Finance and Economics Discussion Series

Federal Reserve Board, Washington, D.C.
ISSN 1936-2854 (Print)
ISSN 2767-3898 (Online)

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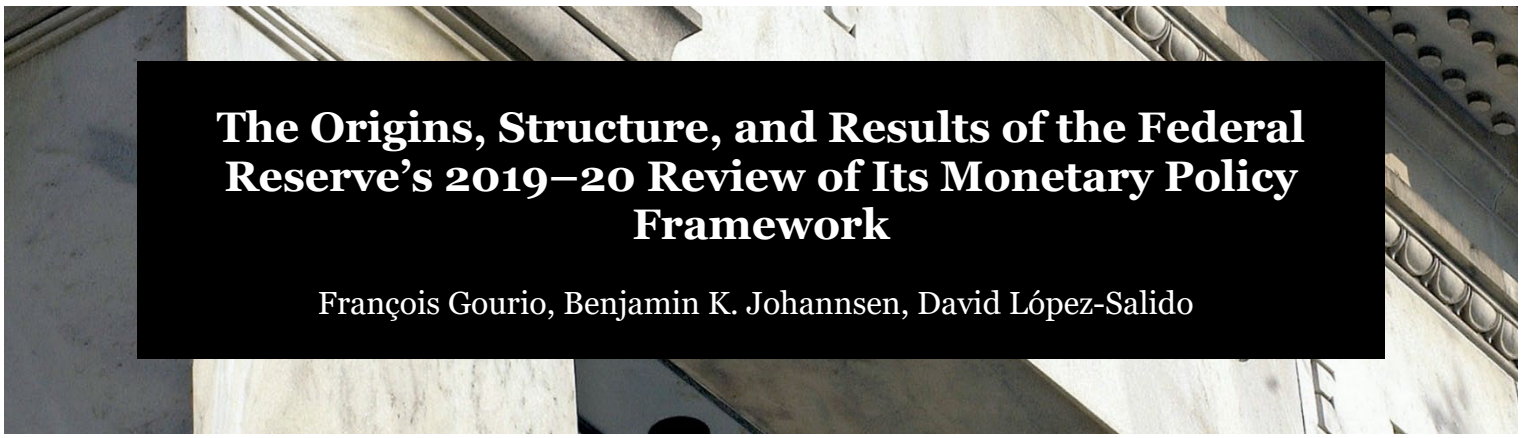
2025-065

Please cite this paper as:
Gourio, François, Benjamin K. Johannsen, and David López-Salido (2025). "The Origins, Structure, and Results of the Federal Reserve's 2019–20 Review of Its Monetary Policy Framework," Finance and Economics Discussion Series 2025-065. Washington: Board of Governors of the Federal Reserve System, https://doi.org/10.17016/FEDS.2025.065.



The Origins, Structure, and Results of the Federal Reserve's 2019–20 Review of Its Monetary Policy Framework

François Gourio, Benjamin K. Johannsen, David López-Salido

The analysis in this paper was presented to the Federal Open Market Committee as background for its discussion of the Federal Reserve's 2025 review of its monetary policy strategy, tools, and communications.

Abstract: In this paper, we describe the Federal Reserve's 2019–20 review of its monetary policy framework. First, we discuss the historical background of and motivation for the review. We then summarize the structure of the 2019–20 review, which included Fed Listens events, a flagship research conference, a series of staff analyses, and related Federal Open Market Committee (FOMC) deliberations. Finally, we present the main outcomes of the review, with particular attention paid to changes to the FOMC's Statement on Longer Run Goals and Monetary Policy Strategy.

JEL Classification: E52, E58.

Keywords: Federal Reserve, framework review, consensus statement, inflation targeting, effective lower bound.

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1. Introduction and overview

In 2012, the Federal Open Market Committee (FOMC) issued its first Statement on Longer-Run Goals and Monetary Policy Strategy (hereafter "consensus statement"), which spelled out key aspects of its monetary policy framework. The adoption of this consensus statement took place in the context of a broad, worldwide trend in central banking towards more transparency and accountability (and in, particular, towards a specific monetary regime that had become known as inflation targeting), but it was also brought about by the issues and challenges that the post Global Financial Crisis environment raised for monetary policy. From its adoption in 2012, the consensus statement was seen as "quasi-constitutional" with respect to the Committee's behavior, and was reaffirmed in the years before the 2019–20 review with relatively little change.

With employment and inflation near the Committee's objectives, 2019 was an opportune time to reflect on the performance of the existing framework, to assess the experience accumulated with new policy tools, and to study if any changes to the framework might be appropriate in light of the changing macroeconomic environment. In contrast to the process that led to the 2012 consensus statement, and consistent with the practices at some foreign central banks, the 2019–20 review included a number of public events that engaged a wide range of people, which was an innovation for the Federal Reserve. The review examined the FOMC's monetary policy framework—its strategy, tools, and communication practices—and took as given the goals assigned to the FOMC in the Federal Reserve Act, and the 2 percent longer-run inflation objective chosen by the FOMC as its numerical interpretation of its price stability objective. The review consisted of three main components: (1) *Fed Listens* events, (2) a flagship research conference, and (3) a sequence of staff memos to support the FOMC's deliberations.

A main outcome of the 2019–20 review was the revised consensus statement. The revised statement retained many of the elements of its previous versions, with some discrete changes that were the result of the experience since 2012. With the improved understanding of how its tools operate, the Committee indicated that it was prepared to use its full range of tools if economic circumstances warranted. Because of the proximity of interest rates to the effective lower bound and associated downward risks to employment and inflation, the revised consensus statement emphasized anchoring longer-term inflation expectations at the Committee's goal of 2 percent. To support this anchoring, the statement indicated that the FOMC would seek to "achieve inflation that averages 2 percent over time" and that it would "likely aim to achieve inflation moderately above 2 percent for some time" after a period of inflation running persistently below 2 percent. Additionally, to reflect the Committee's appreciation for the widespread benefits of a strong labor market, the consensus statement noted that the maximum employment objective is a broad-based and inclusive goal and, in light of the experience of low inflation and low unemployment in the years leading up to the review, the consensus statement

indicated that the FOMC would react to shortfalls from assessments of maximum employment (rather than deviations).

2. The origins: The 2012 consensus statement

The adoption of the 2012 consensus statement took place in the context of a broad, worldwide trend in central banking toward more transparency and accountability, and it was also brought about by the issues and challenges that the post-Global Financial Crisis (GFC) environment raised for monetary policy.

2.1 Historical background and motivation

In the 1990s, central banking progressively abandoned some of its traditional opacity—notably, by announcing monetary policy decisions.[1] A further step toward transparency was initiated by an influential group of researchers and central bankers who argued for announcing a numerical target (or range) for inflation, and enhancing communications to explain how the central bank would reach its target by sharing some elements of its reaction function, economic forecasts, or risk assessments.[2] This framework became known as inflation targeting, which can be either "strict," when the only goal is inflation stabilization, or "flexible," when the central bank also aims to stabilize economic activity. The inflation targeting framework, which was motivated by contemporaneous macroeconomic research, aimed to improve the ability of the central bank to shape the public's expectations by anchoring longer-term inflation expectations and also by shaping interest rate expectations through a well-understood reaction function. The generally positive experiences of a number of foreign central banks—notably, those of New Zealand and Canada, who were early adopters of inflation targeting—were also an important factor in generating interest.[3]

Discussions of an explicit inflation objective for the Federal Reserve began to occur prominently in the late 1980s, when congressional hearings were held (in 1989 and 1990) on a legislated inflation goal. Over the same period Chair Greenspan articulated (without giving a numerical inflation objective) the Committee's strategy to achieve price stability over the next

[1] At the Federal Reserve, this started in 1994 with the publication of a statement after each policy action (or substantial shift in outlook). Starting in May 1999, the FOMC published a statement after each of its meetings, containing not just policy-rate decisions but also an explanation for the decision and an indication of whether further tightening, easing (or neither) was more likely—a form of forward guidance over the near term. The table in appendix E summarizes main innovations in Federal Reserve communications since 1994. For a summary of the Federal Reserve evolution toward transparency, see Svensson (2022).

[2] See Bernanke and Mishkin (1997), Bernanke and Woodford (2005), and Svensson (2010).

[3] See Bernanke, and others (1998) for a discussion of the positive experience with inflation targeting of some foreign central banks.

several years.[4] The discussions intensified over the 1990s and early 2000s, against a background in which multiple advanced-economy central banks adopted inflation targeting.[5]

The Committee debated, on several occasions in the 1990s and 2000s, the possibility of announcing an explicit numerical inflation objective. FOMC participants' deliberations and public remarks indicate that there was considerable support for 2 percent as the level of inflation consistent with price stability, though there was also support for a lower level of inflation.[6] Nevertheless, into the 2000s the Committee refrained from adopting an inflation objective for two key reasons. First, some participants viewed the Federal Reserve as already practicing successfully an "implicit" inflation target regime, and they found it unnecessary to be explicit, preferring to retain more flexibility. Second, some participants thought a numerical inflation target might be difficult to reconcile with the dual mandate (for example, Kohn, 2003a).[7]

Although an explicit inflation target had not yet been adopted, a number of substantial innovations in communications were introduced under Chair Bernanke to foster transparency. The Summary of Economic Projections (SEP) was launched at the end of 2007, and in the following years it was extended, in particular to incorporate longer-run projections, including for inflation, in April 2009.[8] Furthermore, in April 2011, Chair Bernanke started the practice of quarterly press conferences.[9]

2.2 The 2012 consensus statement: Flexible inflation targeting

The 2012 consensus statement arose in the context of the weak recovery following the GFC, which made more monetary policy accommodation necessary but difficult, given that the

[4] An extensive analysis of internal and external discussions of an explicit inflation objective over the Greenspan and early Bernanke years is provided in López-Salido, Markowitz, and Nelson (2024a). See also Lacker (2020) and López-Salido, Markowitz, and Nelson (2024b)

[5] Other central banks that adopted features of inflation targeting early include Australia, Finland, Israel, Spain, Sweden, and the United Kingdom. Bernanke and Mishkin (1997) and Bernanke, and others (1999) drew lessons for the U. S. from this international experience.

[6] Shapiro and Wilson (2022) use textual analysis to argue that the implicit target was below 2 percent between 2000 and 2012. However, Bernanke (2015) and López-Salido, Markowitz, and Nelson (2024b) suggest that leading policymakers over this time viewed price stability as corresponding to a 2 percent rate, and Taylor (1993) postulated that the early Greenspan years were associated with a 2 percent objective. See Kiley, Mauskopf, and Wilcox (2007) for related staff work that was sent to the FOMC.

[7] Kohn (2003b, p. 84) suggested that "questions remain about the costs and benefits of such numerical targets, as opposed to more vague goals such as 'price stability,' especially where the latter (at least in the United States) is coupled with a legislated objective related to output or employment." Walsh (2009) contended that these questions continued to be the reasoning behind much of the opposition to formal inflation targeting in the U.S.

[8] In the November 2011 SEP, 12 participants projected longer run inflation at 2 percent and five projected it at 1.5 to 1.8 percent, suggesting a substantial degree of agreement regarding the Committee's longer-run inflation objective.

[9] The press conferences were held after SEP meetings. Before June 2012, these were the January, April (or May), June, and November meetings. In June 2012, the schedule was changed so that SEPs were conducted at meetings at the end of the quarter (the March, June, September and December meetings).

federal funds rate was at the effective lower bound (ELB). This led to a debate—both inside and outside the Committee—about the desirability of different tools and different strategies.[10] In this context, clarifying the inflation objective and policy strategy of the Committee was particularly valuable so that the public could better understand the Committee's intentions, which would make monetary policy more effective.[11]

The 2012 consensus statement was a succinct statement by the Committee of its interpretation of the dual mandate and its areas of agreement regarding policy strategy.[12] Probably the most important point was the adoption of a numerical longer-run goal for inflation of 2 percent, as measured by the annual change in the price index for personal consumption expenditures. The Committee also provided an interpretation of its maximum-employment goal. The consensus statement explained that the level of maximum employment shifts over time for non-monetary reasons, and that the Committee would have to assess the maximum level using a "wide range of indicators," with the median of the longer-run SEP responses for the unemployment rate cited only as an "example." When the employment and inflation goals were in conflict, the consensus statement indicated that policy would follow a "balanced approach" to promote both goals.

The notion that policy would be forward looking was emphasized in the consensus statement, which started by noting that the lags in the effects of monetary policy required decisions to be based on the medium-term outlook and the balance of risks. In turn, this allowed the "balanced approach" when the goals are in conflict to take into account "the potentially different time horizons over which employment and inflation are projected to return to levels judged consistent with its mandate."

Finally, the 2012 consensus statement indicated that policy would factor in "risks to the financial system," to the extent that they could "impede the attainment of the Committee's goals."

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[10] Several memos on alternative frameworks (including versions of nominal GDP targeting or price level targeting) and alternative tools (such as yield curve targeting) were discussed at the September and November 2011 FOMC meetings, including Erceg, Kiley, and López-Salido (2011), which built on Erceg, López-Salido, and Tetlow (2011); the memos are available on the Board's website at https://www.federalreserve.gov/monetarypolicy/2011-fomc-memos.htm.

[11] As Vice Chair Yellen explained in a speech in 2012, "With the federal funds rate near zero, and the Federal Reserve deploying the new tool of large-scale asset purchases, it became much more difficult for the public to anticipate how the FOMC would likely conduct policy over time, and how the overall stance of monetary policy would both affect and respond to economic conditions. In this situation, the FOMC began to rely heavily on forward guidance about both the likely future path of the federal funds rate and the Committee's intentions concerning asset purchases and sales. But, for this guidance to have its maximum effect, it must be understood and believed by the public" (Yellen, 2012, paragraph 13). See also Bernanke (2013).

[12] The 2012 census statement is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals_201201.pdf.

To a large extent, the 2012 consensus statement codified long-standing practices followed by the FOMC. But its publication was another important step in the direction of transparency, accountability, and predictability of monetary policy making in the U.S. In this regard, from the beginning, the consensus statement was viewed by participants as "quasi-constitutional" with respect to the FOMC's behavior. It was designed to have very broad appeal within the Committee, and while it was described as a "living and breathing document" to be reaffirmed each year, participants agreed that they did not expect to change it often, and certainly not without a very broad majority.[13] Importantly, the consensus statement was reaffirmed each year thereafter without substantial change (with one main exception, discussed below) by a unanimous or nearly unanimous straw poll of participants and vote by members of the Committee, which over time reinforced its "quasi-constitutional" stature.

3. The economic experience of the 2010s motivated the 2019–20 review

After the 2012 consensus statement was adopted, the Federal Reserve continued to gain more experience with forward guidance and asset purchases as key tools for supporting the recovery from the GFC recession in the presence of the ELB constraint, which at the time was still regarded as an infrequent, temporary phenomenon.[14] Of note, the 2012 consensus statement made no mention of the ELB. However, the evolution of the U.S. economy led to a gradual reassessment of the macroeconomic environment, toward a judgment that the ELB would likely be a recurrent concern.

3.1 The slow recovery led to innovations in the use of policy tools (2012-14)

The labor market recovery from the GFC initially appeared slow, generating a debate on the respective role of supply (structural) and demand (cyclical) factors. Inflation remained stable despite the weak economic environment, which called for additional monetary policy accommodation through asset purchases and forward guidance.[15]

In September 2012, the FOMC engaged in a round of outcome-based quantitative easing (QE3), which was intended to be conditional on the improvement of the economic outlook.[16] In

[13] In 2012, all FOMC participants were in favor, with the exception of Governor Tarullo, who abstained from the vote because he viewed the consensus statement as excessively vague.

[14] Of course, the FOMC had considered the ELB constraint, particularly in the early 2000s when the federal funds rate was low. See related work by Reifschneider and Williams (2000).

[15] A timeline of forward guidance from 2008 to 2019 is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/timeline-forward-guidance-about-the-federal-funds-rate.htm; a similar timeline regarding asset purchases is also available on the Board's website at https://www.federalreserve.gov/monetarypolicy/timeline-balance-sheet-policies.htm.

[16] From the September 2012 FOMC postmeeting statement: "If the outlook for the labor market does not improve substantially, the Committee will continue its purchases of agency mortgage-backed securities, undertake additional asset purchases, and employ its other policy tools as appropriate until such improvement is achieved in a context of price stability"; the statement is available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20120913a.htm.

December 2012, the FOMC introduced new forward guidance that incorporated explicit economic conditionality in the form of threshold-based conditions for departure of the federal funds rate from its ELB.[17] In both cases, the conditionality effectively created a sense of a reaction function by connecting policy decisions to the evolution of the economy.[18] The guidance also conveyed a sense of commitment to low interest rates, but it was presented as a conditional "expectation" or a "forecast" rather than an unconditional promise. The guidance was also accompanied by escape clauses to provide flexibility to adjust policy in response to the evolution of the economy, which loosened further the sense of commitment.

Up until around 2014, the particularly low level of the federal funds rate was regarded as a transitory factor that reflected the nature of the 2008 recession and the persistent headwinds that followed (driven by households' deleveraging, periods of fiscal policy restraint, and the effects of the euro-area debt crisis).[19] Accordingly, the March 2014 update to the FOMC's forward guidance noted that "even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run," suggesting that the neutral level of interest rates was only temporarily low.[20]

The FOMC remained concerned that asset purchases or forward guidance were less effective than movements of the federal funds rate.[21] One particular concern was that if inflation and inflation expectations were to move down while the ELB was binding on the funds rate, real interest rates would increase, which would lower economic activity, leading to even lower inflation. Even after the federal funds rate was raised above the ELB in December 2015, the FOMC remained concerned about its limited conventional policy space and the associated heightened downside risks to output and inflation.[22]

3.2 The economic environment appeared to change persistently (2014-17)

Over time, the unemployment rate declined steadily, while inflation remained persistently below 2 percent. The surprising constellation of low (real) interest rates, low output growth, and

[17] From the December 2012 FOMC statement: "[T]he Committee . . . currently anticipates that this [0 to ¼ percent] exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored"; the statement is available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20121212a.htm.

[18] Another virtue of the economic conditionality was that it minimized "Delphic" effects—that is, that the announcement of accommodative policy reflects a pessimistic outlook on the state of the economy by the FOMC.

[19] For a related discussion, see Holston, Laubach, and Williams (2017).

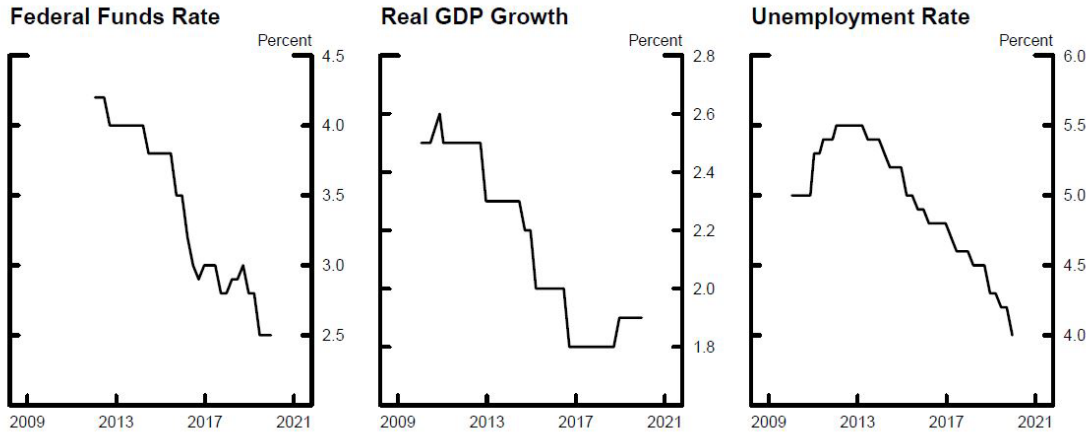
[20] See Board of Governors of the Federal Reserve (2014), "Federal Reserve Issues FOMC Statement," press release, March 19, paragraph 6, https://www.federalreserve.gov/newsevents/pressreleases/monetary20140319a.htm.

[21] Another concern was that these tools would have unintended consequences for financial stability.

[22] Risk-management concerns were one argument for a lower policy path, as uncertainty was effectively one-sided; see, for example, Erceg, and others (2017).

low inflation, which was initially viewed as a temporary phenomenon, gradually led observers—including FOMC participants—to revise down substantially their estimates of the longer-term growth rate of real gross domestic product (GDP) (g*), the longer-run normal rate of unemployment (u*), and the longer-run real rate of interest (r*) (see figure 1).

Figure 1: Medians of longer-run values in the Summary of Economic Projections



Note: Data series, where available, begin in 2010 and end in 2019.
Source: Summary of Economic Projections, Federal Open Market Committee; Federal Reserve staff calculations.

The low level of r* was particularly worrying because it appeared to limit the ability of monetary policy to stimulate the economy.[23] For instance, in the 2001 and 2008 easing cycles, the FOMC was able to cut the federal funds rate 550 basis points and 500 basis points, respectively, to support the economic recovery. Throughout the 2010s, FOMC participants were keenly aware that cuts of comparable magnitudes were not then feasible (Reifschneider, 2016).

The stability of inflation even as labor market slack varied substantially throughout the decade suggested that the Phillips curve was relatively flat—certainly flatter than previously thought.[24] At a minimum, this suggested that monetary policy should take limited signal from labor market tightness, as it was a poor guide to inflationary pressures, especially in the presence of uncertainty about u*. A flat Phillips curve also created a risk that monetary policy might not be able to prevent a decline of inflation if monetary policy was constrained by the ELB and

[23] At its October 2015 meeting, the FOMC discussed the causes and consequences of the low level of equilibrium interest rates (r*). See appendix C for related memos that were discussed at that meeting.

[24] An optimistic interpretation of the flattening of the (reduced-form) Phillips curve is that it does not reflect a structural change of the economy but rather the success of monetary policy at stabilizing inflation (for example, McLeay and Tenreyro, 2020). At its January 2018 meeting, the FOMC had a special topic discussion about inflation including the Phillips curve. See appendix D for a list and summary of the related memos that were discussed at that meeting.

inflation expectations could become anchored at too low a rate. To be sure, this was still only a theoretical possibility, as long-term inflation expectations remained reasonably well anchored in the U.S. during that period.[25] Policymakers, however, remained conscious of this risk—in part because some measures of inflation expectations in the euro area and Japan had softened amid repeatedly low inflation outcomes.

With inflation persistently below 2 percent, the FOMC again kept rates lower than anticipated. But in an effort to convey dissatisfaction with the low inflation readings and to better anchor longer-term inflation expectations at 2 percent, in January 2016 the FOMC updated the consensus statement to clarify that the inflation objective was symmetric, and that the "Committee would be concerned if inflation were running persistently above or below" its 2 percent objective.[26] As part of its prudent planning, the FOMC remained concerned with its ability to respond to a potential recession and discussed how adjustments to its communications or strategy could help.[27]

3.3 Toward a review (2018–19)

By 2018 and 2019, the protracted coexistence of low inflation, low interest rates, and low unemployment had become conspicuous. The labor market was historically strong, with labor force participation and employment across all demographic groups continuing to grow as the expansion lengthened, while inflation was still below the 2 percent objective, which had not been reached on a sustained basis since its adoption.[28] Concerns about inflation expectations grew as the low level of interest rates made a return to the ELB very likely. If the federal funds rate became constrained by the ELB and households and businesses anticipated further weakness of inflation, inflation expectations could permanently slip, creating an undesirable downward bias to inflation and economic activity. In short, the new economic environment appeared to threaten the achievement of the dual-mandate objectives.

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[25] The median longer-run inflation expectation reported in the University of Michigan household survey did exhibit some decline during that period, but it had started at an elevated level. Inflation compensation also fell substantially from 2012 to 2016, but it moved up thereafter. Staff estimates of underlying inflation also exhibited a small drift down.

[26] The January 2016 change to the consensus statement followed an October 2014 discussion in which the Committee debated several possible changes that would clarify (1) the meaning of "balanced approach," (2) the role of financial stability, and (3) the symmetry of the inflation target. The 2016 consensus statement is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals_201601.pdf.

[27] For example, in 2018, the FOMC considered a memo on the likelihood of a return to the ELB, and how effective asset purchases and forward guidance would be in this case (Chung and others, 2018). During that period, the FOMC also continued to enhance its communications—by expanding the SEP (to incorporate medians and add uncertainty fan charts in connection with the measures of risk and uncertainty). In addition, in 2019 the Chair began to hold press conferences after each FOMC meeting.

[28] Total and core PCE inflation from 2012 to 2019 averaged around 1.35 percent and 1.6 percent per year, respectively.

At the very least, the evolution of the economy and monetary policy after the GFC raised a number of strategic questions for the Committee. With employment and inflation near the Committee's objectives, 2019 was an especially opportune time to reflect on the performance of the existing framework, to assess the experience accumulated with new policy tools, and to study if any change to the framework might be appropriate. Good institutional practice also suggests that routine self-evaluation is healthy for any organization, and the 2019–20 review was in step with other central banks that had conducted periodic reviews of their monetary policy frameworks (and was also informed by their respective experiences).[29]

4. The 2019–20 review

4.1 Scope and components

The review was commissioned by Chair Powell and was announced in November 2018. For the FOMC, an innovation of the 2019–20 review was that it was designed to seek perspectives, via public forums, from a wide range of individuals and groups, including academics, other specialists, and wider U.S. communities.[30] The public components of the 2019–20 review continued a trend at the Federal Reserve in the direction of transparency, accountability, and public engagement. A goal of the open, public conversation was to enhance the public's understanding of, and trust in, the Federal Reserve.

The scope of the Federal Reserve's 2019–20 review included the examination of the FOMC's strategy, tools, and communication practices. Importantly, the review took as given the Federal Reserve Act, and with it the dual-mandate objectives and the Federal Reserve System's authorities and structure. Additionally, the Committee's 2 percent longer-run inflation goal was not a focus of the review. In speeches introducing the review, Chair Powell and Vice Chair Clarida highlighted three questions:[31]

1. Can the Federal Reserve best meet its statutory objectives with its existing monetary policy strategy, or should it consider strategies that aim to reverse past misses of the inflation objective?

[29] See Fuhrer, and others (2018) and the companion paper "Reviews of Foreign Central Banks' Monetary Policy Frameworks: Approaches, Issues, and Outcomes" by Gordon, Ortiz, and Silk (2025).

[30] At the November 7–8, 2018 FOMC meeting, Governor Clarida reported that the subcommittee on communications had reached agreement for a proposal that the Federal Reserve undertake a policy framework review in 2019. He also reported that there was support for the notion that the review would "benefit from external engagement and input from a wide range of interested folks" (see page 184 of the associated FOMC meeting transcript available at https://www.federalreserve.gov/monetarypolicy/files/FOMC20181108meeting.pdf). The Federal Reserve issued a press release on November 15, 2018, announcing the review to the public (Board of Governors, 2018). In a February 2019 speech, Vice Chair Clarida offered a public discussion of the motivation for, elements of, and key questions to be addressed by the review (Clarida, 2019).

[31] See Clarida (2019) and Powell (2019).

2. Are the existing monetary policy tools adequate to achieve and maintain maximum employment and price stability, or should the toolkit be expanded?
3. How can the FOMC's communication of its policy framework and implementation be improved?

These questions were to be addressed through three main components of the review: (1) *Fed Listens* events, (2) a flagship research conference, which was also a *Fed Listens* event, and (3) a sequence of staff memos to support the FOMC's deliberations. Chair Powell noted that "the process is more likely to produce evolution rather than revolution" (Powell, 2019, paragraph 23).

4.2 *Fed Listens*

Fifteen *Fed Listens* events were held around the country to engage a wide range of organizations and to hear about how monetary policy affects peoples' daily lives and livelihoods.[32] These events built on the long-standing engagement by the Federal Reserve with communities around the country. A key feature was that policymakers engaged directly with a range of individuals and groups on the effects that labor market conditions, inflation, interest rates, and monetary policy have on them. This public engagement helped foster the transparency of the review.[33]

A key message that emerged from these events was the importance of sustaining a strong labor market—the long expansion following the GFC was generating new opportunities for workers, especially those who had difficulty finding a job previously. This was particularly true for people in low- and moderate-income communities, and several leaders emphasized that aggregate labor market statistics did not properly capture the situation of their communities. They were also concerned that these new workers might not be able to hold on to their job in the event of a downturn.

Businesses reported a number of approaches to hire and retain workers in the tight labor market, including partnering with workforce development agencies or community colleges to develop training programs, lowering educational requirements, being more willing to employ individuals with criminal records or who could not pass a drug test, and offering additional benefits (but typically not higher wages). Low interest rates were seen as a positive by businesses but of little help for workers in low- and moderate- income communities because of limited credit availability. Throughout the *Fed Listens* events, there were few mentions of

[32] Each Reserve Bank hosted a *Fed Listens* event, with at least one member of the Board of Governors as well as the President of the Reserve Bank attending, and the Board hosted two events.

[33] A report on the *Fed Listens* events as well as videos and written summaries of each event are available on the Board's website at https://www.federalreserve.gov/monetarypolicy/review-of-monetary-policy-strategy-tools-and-communications-fed-listens-events.htm.

inflation, and many audiences did not seem to appreciate or understand the FOMC's concern with inflation being too low.

As reflected in the minutes of the December 2019 FOMC meeting, participants emphasized that the *Fed Listens* events had informed their understanding of the goals and tradeoffs associated with monetary policy.[34] In the context of low and stable inflation, FOMC participants generally saw the feedback from *Fed Listens* events as reinforcing the importance of sustaining economic expansions so that the effects of a persistently strong labor market could reach more of those who, in the past, had experienced difficulty finding employment.

Policymakers recognized that segments of the public generally did not regard it as a problem that aggregate inflation was running modestly below the Committee's 2 percent goal. Participants noted that the public's view on inflation was understandable after an extended period of low and stable inflation, and that inflation could emerge as a concern among members of the public if it became more volatile or ran at levels substantially above 2 percent. Participants generally agreed that the FOMC needed to improve its public communications about their rationale for, and commitment to, achieving 2 percent inflation on a sustained basis and ensuring that longer-term inflation expectations are anchored at levels consistent with this objective.

4.3 Flagship research conference

The flagship research conference hosted by the Federal Reserve Bank of Chicago was held on June 4–5, 2019. The event was attended by policymakers, System staff, community leaders, and prominent experts from outside the System. The sessions included overviews by academic experts on themes that were central to the review, including the FOMC's monetary policy since the GFC, assessments of maximum employment, alternative policy strategies to achieve the dual mandate, policy tools, global considerations, financial stability considerations, and central bank communications. Other sessions featured *Fed Listens* panels of community leaders who shared their perspectives on the labor market and the effects of interest rates on their constituencies. The conference was live-streamed, and related materials were posted online.[35]

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[34] The minutes of the December 10–11, 2019, FOMC meeting are available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20200103a.htm. The transcript of the December 10–11, 2019, FOMC meeting is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC20191211meeting.pdf.

[35] Conference materials are available on the Board's website at https://www.federalreserve.gov/conferences/conference-monetary-policy-strategy-tools-communications-20190605.htm and presentation videos are available on the Federal Reserve Bank of Chicago's website at https://www.chicagofed.org/events/2019/fed-listens-conference-on-monetary-policy. The academic papers presented at the conference and panel discussions were summarized in the *Fed Listens* report that is available on the Board's website at https://www.federalreserve.gov/publications/files/fedlistens-report-20200612.pdf (section 3,

4.4 Staff analytical work and FOMC deliberations

The third pillar of the review was a series of staff memos delivered over the course of five FOMC meetings to support the FOMC's deliberations. The material provided to the Committee drew on historical experience in the U.S., the experience of other central banks, and empirical and model-based analysis conducted by System staff. Below we provide an abridged overview of this analytical work, with the abstracts and links to the papers provided in appendix A.

The first set of papers, delivered in preparation for the July 2019 FOMC meeting, was designed to assist the Committee in drawing lessons from the economic experience in the post–GFC period about the use of its tools and the performance of its flexible inflation-targeting framework. The papers examined if there were ways the FOMC's tools could have been used even more effectively within the framework as it was defined at the time. Further, the papers explored if there were instances when the framework constrained the Committee from achieving its dual-mandate goals.

In their deliberations, FOMC participants judged that, overall, the monetary policy framework had served them well in pursuit of their goals. Additionally, participants felt that their experience using asset purchases and forward guidance had improved their understanding of how these tools operate, which would allow the Committee to proceed more confidently and preemptively in using these tools in the future if economic circumstances warranted. However, participants agreed that the ELB could still be an impediment to the Committee achieving its dual-mandate goals in the future.

The second set of memos, produced in preparation for the September 2019 FOMC meeting, offered the assessment that the ELB would likely bind in future recessions and analyzed ways to reduce the adverse effects of the ELB (both when the ELB is binding and when it is not binding but may likely bind in the future). While the related research literature had focused on a range of approaches to makeup strategies, there was particular focus on variants of makeup strategies which committed to the pursuit of higher inflation following an ELB episode. Price-level targeting (PLT) was a stark example of such a makeup strategy, but the papers also analyzed more flexible makeup strategies that share the feature that policymakers may deliberately target rates of inflation that deviate from 2 percent (such as temporary PLT after reaching the ELB, average inflation targeting (AIT), and one-sided AIT, which restores inflation to a 2 percent average when it has been below 2 percent for some time).[36] The staff analysis discussed challenges and drawbacks associated with makeup strategies. It noted that they heavily operate through the public's expectations of future policy and are time-inconsistent

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pages 112–129). Most of the academic papers were published in "Federal Reserve System Conference on Monetary Policy Strategy, Tools, and Communication Practices (A Fed Listens Event)," special issue, *International Journal of Central Banking,* vol. 16 (February), https://www.ijcb.org/journal/ijcb2002.pdf.

[36] Over the preceding decade, versions of makeup strategies had been included in the range of alternative strategies staff regularly presented to the FOMC in briefing materials.

because the required future monetary policy would not be appropriate from the perspective of the future policymakers (for example, a makeup strategy may imply lower interest rates than desirable once the economy reaches higher levels of inflation and employment).

FOMC participants generally agreed with the staff that ELB risks going forward were higher than they had been in decades past. Additionally, because of the downside risk to employment and inflation associated with the ELB, most participants were open to the possibility that strategies that deliver inflation rates that average 2 percent over time may perform well in achieving the dual-mandate goals. However, participants also discussed a number of challenges associated with such strategies, including that some could be too rigidly tied to the details of particular rules and that they may require time-inconsistent commitments to keep policy accommodative for a long time.

The third set of memos, which was produced for the October 2019 FOMC meeting, focused on ways to develop the use of the FOMC's tools in future downturns. The analytical work focused on the choice between date-based and state-based forward guidance as well as alternative approaches to balance sheet policies. Yield curve control, funding-for-lending, and negative interest rate policy were also considered in these papers.

FOMC participants generally agreed that the forward guidance and balance sheet policies followed by the Federal Reserve after the financial crisis had been effective in providing stimulus at the ELB and that these tools had become an important part of the FOMC's toolkit. Participants judged that it was important for the Committee to keep a wide range of tools available and to employ them as appropriate to support the economy and keep inflation expectations anchored at 2 percent. A number of participants expressed concerns related to using balance sheet policies to cap longer-term interest rates, and all participants judged that negative interest rates did not appear to be an attractive monetary policy tool in the U.S.

The final set of memos, produced for the December 2019 and January 2020 FOMC meetings, addressed a number of issues relevant to the review that had not been directly analyzed in the earlier papers. One paper discussed several different concepts of full employment frequently used by policymakers for assessing the current state of the economy. A second memo emphasized the varying distributional effects associated with economic downturns and expansions, which had been important topics of discussion at the *Fed Listens* events, and different monetary policy strategies. A third memo analyzed the financial stability implications of the monetary policy strategies and tools considered under the review, and how a low interest rate environment influences the interaction between monetary policy and financial stability. A final memo analyzed the benefits and costs associated with the use in policymaking of various concepts of inflation target ranges. In their deliberations, FOMC participants generally agreed that supervisory, regulatory, and macroprudential tools should be the primary means to address financial stability risks. They also expressed a range of views on the potential benefits and costs of different types of inflation ranges.

5. Outcomes of the review

Shortly after the fourth set of staff memos was presented to the FOMC, the COVID-19 pandemic disrupted the global economy. As a result, plans to conclude the review in early 2020 were delayed. Of note, the first few months of the pandemic seemed to validate some of the concerns that motivated the 2019–20 review: The policy rate was at the ELB, inflation was running below 2 percent, and many expected that, against a background of the severe recession and a high rate of unemployment, the recovery would be protracted.

5.1 A flexible form of average inflation targeting

The revised version of the FOMC's consensus statement was published on August 27, 2020 and was the focus of Chair Powell's Jackson Hole speech (Powell, 2020).[37] Chair Powell explained the changes in the economic environment that motivated the 2019–20 review and the evolution of the FOMC's monetary policy framework in response. He described the framework as "a flexible form of average inflation targeting" (Powell, 2020, paragraph 25).[38]

The new consensus statement reaffirmed that the FOMC's longer-run inflation objective was 2 percent and that the federal funds rate remained the FOMC's primary tool for adjusting the stance of monetary policy. Additionally, the consensus statement continued to indicate that monetary policy affects the economy with a lag, and accordingly that the Committee's policy decisions are forward looking in that they reflect the economic outlook and the balance of risks. The consensus statement also emphasized (somewhat more strongly than in 2012) that sustainably achieving the dual-mandate goals requires a stable financial system.

Further, the new consensus statement conveyed the judgment that the longer-run level of the federal funds rate that would be consistent with the dual-mandate goals had declined. It also explicitly acknowledged the challenges posed by the proximity of interest rates to the ELB because of downward risks to employment and inflation and made clear that the FOMC was prepared to use its full range of tools in pursuit of its goals.

The 2020 consensus statement placed greater emphasis on the point that having longer-term inflation expectations well anchored at 2 percent would enhance the FOMC's ability to achieve its dual-mandate goals. The consensus statement indicated that in order to anchor longer-term inflation expectations at this level, the FOMC would seek to achieve inflation that "averages 2 percent over time." It further clarified that "following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve

[37] Appendix B displays changes in the 2020 consensus statement relative to the 2019 version. The 2020 consensus statement is also available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals_202008.pdf.

[38] Over the subsequent week, Vice Chair Clarida, Governor Brainard, and President Williams also delivered speeches describing the outcomes of the 2019–20 review and the FOMC's monetary policy framework (Clarida, 2020, Brainard, 2020, and Williams, 2020).

inflation moderately above 2 percent for some time." In this way, the FOMC took a meaningful step to incorporate a flexible form of average inflation targeting into its consensus statement.

The aim of these revisions was to achieve symmetric outcomes for inflation over time, which may require some asymmetry in monetary policy strategy because of the increased risk of the ELB binding in economic downturns. Importantly, the new consensus statement did not specify a particular mathematical formula to define the average. Instead of being dictated by a mathematical formula, monetary policy sought to achieve outcomes for inflation that broadly reinforced the public's expectations that inflation would run at 2 percent over the longer run.

The new consensus statement emphasized that maximum employment is a "broad-based and inclusive goal," reflecting the benefits of a strong labor market, particularly for many in low- and moderate-income communities. The apparent flattening of the Phillips curve implied that a robust job market could be sustained without causing an outbreak in inflation—provided that longer-term inflation expectations remained consistent with 2 percent inflation. Additionally, the *Fed Listens* events and staff analytical work had indicated that estimates of u^* were highly uncertain and that overestimates of u^* could create asymmetric risks to the broad and inclusive employment mandate if expansions were cut short because of policymaker misperceptions regarding the state of the labor market and incipient inflation pressures.[39]

In view of the experience of low inflation and low unemployment in the years leading up to the review, the new consensus statement indicated that policy decisions would be informed by "assessments of the shortfalls of employment from its maximum level" rather than by "deviations from its maximum level."[40] The change to "shortfalls" aimed to clarify that employment could run at or above real-time estimates of its maximum level without causing concern, unless accompanied by signs of unwanted increases in inflation or the emergence of other risks that could impede the attainment of the FOMC's goals.[41] The 2020 consensus statement also removed the words "balanced approach." The "balanced approach" language was meant to clarify what happens when the Committee's objectives are in conflict, but its exact meaning was open to interpretation. The omission of this phrase did not suggest that one objective was more important than the other. Rather, the "shortfalls" language was intended to indicate that there was not necessarily conflict between the Committee's goals during periods of low inflation and low unemployment and that the FOMC remained fully committed to both dual-mandate goals, with neither taking precedence.

[39] For a related discussion, see Aaronson, and others (2019).

[40] For several years before the review, the staff had regularly included in briefing materials optimal control simulations that used a loss function that was asymmetric in that it only penalized deviations of the unemployment rate from its natural rate when the unemployment rate was above the natural rate.

[41] The revised consensus statement discussed maximum employment before price stability, which is the same order as listed in the Federal Reserve Act but different from the 2012 consensus statement. Additionally, with the greater appreciation of how uncertain estimates of maximum employment can be, the 2020 consensus statement no longer referenced the median of the SEP projections of the unemployment rate in the longer run.

4.1 Further outcomes of the 2019–20 review

The Federal Reserve adopted other changes as a result of the review. In the area of communications practices, the time series of diffusion indexes of uncertainty and balances of risk for GDP growth, the unemployment rate, and inflation were added to the SEP. Also, the full results of the SEP were thereafter released with the postmeeting statement, rather than several weeks later with the minutes, allowing for a more nuanced and holistic understanding of participants' views at the time of announced policy actions and the Chair's press conference.[42]

Because of the valuable insights that these events had provided, the Federal Reserve decided to continue its *Fed Listens* initiative.[43] Additionally, the FOMC announced that, roughly every five years, it expected to undertake a thorough public review of its monetary policy strategy, tools, and communication practices.

[42] Previously, the version of the SEP published with the statement included only the "dot-plot" of individual participants' appropriate paths for the federal funds rate, together with the summary statistics of their projections for GDP growth, the unemployment rate, and inflation. The shift in timing necessitated the elimination of the narrative about the SEP that had appeared previously when the results of the SEP were released with the minutes.

[43] Related materials are available on the Board's website at https://www.federalreserve.gov/fedlistens.htm.

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Appendixes

A. Staff memos produced for the 2019–20 framework review

In 2019 and 2020, FOMC discussions related to aspects of its monetary policy framework were informed by analytical work by research staff across the Federal Reserve System. In this appendix, we provide links to, and abstracts for, the 11 FEDS papers that contain information presented to the FOMC. The first three sets of memos focused on flexible inflation-targeting and its alternatives as well as lessons learned regarding the tools available in pursuit of the FOMC's goals. The final set of papers examined other relevant issues. In addition to these memos, which became FEDS papers after the conclusion of the review, a memo on the *Fed Listens* events was delivered to the FOMC and included in the *Fed Listens* report, and a summary roadmap of the review was published as a FEDS Note.[44]

A.1 First set (delivered leading up to the July 2019 FOMC meeting)[45]

Monetary Policy and Economic Performance since the Financial Crisis[46]

Abstract: We review macroeconomic performance over the period since the Global Financial Crisis and the challenges in the pursuit of the Federal Reserve's dual mandate. We characterize the use of forward guidance and balance sheet policies after the federal funds rate reached the effective lower bound. We also review the evidence on the efficacy of these tools and consider whether policymakers might have used them more forcefully. Finally, we examine the post-crisis experience of other major central banks with these policy tools.

[44] See Board of Governors of the Federal Reserve System (2020), *Fed Listens: Perspectives from the Public* (Washington: Board of Governors, June) https://www.federalreserve.gov/publications/files/fedlistens-report-20200612.pdf; David Altig, Jeff Fuhrer, Marc P. Giannoni, and Thomas Laubach (2020), "The Federal Reserve's Review of Its Monetary Policy Framework: A Roadmap," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, August 27), https://doi.org/10.17016/2380-7172.2767.

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[46] See Dario Caldara, Etienne Gagnon, Enrique Martínez-García, and Christopher J. Neely (2020), "Monetary Policy and Economic Performance since the Financial Crisis," Finance and Economics Discussion Series 2020-065 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.065.

Monetary Policy Tradeoffs and the Federal Reserve's Dual Mandate[47]

Abstract: Some key structural features of the U.S. economy appear to have changed in the recent decades, making the conduct of monetary policy more challenging. In particular, there is high uncertainty about the levels of the natural rate of interest and unemployment as well as about the effect of economic activity on inflation. At the same time, a prolonged period of below-target inflation has raised concerns about the unanchoring of inflation expectations at levels below the Federal Open Market Committee's inflation target. In addition, a low natural rate of interest increases the probability of hitting the effective lower bound during a downturn. This paper studies how these factors complicate the attainment of the objectives specified in the Federal Reserve's dual mandate in the context of a DSGE (dynamic stochastic general equilibrium) model, taking into account risk-management considerations. We find that these challenges may warrant pursuing more accommodative policy than would be desirable otherwise. However, such accommodative policy could be associated with concerns about risks to financial markets.

A.2 Second set (delivered leading up to the September 2019 FOMC meeting)[48]

Strengthening the FOMC's Framework in View of the Effective Lower Bound and Some Considerations Related to Time-Inconsistent Strategies[49]

Abstract: We analyze the framework for monetary policy in view of the effective lower bound (ELB). We find that the ELB is likely to bind in most future recessions and propose some ways that theoretical models imply that the framework could be strengthened. We also discuss ways that commitment strategies, which are not part of the framework, may improve economic outcomes. These policies can suffer from a time-inconsistency problem, which we analyze.

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[47] See Andrea Ajello, Isabel Cairó, Vasco Cúrdia, Thomas A. Lubik, and Albert Queralto (2020), "Monetary Policy Tradeoffs and the Federal Reserve's Dual Mandate," Finance and Economics Discussion Series 2020-066 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.066.

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[49] See Fernando Duarte, Benjamin K. Johannsen, Leonardo Melosi, and Taisuke Nakata (2020), "Strengthening the FOMC's Framework in View of the Effective Lower Bound and Some Considerations Related to Time-Inconsistent Strategies," Finance and Economics Discussion Series 2020-067 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.067.

Alternative Strategies: How Do They Work? How Might They Help?[50]

Abstract: Several structural developments in the U.S. economy—including lower neutral interest rates and a flatter Phillips curve—have challenged the ability of the current monetary policy framework to deliver on the Federal Open Market Committee's (FOMC) dual-mandate goals. This paper explores whether makeup strategies, in which policymakers seek to stabilize average inflation around the inflation target over some horizon, could strengthen the FOMC's ability to fulfill its dual mandate. The quantitative analysis discussed here suggests that credible makeup strategies may provide some moderate stabilization gains. The practical implementation of these strategies, however, faces a number of challenges that would have to be surmounted for the full benefit of these strategies to be realized.

How Robust Are Makeup Strategies to Key Alternative Assumptions?[51]

Abstract: We analyze the robustness of makeup strategies—policies that aim to offset, at least in part, past misses of inflation from its objective—to alternative modeling assumptions, with an emphasis on the role of inflation expectations. We survey empirical evidence on the behavior of shorter-run and long-run inflation expectations. Using simulations from the FRB/US macroeconomic model, we find that makeup strategies can moderately offset the real effects of adverse economic shocks, even when much of the public is uninformed about the monetary strategy. We also discuss the robustness of makeup strategies to alternative assumptions about the slope of the Phillips curve and the (mis)perception of economic slack.

A.3 Third set (delivered leading up to the October 2019 FOMC meeting)[52]

Issues regarding the Use of the Policy Rate Tool[53]

Abstract: We review two nonstandard uses of the policy rate tool, which provide additional stimulus when interest rates are close to or at the effective lower bound—forward guidance and negative interest rate policy. In particular, we survey the use of these tools since

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[50] See Jonas Arias, Martin Bodenstein, Hess Chung, Thorsten Drautzburg, and Andrea Raffo (2020), "Alternative Strategies: How Do They Work? How Might They Help?" Finance and Economics Discussion Series 2020-068 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.068.

[51] See James Hebden, Edward P. Herbst, Jenny Tang, Giorgio Topa, and Fabian Winkler (2020), "How Robust Are Makeup Strategies to Key Alternative Assumptions?" Finance and Economics Discussion Series 2020-069 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.069.

[52] The minutes of the October 29–30, 2019, FOMC meeting are available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20191120a.htm. The transcript of the October 29–30, 2019, FOMC meeting is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC20191030meeting.pdf.

[53] See Jeffrey Campbell, Thomas B. King, Anna Orlik, and Rebecca Zarutskie (2020), "Issues regarding the Use of the Policy Rate Tool," Finance and Economics Discussion Series 2020-070 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.070.

the start of the Great Recession, review evidence of their effectiveness, and discuss key considerations that confront monetary policymakers while using them.

Issues in the Use of the Balance Sheet Tool[54]

Abstract: This paper considers various ways of using balance sheet policy (BSP) to provide monetary policy stimulus, including the BSPs put in place by the Federal Reserve in the wake of the Global Financial Crisis, the choice between fixed-size and flow-based asset purchase programs, policies targeting interest rate levels rather than the quantity of asset purchases, and programs aimed at increasing more direct lending to households and firms. For each of these BSP options, we evaluate benefits and costs. We conclude by observing that BSPs' relative effectiveness and thus optimal configuration will depend on the shocks affecting the economy. Consequently, it would be valuable for the Federal Reserve to keep a variety of tools at its disposal and employ the ones that best fit the situation that it faces.

A.4 Fourth set (delivered leading up to the December 2019 and January 2020 FOMC meetings)[55]

Unemployment Rate Benchmarks[56]

Abstract: This paper discusses various concepts of unemployment rate benchmarks that are frequently used by policymakers for assessing the current state of the economy as it relates to the pursuit of both price stability and maximum employment. In particular, we propose two broad categories of unemployment rate benchmarks: (1) a longer-run unemployment rate expected to prevail after adjusting to business cycle shocks and (2) a stable-price unemployment rate tied to inflationary pressures. We describe how various existing measures used as benchmark rates fit within this taxonomy with the goal of facilitating the use of a common set of terms for assessments of the current state of the economy and deliberations among policymakers.

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[54] See Mark Carlson, Stefania D'Amico, Cristina Fuentes-Albero, Bernd Schlusche, and Paul Wood (2020), "Issues in the Use of the Balance Sheet Tool," Finance and Economics Discussion Series 2020-071 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.071.

[55] The minutes of the December 10–11, 2019, FOMC meeting are available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20200103a.htm. The transcript of the December 10–11, 2019, FOMC meeting is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC20191211meeting.pdf. The minutes of the January 28–29, 2020, FOMC meeting are available on the Board's website at https://www.federalreserve.gov/newsevents/pressreleases/monetary20200219a.htm.

[56] See Richard K. Crump, Christopher J. Nekarda, and Nicolas Petrosky-Nadeau (2020), "Unemployment Rate Benchmarks," Finance and Economics Discussion Series 2020-072 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.072.

Distributional Considerations for Monetary Policy Strategy[57]

Abstract: We show that makeup strategies, such as average inflation targeting and price-level targeting, can be more effective than a flexible inflation targeting strategy in overcoming the obstacles created by the effective lower bound in a heterogeneous agent New Keynesian (HANK) model. We also show that the macroeconomic stabilization benefits from such alternative strategies can be substantially larger in a HANK environment than in a representative agent New Keynesian model. We argue that gains in employment outcomes from switching to an alternative strategy would generate disproportionate improvements for historically disadvantaged households and thus have potentially long-lasting effects on the economic well-being of these groups.

Monetary Policy Strategies and Tools: Financial Stability Considerations[58]

Abstract: This paper examines potential interactions between financial stability and the monetary policy strategies and tools considered in the Federal Reserve's review of monetary policy strategy, tools, and communication practices. Achieving the Federal Reserve's goals of full employment and price stability promotes financial stability. A key concern, however, is that with a low equilibrium real interest rate, a low policy rate will be necessary, and in turn, these low rates may contribute to an increase in financial system vulnerabilities. Our analysis suggests that there are typically significant macroeconomic and financial stability benefits of using these tools and strategies, but there are plausible situations in which financial vulnerabilities are such that it would be desirable to limit their use. A clear communications strategy can help minimize financial vulnerabilities. Should vulnerabilities arise, they are often best addressed with macroprudential tools.

Considerations Regarding Inflation Ranges[59]

Abstract: We consider three ways that a monetary policy framework may employ a range for inflation outcomes: (1) ranges that acknowledge uncertainty about inflation outcomes (uncertainty ranges), (2) ranges that define the scope for intentional deviations of inflation from its target (operational ranges), and (3) ranges over which monetary policy will not react to inflation deviations (indifference ranges). After defining these three ranges, we highlight a

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[57] See Laura Feiveson, Nils Goernemann, Julie Hotchkiss, Karel Mertens, and Jae Sim (2020), "Distributional Considerations for Monetary Policy Strategy," Finance and Economics Discussion Series 2020-073 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.073.

[58] See Jonathan Goldberg, Elizabeth Klee, Edward Simpson Prescott, and Paul Wood (2020), "Monetary Policy Strategies and Tools: Financial Stability Considerations," Finance and Economics Discussion Series 2020-074 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.074.

[59] See Hess Chung, Brian M. Doyle, James Hebden, and Michael Siemer (2020), "Considerations Regarding Inflation Ranges," Finance and Economics Discussion Series 2020-075 (Washington: Board of Governors of the Federal Reserve System, August), https://doi.org/10.17016/FEDS.2020.075.

number of costs and benefits associated with each. Our discussion of the indifference range is accompanied by simulations from the FRB/US model, illustrating the potential for long-term inflation expectations to drift within the range.

B. 2020 consensus statement relative to 2019 consensus statement

In the revised Statement on Longer-Run Goals and Monetary Policy Strategy shown below, **bold red** text shows additions and ~~struck-through~~ text shows deletions relative to the statement the Committee issued on January 29, 2019. Note that the discussion of the employment and inflation goals have been separated into two paragraphs and their order reversed relative to the January 2019 statement. To improve readability, these changes are not marked with bold red text or struck-through text.

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as amended effective ~~January 29, 2019~~ **August 27, 2020**.

The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate from the Congress of promoting maximum employment, stable prices, and moderate long-term interest rates. The Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decisionmaking by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society.

Employment, inflation, ~~employment,~~ and long-term interest rates fluctuate over time in response to economic and financial disturbances. **Monetary policy plays an important role in stabilizing the economy in response to these disturbances. The Committee's primary means of adjusting the stance of monetary policy is through changes in the target range for the federal funds rate. The Committee judges that the level of the federal funds rate consistent with maximum employment and price stability over the longer run has declined relative to its historical average. Therefore, the federal funds rate is likely to be constrained by its effective lower bound more frequently than in the past. Owing in part to the proximity of interest rates to the effective lower bound, the Committee judges that downward risks to employment and inflation have increased. The Committee is prepared to use its full range of tools to achieve its maximum employment and price stability goals.** ~~Moreover, monetary policy actions tend to influence economic activity and prices with a lag. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.~~

The maximum level of employment is **a broad-based and inclusive goal that is not directly measurable and changes over time owing** largely ~~determined by~~ **to** nonmonetary factors that affect the structure and dynamics of the labor market. ~~These factors may change over time and may not be directly measurable.~~ Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the **shortfalls of employment from its** maximum level ~~of employment~~,

recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments. ~~Information about Committee participants' estimates of the longer-run normal rates of output growth and unemployment is published four times per year in the FOMC's Summary of Economic Projections. For example, in the most recent projections, the median of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.4 percent.~~

The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee ~~would be concerned if inflation were running persistently above or below this objective. Communicating this symmetric inflation goal clearly to the public helps keep~~ **judges that** longer-term inflation expectations ~~firmly~~ **that are well** anchored~~, thereby~~ **at 2 percent** foster~~ing~~ price stability and moderate long-term interest rates and ~~enhancing~~ **enhance** the Committee's ability to promote maximum employment in the face of significant economic disturbances. **In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent over time, and therefore judges that, following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.**

Monetary policy actions tend to influence economic activity, employment, and prices with a lag. In setting monetary policy, the Committee seeks **over time** to mitigate **shortfalls of employment from the Committee's assessment of its maximum level and** deviations of inflation from its longer-run goal ~~and deviations of employment from the Committee's assessments of its maximum level~~. **Moreover, sustainably achieving maximum employment and price stability depends on a stable financial system. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.**

~~These~~ **The Committee's employment and** inflation objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it ~~follows a balanced approach in promoting them, taking~~ **takes** into account the ~~magnitude of~~ **the employment shortfalls and inflation** deviations and the potentially different time horizons over which employment and inflation are projected to return to levels judged consistent with its mandate.

The Committee intends to ~~reaffirm~~ **review** these principles and to make adjustments as appropriate at its annual organizational meeting each January**, and to undertake roughly every five years a thorough public review of its monetary policy strategy, tools, and communication practices**.

C. 2015 special topic discussion about *r**

During the October 2015 FOMC meeting, participants had a special topic discussion related to *r**.[60] Staff delivered four memos (in addition to a cover memo) to support that discussion.[61] In this appendix, we summarize and provide links to those four memos.

*r**: Concepts, Measures, and Uses[62]

This memo served as a primer on the concept of *r**, its measurement, and its use in informing monetary policy. The memo offered a taxonomy of different definitions of *r**, including the "natural," "neutral," "efficient," "optimal," "long run," and "steady state" real interest rate. It also described the concept that the staff referred to as "FRB/US *r**." The memo discussed the connection between *r** concepts and their empirical counterparts, along with associated measurement challenges, with particular attention paid to the role of long-run *r** in the Taylor (1993) rule.

Real Interest Rates over the Long-Run[63]

This memo considered long-run averages of short-term real interest rates, which can be a useful reference point for setting the policy interest rate. It presented empirical evidence on the long-run behavior real interest rates for 20 countries extending back up to 60 years. The memo also presented the evolution over time of several key long-run determinants of real interest rates and assessed their influence on the observed trends in short-term real interest rates. As a part of this discussion, the memo relied on a conceptual savings-investment framework to exposit determinants of real interest rates.

Estimates of Short-Run *r** from DSGE Models[64]

This memo considered a short-run *r** concept called "the natural rate of interest"—the real interest rate that would prevail in the absence of sluggish adjustment in nominal prices and

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[60] The transcript of the October 27–28, 2015, FOMC meeting is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC20151028meeting.pdf.

[61] For the cover memo, see David Altig, Stephen A. Meyer, and Daniel G. Sullivan (2015), "Background Material for *r** Discussion," memorandum to the Federal Open Market Committee, October 13, https://www.federalreserve.gov/monetarypolicy/files/FOMC20151013memo01.pdf.

[62] See Christopher Gust, Benjamin K. Johannsen, David López-Salido, and Robert Tetlow (2015), "*r**: Concepts, Measures, and Uses," memorandum to the Federal Open Market Committee, October 13, https://www.federalreserve.gov/monetarypolicy/files/FOMC20151013memo02.pdf.

[63] See Kei-Mu Yi and Jing Zhang (2015), "Real Interest Rates over the Long-Run," memorandum to the Federal Open Market Committee, October 13, https://www.federalreserve.gov/monetarypolicy/files/FOMC20151013memo03.pdf.

[64] See Hess Chung, Marco Del Negro, Thiago Ferreira, Cristina Fuentes-Albero, Marc Giannoni, Manuel P. Gonzalez-Astudillo, Luca Guerrieri, Matteo Iacoviello, Evan F. Koenig, Jean-Philippe Laforte, Matthias Paustian, Damjan Pfajfar, Andrea Raffo, Andrea Tambalotti (2015), "Estimates of Short-Run *r** from DSGE Models," memorandum to the Federal Open Market Committee, October 13, https://www.federalreserve.gov/monetarypolicy/files/FOMC20151013memo04.pdf.

wages—in the context of DSGE models. Utilizing DSGE models connects the *r** concept to observable variables, identifies sources of fluctuation in the *r** concept, and allows for alternative policy simulations. To offer some robustness against model misspecification, the memo considered five DSGE models developed by System economists and emphasized some common themes across models. While the natural rate of interest was not the optimal real interest rate in any of the models considered, the memo reported that if monetary policy were set to achieve the natural rate of interest then each DSGE models predicted good performance of the economy and relatively stable prices.

Monetary Policy at the Lower Bound with Imperfect Information about *r**[65]

This memo started from the idea that it may be difficult to disentangle factors inducing temporary fluctuations in *r** (defined here as the "natural" real rate of interest) from those with longer-run effects. The memo studied optimal discretionary policy in a new-Keynesian model in the context of imperfectly perceived shocks to *r**. It reported that imperfect information can form a basis for a risk-management approach to policymaking under which policymakers attenuate policy actions, and that the ELB can further attenuate policy responses. The memo also argued that unobserved variables like *r** introduce communications challenges because policymakers would explain their policy actions by referring to information that cannot be verified by the public.

[65] See David López-Salido, Christopher Gust, Benjamin K. Johannsen, and Robert Tetlow (2015), "Monetary Policy at the Lower Bound with Imperfect Information about *r**," memorandum to the Federal Open Market Committee, October 13, https://www.federalreserve.gov/monetarypolicy/files/FOMC20151013memo05.pdf.

D. 2018 special topic discussion about inflation

During the January 2018 FOMC meeting, participants had a special topic discussion related to inflation.[66] Staff delivered three memos (in addition to a cover memo) to support that discussion.[67] In this appendix, we summarize and provide links to those three memos.

Explanations for Recent Low Inflation[68]

This memo described a number of explanations for why inflation had run below 2 percent for much of the period after the Great Recession and had surprised staff to the downside. These explanations included: the natural rate of unemployment or inflation's underlying trend could be lower staff thought; import prices could have had larger and longer-lasting effects than staff thought; factors specific to particular sectors of the economy could have been holding down inflation; greater competition, especially in the retail sector, could have been putting downward pressure on consumer prices; global factors, including foreign slack, could have been holding down domestic prices; the weak published inflation could reflect changes in how the official price statistics were being measured. Staff saw some of these explanations as potentially plausible and some as not compelling.

Inflation, Trends, and Long-Run Expectations: Perspectives from Forecasting Research[69]

This memo drew on academic and central bank research on inflation forecasting to address if inflation shortfalls after the Great Recession would persist. The memo reports that, in historical context the inflation shortfalls were not necessarily unusual by the standards of the research literature on inflation forecasting. The memo explained that with any given model or approach, forecast uncertainty is sizable, and through the lens of some simple benchmarks, the amount of uncertainty present leading up to the memo's publication appeared consistent with historical norms. On the basis of these findings, the memo concluded that, although it was premature to infer that something had gone wrong with forecasting models, there remained considerable scope for developing better ones, and it continued to be important to consider a

[66] The transcript of the January 30–31, 2018, FOMC meeting is available on the Board's website at https://www.federalreserve.gov/monetarypolicy/files/FOMC20180131meeting.pdf.

[67] For the cover memo, see Daniel Sullivan, Ellis Tallman, and William Wascher (2018), "Background Papers Regarding Inflation Dynamics," memorandum to the Federal Open Market Committee, January 19, https://www.federalreserve.gov/monetarypolicy/files/FOMC20180119memo01.pdf.

[68] See Andrea De Michelis, David Lebow, Jeremy Rudd, and Riccardo Trezzi (2017), "Explanations for Recent Low Inflation," memorandum to the Federal Open Market Committee, July 11, https://www.federalreserve.gov/monetarypolicy/files/FOMC20170711memo02.pdf.

[69] See Todd E. Clark (2018), "Inflation, Trends, and Long-Run Expectations: Perspectives from Forecasting Research," memorandum to the Federal Open Market Committee, January 18, https://www.federalreserve.gov/monetarypolicy/files/FOMC20180118memo01.pdf.

range of indicators and forecasts, as well as the considerable uncertainty about the inflation outlook.

What's Up with Inflation?[70]

This memo discussed the relationship among inflation (or the change in inflation), economic activity gaps, and inflation expectations. The memo concluded that there was much that was not understood about how inflation evolves in a low-inflation economy similar the economy in the post-Great Recession period. Additionally, the memo argued that the fear that inflation would spiral downward and stay always below 2 percent was probably unfounded.

[70] See Jeff Fuhrer (2018), "What's Up with Inflation?" memorandum to the Federal Open Market Committee, January 18, https://www.federalreserve.gov/monetarypolicy/files/FOMC20180118memo02.pdf.

E. Some changes in communications practices since 1994

Date	Change in communications practices
Feb. 1994	Postmeeting statement after each change in policy rate
May 1999	Postmeeting statement after each meeting together with "policy bias"
Oct. 2007	First version of SEP published with the minutes
Mar. 2009	Longer-run projections added to SEP
Apr. 2011	Quarterly press conferences, SEP summary statistics published with FOMC statement (rather than minutes)
Jan. 2012	Federal funds rate projections added to SEP, first Statement on Longer-Run Goals and Monetary Policy Strategy ("consensus statement")
Sep. 2015	Medians added to summary statistics in SEP
Dec. 2015	Implementation Note, with the Directive to the Desk, released concurrently with the postmeeting statement.
Jan. 2016	Change in consensus statement to emphasize symmetry of the inflation objective
Apr. 2017	"Fan charts" showing uncertainty based on forecast errors added to SEP
Jan. 2019	Press conferences after every FOMC meeting
Aug. 2020	Change in consensus statement following 2020 framework review
Dec. 2020	Full SEP published with FOMC statement (qualitative description removed), SEP extended to include the time series of diffusion indexes of uncertainty and balances of risk