a second?

MS. BRAINARD. Second.

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

MR. CLARIDA. So moved.

CHAIR POWELL. May I have a second?

MS. BRAINARD. Second.

CHAIR POWELL. Without objection. At this point, I'll call on Lorie to give a brief update to the Committee on the Desk's operational plan for reinvestments under the new directive and the associated Desk statement. Lorie.

MS. LOGAN.[9] Thank you, Mr. Chair. I'll be referring to the handout on the Desk statement regarding reinvestments. In light of the Committee's decision to conclude the reduction in the SOMA portfolio, I'll briefly describe plans for implementing the new directive and communicating the operational details to the public.

[9] The materials used by Ms. Logan are appended to this transcript (appendix 9).

In accordance with the directive, all principal payments received from Treasury securities, agency debt, and agency MBS will be reinvested starting August 1. Specifically, the Desk will begin reinvesting all monthly principal payments from Treasury securities held in the SOMA portfolio through rollovers at Treasury auctions. This will require only modest adjustments to the existing rollover process to reinvest fully coupon securities. In addition, after the SOMA acquires Treasury bills through secondary-market purchases, they will also be rolled over at auction when they mature.

The Desk will also begin reinvesting principal payments from agency debt and MBS securities up to $20 billion per month in Treasury securities in a manner that roughly matches the maturity composition of Treasury securities outstanding. The Desk plans to purchase these Treasury securities in the secondary market across 11 sectors of different maturities and security types approximately in proportion to the 12-month average of the amount outstanding in each sector relative to the total amount outstanding across sectors as measured as of the end of July.

To execute these purchases, the Desk plans to conduct about 11 operations per month, one for each sector, and will generally include securities across the full maturity range of that sector. Reflecting the timing of when the Desk receives information on the expected amount of agency MBS principal payments for the month, purchases will be scheduled on a mid-month to mid-month basis, along lines similar to how we conduct MBS reinvestment purchases today. For operational reasons, there may be very slight deviations in the monthly purchase amounts. These will not be carried over to future months. However, we will continue to keep the Committee informed of these small amounts through the Desk briefing in the appendix.

Finally, as directed, the Desk will continue to reinvest agency debt and agency MBS principal payments in excess of $20 billion per month into agency MBS. And for this, no operational changes are needed.

In terms of communications, recall that the Desk released a statement and frequently asked questions after the May FOMC meeting regarding its reinvestment plans. Given the Committee's decision to bring forward the timing of these purchases to August, the Desk will release a new statement, a draft of which is in your handout. It has been updated to reflect the new directive and provides information on the operational approach to reinvestments, and we plan to release this statement along with the updates to relevant frequently asked questions this afternoon following the release of the FOMC statement.

Thank you, Mr. Chair. I'd be happy to take any questions.

CHAIR POWELL. Questions for Lorie? [No response] Seeing none, I thank you.

Our final agenda item is to confirm that the next meeting will be Tuesday to Wednesday, September 17 to 18. That concludes the meeting. As always, a buffet lunch will be served next door. Thanks very much, everybody.

END OF MEETING