The Murky Future of Monetary Policy

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In August 2020, the Federal Reserve unveiled its new strategic framework. One major objective of the Fed was to address its concerns over the potential consequences for the conduct of monetary policy when the policy rate was constrained by its effective lower bound. This article concludes that there are significant flaws in the new strategy and that it encourages a more discretionary approach to monetary policy and increases the risks of policy errors. The new framework is an overly complex and asymmetric flexible average inflation targeting scheme that introduces a significant inflationary bias into policy and expands the scope for discretion by broadening the Fed's employment mandate to "maximum inclusive employment." In a postscript, the article describes how quickly the flaws have been revealed and urges a reset toward a more systematic and coherent strategy that is transparent and broadly understood by the public. (JEL E52)

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INTRODUCTION

The Federal Reserve first published a "Statement on Longer-run Goals and Monetary Policy Strategy" in January 2012.[1] The purpose was to enhance transparency and accountability by clarifying its interpretation of the statutory mandates established by Congress. The two key elements of that effort were to formally establish a 2 percent longer-run inflation target as being consistent with its price stability mandate and to stress that it was not appropriate to establish a quantitative target for maximum employment, as such a target was not directly observable and was influenced by many factors unrelated to monetary policy. This document was frequently referred to by the Fed as the "consensus statement."

During the ensuing eight years, the economy continued its recovery from the 2007-09 recession. The unemployment rate fell to a 50-year low of 3.5 percent prior to the pandemic and government shutdowns of 2020. The inflation rate remained modestly below the Fed's adopted inflation target, averaging about 1.4 percent over the 2012-19 period. In response to concerns about low inflation

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and the challenges facing monetary policy as interest rates approached zero, referred to the effective lower bound (ELB), the Fed announced in November 2018 its intention to review the "strategies, tools, and communication practices it uses to pursue its congressionally-assigned mandate."[2]

The main result of this "strategic" review was revealed in a revised "Statement on Longer-Run Goals and Monetary Policy Strategy" released in August 2020.[3] A description and rationale was provided by Fed Chair Jerome Powell at the Federal Reserve Bank of Kansas City's annual Jackson Hole symposium.[4] The revised policy document significantly changed the Fed's interpretation of its dual mandate. The interpretation of the maximum employment mandate was broadened by the Fed to maximum "inclusive" employment, adding for the first time a distributional dimension to its objectives for monetary policy. The interpretation of the price stability mandate became more complex, but also more vague. This was done by replacing the existing inflation target (IT) with an average inflation target (AIT) that was flexible over time and included built-in asymmetries.

We prepared this critique of the Fed's new strategic plan in September 2020 as a response to the revised framework announced in August 2020.[5] Our view, both then and now, is that the strategy and its implementation is misguided: The attempt to include distributional objectives for the employment mandate expands the Fed's scope and rationale for policy action. This leads to a more discretionary and uncertain path of policy, increases the risks of policy errors, and makes it more difficult to hold the Fed accountable. It is ironic that while the Fed expands the scope of its employment goals, it acknowledges, as it did in the original consensus statement, and correctly in our view, that such goals may lie beyond the scope of monetary policy.

Thus, these more-expansive (and likely unachievable) ambitions could undermine the Fed's credibility and invite greater political involvement in monetary policy decisionmaking, further eroding the Fed's independence. The new flexible and asymmetric average inflation targeting framework is confusing and lacks an explanation of how the Fed will use its tools to achieve its inflation objectives. We anticipated that this would lead to confusion in financial market and consumer assessments of the future path of monetary policy, challenging the Fed's communications and its transparency along with its credibility. We indicated that these problems meant that the new strategy was unlikely to serve monetary policy or the economy well over the longer term.

These themes are developed below. At the end of the article, we provide a postscript that puts our critique in the light of the events in 2020-21. What is so striking is how quickly our concerns about the Fed's new strategic plan have become realities. The surge in inflation beginning in late 2020, prior to the Fed achieving its view of maximum inclusive employment, came as a surprise to the Fed, and its new strategy was not designed or equipped to confront such an occurrence. The confusion and uncertainty on the part of the public and markets in assessing the Fed's implementation of its new strategy highlighted the troubles with the underlying plan and its communication. It now seems readily apparent that the Fed needs to reassess its new strategy and address its shortcomings.

THE NEW PERSPECTIVE ON PRICE STABILITY

The January 2012 consensus statement was important because it established a specific quantitative target for inflation. The Fed was explicit in saying that an inflation rate of 2 percent was most consistent with its statutory mandates. Moreover, it was symmetric in that the Fed was clear that it would seek to return inflation to 2 percent to maintain long-run expectations firmly at the target regardless of whether inflation was running below or above 2 percent. The Fed chose this single numeric mandate because it had the advantage of being a simple, clear, and precise long-term commitment. It was easily communicated and widely understood. Beginning with the 2012 consensus statement and up to the start of the pandemic in 2020, inflation remained modestly below 2 percent, but most measures of inflationary expectations remained well anchored near 2 percent.

In June 2019, the Fed held a conference as part of its strategic review. Powell (2019) spoke to some of the challenges facing the Fed. He touted the sustained economic expansion and strong labor markets but expressed concerns that persistent inflation modestly below 2 percent raised the risks of a downward spiral in inflation expectations and in actual inflation.[6] Such an event, he argued, could lower the nominal interest rate such that encounters with the ELB would become more frequent, complicating the task of monetary policy. Fed Vice Chair Richard Clarida (2020) subsequently spelled out these concerns in detail, arguing that based on Fed models and specific assumptions, if inflation persisted below 2 percent it would likely harm future economic performance. The Fed's aversion to adopting a negative policy rate and its concern that quantitative easing may be less effective than it had previously thought underline its concerns and its search for an alternative approach.

In response to these concerns, the Fed's new policy framework seeks to establish an AIT but one that is flexible and asymmetric around its target of 2 percent. The messaging retains the view that 2 percent inflation is consistent with its price stability mandate and stresses that it seeks an "average" inflation rate of 2 percent rather than a target. But the Fed complicates its inflation objective and the task at hand in several ways that leave the strategy risky and potential counterproductive.

The new framework modifies the Fed's inflation objective from an IT to an AIT. This may seem a small change, but it has important ramifications for the conduct of monetary policy. AIT is similar to price-level targeting (PLT) except for the initial conditions. The key difference between an AIT and IT framework is that, to achieve an average inflation rate target, policy seeks to offset below-target inflation outcomes and above-target inflation outcomes to maintain the average at the target. An IT framework simply seeks to keep inflation on target, not making up for past deviations. The theoretical attraction of this approach is that the public will expect that periods of below-target inflation will be followed by periods of above-target inflation and vice versa. The theory suggests this can be particularly attractive in the context of the ELB. Above-target inflation expectations help at the ELB because temporarily higher expectations can reduce the real interest rate even when the Fed can no longer lower the nominal federal funds target.[7] But as discussed below, the Fed's credibility and its commitment to manage inflation and inflation expectations over time are central to countering the limitations that may occur when operating at the ELB.[8] The ability of the Fed to do so is taken as given in the rationale for the new framework. Such high regard for the Fed's credibility seems somewhat out of place given the Fed's own aforementioned concern that its previous commitment to 2 percent inflation might not have been sufficiently credible to prevent the decline in inflation and inflation expectations arising from the ELB. Why should the Fed think the public will find its new commitments any more credible than its old commitments? Nevertheless, a straightforward AIT framework does have appeal.

A challenge with the AIT is that making it credible requires more quantitative guidance regarding how it will be implemented. For example, over what horizon (2 years, 5 years, 10 years) does the Fed expect to achieve its target? How much undershooting or overshooting will be tolerated and for how long before monetary policy is likely to adjust? Put differently, how quickly and how aggressively will monetary policy respond?[9] Without clearer quantitative guidelines for its strategy, the Fed provides insufficient information about its intermediate-term goals and when it will react to movements in inflation. This lack of understanding by the public of the Fed's intentions may undercut the Fed's ability to manage inflationary expectations. The quantitative details become more important with an AIT framework. The simple IT framework requires a numeric target and understanding that the Fed is always trying to get inflation back to target. In the AIT framework, the market's understanding or assessment of the time-varying paths of inflation are critical to its success.

The Fed's new framework, however, is even more complex and confusing. The Fed complicates the new strategy further by stating that it intends to offset episodes when the inflation rate falls short of target but makes no mention of its response to inflation rates above target. One can infer from Powell's remarks that this framing was intentional and is to be interpreted as an asymmetric policy. This is troubling, as it is hard to see how such an asymmetric approach can result in an average inflation rate of 2 percent over the longer term. The approach would likely result in average inflation and inflation expectations above 2 percent, especially if there were shocks that drove inflation higher than anticipated for a period of time. If such movements were not offset by a monetary policy response to achieve lower-than-target inflation, average inflation would drift above 2 percent. For this reason, Powell (2020) stresses in his Jackson Hole speech that the "average" inflation goal is "flexible" and not to be construed in terms of some "mathematical formula that defines the average"; and Clarida (2020) subsequently stated "'inflation that averages 2 percent over time' represents an ex ante aspiration."

The asymmetry of the framework suggests that the Fed is unconcerned about the possibility that elevated inflation in the intermediate term might lead to an unexpected increase in longer-term expectations. This is especially relevant if the Fed's commitment to 2 percent is not fully credible. Will the Fed be able or willing to bring inflation and expectations back down in a timely way even if its makeup strategy is incomplete? The behavior of the Federal Open Market Committee (FOMC) when, and if, inflation rises above 2 percent will be a real test for the policy, particularly if inflation comes sooner rather than later and lasts longer than anticipated. This strategy of fine-tuning or managing a varying IT and varying inflation expectations in such a controlled manner seems overly complex and difficult to execute with any confidence.

Without clearer guidance from the Fed, the asymmetry of the framework risks inflation expectations rising above its 2 percent target and inflicting a serious blow to the Fed's credibility. Historically, rising inflation expectations frequently contribute to higher and more persistent inflationary episodes. The Fed acknowledges this risk but dismisses it in the design of its strategy. The asymmetry of the new strategy as outlined suggests the 2 percent average inflation rate is more likely to act as a floor than a target, which illustrates the clear inflationary bias of the new asymmetric approach to inflation. A symmetric AIT strategy could similarly address the ELB, with less inflationary bias, less complexity, and more transparency. Why make policy more complex when credibility and commitment are so important to the Fed's success?[10]

An alternative, but similar approach has been proposed by Bernanke (2017). He suggests a regime-switching framework where the Fed conducts policy using a standard IT regime in normal times, not the AIT adopted by the Fed, but switches to a PLT regime if and when the Fed is actually confronted with the ELB. But this is not what the Fed's new strategy describes. If the Fed had this in mind, it should be more forthcoming and describe its approach. The communication and implementation challenges for the regime-switching model would be formidable and much the same as have been highlighted. In it, the Fed would be seeking to raise expectations above 2 percent for some period of time to offset the shortfalls of inflation that it thinks occur during the binding constraint of the ELB. Because the Fed's objective would be to credibly manage inflationary expectations, it would need to develop guidelines that would signal under what circumstances and how policy would respond. Communicating this time-varying approach to inflation and inflation expectations and securing the credibility and commitment to make it successful seem quite difficult.

The Fed's rationale underlying its new framework for inflation rests largely on addressing the ELB while largely ignoring other factors that may have influenced the monetary transmission channels and aggregate demand. More specifically, the Fed made major changes to its operating framework beginning in 2008. It started paying interest on reserves, and its large-scale asset purchases decimated the traditional federal funds market and ballooned the Fed's balance sheet. The regulatory environment for banks also changed, including capital requirements, leverage ratios, and liquidity requirements, to name just a few. These and other elements may help explain why the Fed's zero interest rates and asset purchases did not stimulate aggregate demand, and thus inflation, as much as anticipated. The full array of the Fed's monetary policy framework and its tools deserve close attention alongside the Fed's focus on the ELB, expectations, and credibility.

BROADENING THE EMPLOYMENT MANDATE

The Fed's January 2012 consensus statement emphasized that the maximum employment objective cannot be defined by a numeric target, noting that employment is affected by an array of non-monetary factors. The Fed's view on this has not changed: Powell emphasized the important roles of education and skills training, health care, and fiscal policy on employment. We would add the impact of taxes and regulations on businesses and labor as important determinants of employment. The unobservable aspect of a maximum employment mandate has always made the Fed's task difficult. Yet the Fed's new framework involves two important changes that broaden its own objectives on employment that it has acknowledged may be beyond the reach of its policy tools.

First, the Fed's new strategy emphasizes that it will assess the employment mandate in terms of the "shortfall" from maximum employment, rather than "deviations." Second, the Fed broadened its mandate to "maximum inclusive employment," and Chair Powell and other Fed policymakers have emphasized the importance of adding the term "inclusive." In practice, the Fed most often communicated its assessment of the labor market in terms of the unemployment rate relative to some perspective on the unobservable normal or "natural" rate, U*, and the trend in wages. This approach, for better or worse, has a long history and meshed with the Fed's reliance on the Phillips curve as the central link between monetary policy, the labor market, and inflation.

"Shortfall" introduces asymmetry into the Fed's employment mandate. The focus on employment shortfalls suggests that the Fed places a higher priority on employment that is shy of some unmeasurable maximum, which suggests a tilt toward monetary ease. The problem is that it will always be easy to argue, and some surely will, that employment could be higher. The Fed has not offered much guidance as to how it will assess labor markets as they pertain to monetary policy actions. Maximum employment, as discussed, is determined by a myriad of factors including demographics, productivity, and labor regulations that influence the supply and demand for labor. How will the Fed interpret trends in employment-to-population ratios, participation rates, and demographics? What is the mechanism by which monetary policy can shape the desired outcomes? These issues raise both strategic and communication challenges for the Fed, as they have in the past.

Second, the revised policy framework interprets the maximum employment mandate to mean maximum inclusive employment. An inclusive labor market for all citizens is an important and desirable feature of an efficient market economy. Lifting employment of underprivileged and minority citizens would enhance economic performance and lift potential growth. Yet monetary policy is not an appropriate or effective policy tool for achieving such an objective. The Fed acknowledges its limited scope in maximizing inclusive employment. For these reasons, the maximum employment mandate has long been problematic for the Fed. The problem is aggravated by the addition of a distributional dimension to its list of policy objectives. Such an addition gives the impression that monetary policy can effectively address these laudable objectives. The explicit expansion of the Fed's monetary objectives in this manner seems unwise, as it elevates the expectations for what monetary policy is capable of achieving.

By highlighting and elaborating on the seemingly nuanced word changes in numerous presentations—the replacement of "deviations" with "shortfalls" and adding "inclusive" to maximum employment—Powell, Clarida, and other Fed members emphasize the material shift in the Fed's interpretation of its mandate.

The result of the Fed broadening and elevating the employment mandate is to deepen the quagmire that the dual mandate imposes on the Fed. It invites the public and politicians to hold the Fed accountable for goals it cannot achieve, which risks undermining the Fed's credibility and invites greater political interference into monetary policy decisionmaking, further eroding the Fed's independence. The Fed should provide more guidance to Congress on the capabilities and limitations of monetary policy and the important role of other policy tools. The Fed's new policy statement further blurs the lines of responsibility and accountability.

ABANDONING THE PHILLIPS CURVE?

For years following the financial crisis, the unemployment rate receded but was not accompanied by upward pressure on inflation. The Fed's standard response was that the Phillips curve was flatter than had been presumed—an ex post rationale for why inflation stayed low—but did not provide any insight into its view of the underlying sources of inflation or the inflation process. The Phillips curve was an empirical finding that described certain periods in the data, but it is flawed analytically and has not been a reliable or quantitatively important predictor of inflation in the past 50 years. In recent decades, the Fed has grudgingly acknowledged the unreliability the Phillips curve as a guide to inflation or the mechanism it uses to implement stabilization policy. Yet, its only response has been to heighten the role of inflationary expectations in the inflation process.

It is wise that Fed Chair Powell, Vice Chair Clarida, and other members have acknowledged that the reliance on the Phillips curve framework is deeply problematic. But while taking this step, the Fed has not replaced the Phillips curve with any alternative framework or model for predicting inflation. Specifically, Vice Chair Clarida (2020) discussed the unreliability of the Phillips curve and the inaccuracy of macro models based on it, but he did not offer any new line of thought about what causes inflation or how to predict it. The Fed emphasizes the important role of expectations but does not mention nominal gross domestic product or excess aggregate demand as sources of inflation and does not mention the money supply. Moreover, it has not explained how its tools can be used to manage inflation and achieve its goals. This is a fundamental challenge to macroeconomics, and it is critical for the Fed. The Fed should focus more on transmission channels that link policies to aggregate demand and inflation. Doing so is important for forecasting and sorting out the causes and dynamics of inflation as well as achieving its mandates.

The Fed's view that the Phillips curve is flat contributes to the change in its new strategy statement (BOG, 2020a) that now emphasizes "shortfalls of employment from the Committee's assessment of its maximum level" rather than "deviations," with important implications for monetary policy. Clarida (2020) stated that a robust jobs market and low unemployment "in the absence of evidence that price inflation is running or is likely to run persistently above mandate-consistent levels…will not, under our new framework, be a sufficient trigger for policy action." According to Clarida (2020), "This is a robust evolution in the Federal Reserve's policy framework."

These remarks clearly imply and were widely interpreted in financial markets as meaning that the Fed has significantly raised the hurdle for preemptive monetary tightening and that employment had become the Fed's primary objective. This interpretation was reinforced in the September 2020 FOMC statement that suggested the Fed would not raise the federal funds target "until labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2 percent."[11] This statement indicates a definite inflationary bias in the policy framework and an elevation of employment to the Fed's primary objective. It replaces a decades-long framework of "leaning against the wind" and seemingly runs counter to the emphasis on managing inflationary expectations. But the missing link is the absence of any clear framework or model for forecasting inflation. It also would seem to ignore the Fed's recognition that monetary policy works with lags and the evidence that, once established, inflation can be costly to bring down. Downgrading the relevance of preemptive monetary tightening without a clear understanding of the inflation process and lags between monetary policy tools and inflation seems risky.

COMMUNICATIONS

The Fed's new strategy seeks to make some fundamental changes in the Fed's reaction function as it has come to be understood by the public and the markets. The lack of clarity in the Fed's new policy framework, with asymmetric and undefined goals for both employment and inflation, has and will continue to generate communications problems. Conveying the Fed's assessment of inflationary expectations, which play a heightened role, will be difficult. The Fed will be looking to markets for indicators of expectations, while the markets will be seeking advice from the Fed. This new strategy further heightens the Fed's unhealthy relationship with financial markets.[12]

Some of the difficulties in communications arose quickly. While the FOMC voted unanimously in support of the new statement on strategy and longer-term goals, two members dissented at the September 2020 meeting, both expressing different interpretations of the Fed's forward guidance and flexibility under the new strategy. During the post-meeting press conference, Chair Powell's responses to journalists' questions about inflation, the economy, and labor market conditions echoed the Fed's old Phillips curve framework. In the absence of an alternative explanation of the inflation process, the Fed's communications have led to more confusion than clarity.

The new strategy also adds complications and uncertainties to the Fed's quarterly Summary of Economic Projections (SEP). The Fed states clearly that its projections are not forecasts, rather compilations of projections of FOMC members based on each member's assumption that "appropriate" monetary policies will be followed. But markets and the public widely view them as forecasts. In any case, these quarterly updates are widely viewed as important communication tools. The Fed has emphasized that while interest rates are its primary monetary policy instrument, it sees massive asset purchases as an important tool. Yet nowhere in the new, or old, strategic framework does the Fed address the use of the balance sheet or how it fits into its overall long-term strategy of monetary policy decisionmaking. Although the Fed sometimes offers observations as to how it hopes to shrink or exit from large asset purchases and even reduce the balance sheet, there should be a more coherent strategy articulated to improve transparency and clarity around the conduct of monetary policy.

POSTSCRIPT

The flaws in the Fed's new framework have become readily apparent even faster than we had earlier anticipated. The primary impetus of the new strategy—the Fed's fears of the downward bias in inflation imposed by the constraint of the ELB and worries that it would harm employment—have been superseded by rising inflation that is harming economic performance. Under the new framework, the Fed's delayed responses to rising inflation now risk the sustainability of the economic expansion that is critical to achieving the Fed's maximum inclusive employment mandate.

The Fed's discretionary approach that places a high priority on the employment mandate has led to bad judgments that have resulted in misguided policies. As labor markets recovered rapidly and inflation rose sharply in 2021, the Fed either ignored or misinterpreted the data. It attributed the inflation to supply shortages even though measures of aggregate demand were accelerating sharply. It failed to acknowledge that aggressive monetary easing had contributed to strong nominal demand, and it downplayed the sharp rise in inflation and inflationary expectations. The Fed stated that it would not consider tapering its asset purchases until "significant progress" had been made toward achieving its maximum employment mandate and continued to indicate it would not raise its federal funds target until maximum employment was reached. The Fed's subjective interpretation of progress toward its poorly defined employment objective was difficult to follow and seemingly inconsistent with economic data. Following its new strategic plan, the Fed eschewed preemptive monetary tightening, even after inflation and inflationary expectations had risen and there was mounting evidence of unprecedented labor market tightness.

It is important to note that the Fed has always been reluctant to adopt quantitative rules in its conduct of policy, but it does acknowledge there is value in conducting monetary policy in a systematic manner. Over the years, the public and the markets had come to a general understanding of the Fed's reaction function. The new framework publicly discarded that acquired knowledge and attempted to replace it with a new reaction function that was quite different and not well understood. Some of that confusion could have been eliminated had the Fed offered more quantitative guidance regarding how the new framework would be implemented. But without such information, the public and the markets have been left wondering how the Fed will respond to the evolving economy.

Yet our view is that the framework's flaws go beyond communication and include some of its fundamental premises. The new strategy was based on the idea that all recoveries going forward would be similar to the one that followed the financial crises: that is, exhibiting low inflation that was unresponsive to monetary stimulus and inflation that would only arise after the economy reached full employment. The new framework ruled out the possibility that inflation could arise without achieving maximum employment. The premise basically concluded that the 1970s was a unique period that would never occur again. The Fed learned the wrong lessons from history (Bordo and Levy, 2022, and Plosser, 2021). The new framework offered no guidance for monetary policy should inflation rise sharply. Of course, that is what became reality beginning in late 2020, throughout 2021, and continuing into 2022. Trying to stick to its new playbook, the Fed's response was that this was all driven by exogenous supply-side constraints and monetary policy had nothing to do with it. This strategy is gradually looking to prove a significant policy error that was a result of the flawed framework.

These weaknesses have been highlighted in the quarterly updates of the Fed's SEP. In December 2020, the Fed's SEP forecasted that PCE (personal consumption expenditures) inflation would rise to 1.8 percent in 2021 (Q4/Q4) and 2 percent in 2022, while the FOMC members estimated that it would be appropriate to keep the federal funds rate at zero in those years. In each succeeding SEP in 2021, as inflation rose dramatically and the unemployment rate fell (and FOMC members forecasted that the unemployment rate would fall below their estimates of the longer-run natural rate of unemployment), FOMC members arithmetically raised their forecasts of inflation in 2021 but continued to forecast that inflation would recede toward its 2 percent longer-run object in 2022 and 2023. While these forecasts presumably reflected the Fed's assertion that inflation was due entirely to supply shortages that it expected would dissipate, it is striking that the inflation forecasts were invariant to changes in monetary policy—the expanding balance sheet and the increasingly negative real federal funds rate—and the massive amounts of fiscal stimulus that were enacted.

The Fed's new flexible average inflation targeting and the lack of numeric guidelines for inflation raised more uncertainties. Powell has announced that the dramatic rise in inflation has met the Fed's "makeup strategy." However, it is unclear how the Fed will react if inflation remains materially above its stated 2 percent longer-run average target. As a result, the Fed's interpretation of its inflation and employment mandates and how it will adjust monetary policy to achieve them remain murky. These weaknesses pose a significant challenge for the Fed's communications and threaten its credibility. Now that the economy has recovered from the impacts of the pandemic, the Fed does not seem to have a coherent strategy. It is now appropriate for the Fed to reassess its strategic plan and address the flaws in its new framework. ■

NOTES

[1] Board of Governors of the Federal Reserve System (BOG; 2012).

[2] BOG (2018).

[3] BOG (2020a).

[4] Powell (2020).

[5] The earlier version of this paper was presented to the Shadow Open Market Committee on September 29, 2020, and to the Hoover Institution's Economic Policy Working Group on October 1, 2020. See Levy and Plosser (2020).

[6] Of course, the risks of such downward spirals have been talked about for decades, but empirical evidence is hard to find. Most recently, Japan has experienced near zero nominal short-term interest rates and near-zero inflation for nearly three decades, but there has not been evidence of any "downward spiral" in prices or real economic activity. The Fed seems most concerned that a near-zero nominal rate is bad because it would limit its ability to implement stabilization policy in response to negative shocks in the short run. The net loss in long-term welfare for the economy in this case depends critically on the model used and its parameterization.

[7] Eggertsson and Woodford (2003) present a theoretical discussion of monetary policy at the ELB. They note that PLT, which is closely related to AIT, though unlikely to be optimal, can improve performance relative to rules that are not history dependent. See Plosser (2019) for a brief discussion of the pros and cons of implementing PLT.

[8] Similarly, the theory suggests an AIT can also have benefits when inflation is above target as well. The commitment, if credible, to offset above-target outcomes with below-target inflation strengthens the commitment to the longer-run target and can help prevent inflation expectations from undesirable upward shifts.

[9] For example, if the Fed measures the shortfall in inflation since January 2012, four years of 3 percent inflation would gradually lift average inflation to 2 percent during 2012-24. Of course, it would take longer if the inflation rate rose to only 2.5 percent. The desired path of inflation in a makeup strategy would be different if the Fed used a rolling window of say two years or five years. Would the Fed allow 2.5 percent or 3 percent inflation for several years? Financial markets can only guess, as the Fed gives the public little clue as to how it expects to proceed. During the higher inflation makeup period, would inflationary expectations remain anchored to 2 percent?

[10] See Plosser (2019) for further discussion.

[11] BOG (2020b).

[12] See Levy (2019).

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