

The Fed's Strategic Approach to Monetary Policy Needs a Reboot

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In 2018-2020, the Fed undertook a strategic review of its approach to monetary policy. It culminated in a New Strategic Framework (NSF) adopted in August 2020 that replaced and fundamentally changed its original January 2012 “Statement on Longer-Run Goals and Monetary Policy Strategy.”² Commonly referred to as the consensus statement, the 2012 initiative established a numeric inflation target of 2 percent and explained that a numeric target for employment would be inappropriate. It was considered a major step for the Fed in terms of transparency and a commitment to how it would conduct monetary policy. It was followed by steady economic expansion with a significant decline in the unemployment rate and an inflation rate that hovered modestly below 2 percent while inflationary expectations modestly declined from near 3 percent to between 2 percent and 2.5 percent.

Despite this performance, the Fed worried that the persistence of sub-2 percent inflation created an unstable condition that risked a sharp decline in inflationary expectations and a decline in nominal interest rates that could lead to more frequent confrontations with the effective lower bound (ELB) and heighten the risk of deflation. As a consequence, the Fed was concerned that the scope of monetary policy in future downturns might be inhibited. In addition, the sustained low inflation amid low unemployment was inconsistent with the

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² For the original consensus statement and the new revision see Board of Governors of the Federal Reserve System (2012) and Board of Governors of the Federal Reserve System (2020) respectively.

standard Phillips Curve predictions. This led the Fed to conclude a flatter Phillips Curve was the new normal, which the Fed interpreted as meaning easier policy was more likely to boost job creation than to create inflation.

Based on these worries and perceptions, the NSF materially altered the Fed's interpretation of its dual mandate and restructured its strategic approach to monetary policy. The new framework replaced the symmetric 2 percent inflation target of the consensus statement with an asymmetric and flexible average inflation target (FAIT) that favored higher inflation to address the issues surrounding the ELB. The NSF also broadened the interpretation of the Fed's employment mandate to maximum "inclusive" employment, and adopted an asymmetric focus on "shortfalls" in place of "deviations" from maximum employment. Combined with the Fed's perception that the Phillips Curve was nearly flat, this effectively ended the Fed's historical practice of preemptive tightening in response to higher anticipated inflation. The NSF heightened the ambiguity and uncertainty regarding how monetary policy would be implemented and its expanded complexity broadened the scope for discretionary policymaking.

In September 2020, we prepared a critique of the NSF in a paper aptly titled "The Murky Future of Monetary Policy."³ We expressed concerns that the new strategy was ill-conceived and would eventually lead to monetary policy mistakes, higher inflation, greater discretion with less clarity and transparency regarding the conduct of monetary policy. It didn't take long for things to unravel. Within eight months of the Fed's adoption of the NSF, extraordinary monetary accommodation and unprecedented fiscal deficits in response to the pandemic generated monthly annualized inflation rates that rose above 5 percent. Ultimately, the inflation rate reached levels not seen in over 40 years.

Following its adoption, the Fed rarely referenced the NSF, but implementation of monetary policy during the inflation run up was consistent with it. Fed Chair Powell announced in late

³ Levy and Plosser (2020) appeared as a Hoover Institution Economics Working Paper and a subsequently published and updated version can be found as Levy and Plosser (2022). In addition, Plosser (2021) elaborated on the shortcomings of the NSF which later appeared as Plosser (2022a).

2023 that the Fed would commence a new strategic review late in 2024, consistent with his earlier statements that a strategic review would take place every five years. Inflation has receded from its recent highs and a concern is that, in its review, the Fed may choose to attribute its inflationary policy blunders to misinterpretations of the effects of the pandemic or minor errors in the implementation of an otherwise sound strategy and therefore recommend few changes to its strategic framework. This would be a mistake. It is worth noting that despite the inflation fiasco of 2020-2022, each January from 2021-2024, the Fed re-affirmed its commitment to the NSF. The upcoming strategic review is an important opportunity for the Fed to acknowledge and address the shortcomings of the 2020 NSF and put in place a framework that will improve the Fed's conduct of monetary policy.

Section I briefly reviews the evolution of monetary policy during the recovery from the Great Financial Crisis (GFC) and the conditions that motivated the Fed to undertake a strategic review. Section II describes the process and results of the strategic review. Section III summarizes the NSF. Section IV describes our critique of the NSF and why it was flawed from the outset. In Section V, we assess the performance of the NSF in the 2020s. Section VI suggests issues that should be addressed in a new strategic review and elements of what a new framework might contain.

In summary, the experiences of the last four years highlight how the Fed needs to take a step back in its strategic review before it tries to move forward. First, it needs a more thoughtful and thorough review of the inflation process and its dynamics as it relates to its monetary policy toolkit. The Fed's understanding of inflation is adrift. Reliance on an unstable or time-varying Phillips Curve is inadequate. The Fed must conduct more research on the monetary transmission mechanism, the role of the Fed's balance sheet, fiscal policy and other factors that influence aggregate demand. Nominal GDP and what affects aggregate demand must be a focus. Second, the Fed must correct its asymmetric interpretations of its dual mandate and tone back excessive word-smithing, and aim to develop a clear, balanced strategy that is suitably robust. It must reassess its asymmetric concerns about inflation and correct the

obvious flaws in its flexible average inflation targeting. For example, the Fed could return to a symmetric 2 percent inflation target with numeric bands, as followed in many other countries, to convey uncertainty and the range of outcomes. Third, the Fed should consider systematic policy rules that may be used as guidelines and provide value as reaction functions. Complicated structures and formulations should be avoided in favor of simple and understandable objectives. Fourth, the Fed needs to abandon forward guidance as an independent policy tool, and be more circumspect about the practicality of its complex modeling of managing inflationary expectations. Fifth, the Fed needs to consider ways to improve the interpretation of the SEPs and potential ways to enhance risk management amid uncertainty.

I. Evolution of Monetary Policy Prior to the Strategic Review of 2020

The consensus statement of 2012 was an important watershed in the evolution of monetary policymaking at the Fed.⁴ Many of the concepts incorporated in the statement, however, were not new. The idea of explicit targeting a specific rate of inflation and the importance of anchoring inflationary expectations were widely acknowledged as important pillars of sound monetary policy and had already been publicly adopted by some leading central banks.⁵ Preemptive monetary tightening was also generally considered an important element in controlling inflationary expectations and inflation. Low unemployment was always a high priority at the Fed and a key metric when interpreting its statutory employment mandate. The monetary policy debate revolved around the Phillips Curve and the dynamics of inflation. The fact that employment is heavily influenced by nonmonetary factors beyond the Fed's control was understood, if not widely or publicly discussed or acknowledged by the Fed. Thus, the consensus statement mostly codified the existing state of monetary policy practice. Yet, it was profoundly consequential that the Fed was willing to summarize and acknowledge its commitment to a broad framework.⁶ The transparency of such a statement meant that

⁴ Board of Governors of the Federal Reserve System (2012).

⁵ Some of the earliest central banks to adopt inflation targeting did so between 1990-1993, including New Zealand, Canada, United Kingdom, Australia and Sweden.

⁶ See Lacker (2020).

policymakers could speak with more clarity, more commitment, and more accountability than ever before.

Of course, in the wake of the GFC, many aspects of policy were changed, and the adoption of the consensus statement was but one feature of the new policy environment. For example, in 2008 the Fed began paying banks interest on reserves (IOR) held on deposit at the central bank. This was instituted in conjunction with the FOMC's decision to lower the fed funds target rate to near zero and to engage in large scale asset purchases (LSAPs or quantitative easing, QE) of US Treasury and mortgage-backed securities (MBS). These LSAPs flooded the banking system with reserves and provided large credit support to the housing sector. IOR was originally intended to help control the consequences of the Fed's large balance sheet due to QE in an environment where the fed funds rate was constrained by the effective lower bound (ELB).

Another major change in the policy environment that impacted monetary policy was the Dodd-Frank Act of 2010. Like interest on reserves and QE, the Dodd-Frank Act altered the regulatory environment of banking in significant ways. At the same time, the Fed instituted annual stress tests that forced large banks to raise capital standards and adopt more rigorous risk management practices. These changes in the policy environment impacted the lending and borrowing decisions of banking institutions, likely changing the traditional understanding of the transmission mechanism of monetary policy to the real economy and inflation.

During the ensuing eight years (2012 through 2019) prior to the pandemic, the economy continued its recovery and expansion from the GFC recession. Employment growth averaged 1.7 percent per year, the labor force expanded, and the unemployment rate fell to a 50-year low of 3.5 percent. The PCE inflation rate dipped and remained modestly below the Fed's adopted inflation target, averaging about 1.4 percent over the 2012-2019 period while core PCE inflation excluding food and energy averaged 1.6 percent.⁷ Inflationary expectations gradually

⁷ The inflation performance over this period was influenced by the significant drop in oil prices in 2014-2015. West Texas Intermediate Crude prices fell almost 60 percent between June 2014 and December 2015. This accounts for the core PCE inflation rate being above the headline. Over the same period headline and core CPI inflation rates were 1.6 and 2.0 percent respectively.

declined from somewhat over 3 percent to about 2.5 percent.⁸ And, in each of its quarterly SEPs, the Fed projected that under appropriate policy inflation would rise to its 2 percent target.⁹

The overall performance of the economy during the post-GFC expansion was moderate. Yet as it evolved, concerns about the slow improvements in labor markets and increasingly about the sub-2 percent inflation and the challenges caused by the limitations associated with the ELB on the policy rate came to dominate Fed policy discussions and research. These concerns became more frequent and more emphatic in 2015 following the rapid decline in oil prices in 2014 and 2015 and the accompanying decline in headline price indices. Of note, these concerns about low inflation and the risk of sharp declines in inflationary expectations persisted even as inflation rebounded beginning in 2016 following the drop in oil prices. Headline and core PCE inflation each averaged about 1.7 percent during 2016 and 2019. The CPI inflation, which measures consumer out-of-pocket and closely tracks survey-based measures of inflationary expectations, averaged 2.2 percent over the same period, and the core CPI averaged 2.1 percent. Thus, the very low inflation rates of 2014-2015 and the fears of declining inflation or inflation expectations proved largely ephemeral.

Even as economic performance improved and inflation edged up toward the Fed's target, concerns about the economy, inflation and low interest rates persisted. Worries about slow economic growth centered on excess saving relative to investment, insufficient demand and the low inflation and low real interest rates that resulted.¹⁰ Fed researchers estimated that the natural real rate of interest was in a secular decline to very low levels, reflecting a lower trajectory of productivity and potential real growth.¹¹

⁸ This decline is based on the University of Michigan Consumer Survey of on the 1-year ahead expected inflation.[we could add a sentence here about market based expectation.]

⁹ It is more accurate to say that FOMC participants all believed that "appropriate policy" would move inflation back towards the Fed's target, although they had differing views as to what that policy would have to be, as evidenced by the dispersion among the interest rate policies report in the SEP. The conclusion must be that the actual policies chosen by the Fed were flawed or that the transmission mechanism of monetary policy as understood by the Fed was flawed, or both.

¹⁰ See Summers (2016) for example

¹¹ See Laubach and Williams (2016).

As the unemployment rate receded and inflation remained modestly below 2 percent, the Fed's assessment was "the Phillips Curve was lower and flatter than had previously presumed."¹² This observation had several implications. First, it reinforced the view of many economists, dating back to Friedman (1968), that the Phillips Curve should not be treated as a reliable or stable way to model inflation dynamics. Nevertheless, the Fed's econometric models and its approach to policy relied heavily on the Phillips Curve for assessing and forecasting inflation dynamics. The Fed's inflation forecasts from its econometric models largely depended on a measure of "slack" (such as the deviations of the unemployment rate from some measure of the natural rate) and inflation expectations. If employment or unemployment and related measures of slack were not influencing inflation in a predictable way, then absent an alternative model of inflation dynamics, the Fed was forced to place more and more emphasis on inflationary expectations as the primary source of inflation. This involved trying to manage those expectations directly through forward guidance.¹³ Using forward guidance to influence expectations had long played a role in the Fed's thinking (Nelson 2021). Effective forward guidance was integral to the "lower for longer" strategy proposed by Reifschneider and Williams (2003), that would stimulate demand if interest rates were stuck at the ELB. Fed Chair Bernanke (2011) emphasized that "[I]nfluencing the public's expectations about future policy actions became a critical tool..." and Bernanke (2012) argued that forward guidance was an important complement to the Fed's QEIII. Woodford (2013) emphasized that forward guidance carried significant weight at the Fed. With the heightened emphasis on managing expectations, forward guidance became perceived as an independent tool of monetary policy. Second, the perceived flat Phillips Curve amid low inflation provided an opportunity for some to argue that continued monetary ease could generate stronger employment without much risk of excessive inflation. Brainard (2019) referred to "opportunistic reflation" that would "take advantage of a modest increase in actual inflation to demonstrate to the public our commitment to our inflation goal on a symmetric basis."

¹² See Yellen (2019).

¹³ Of course, if unemployment was no longer a useful determinant of inflation dynamics in the Fed's models, it becomes unclear how the Fed's policy instrument, the fed funds rate, is expected to achieve the Fed's desired inflation objective. The Fed has no answer for this as yet.

To summarize, concerns about low inflation, low real rates, and the ELB came to dominate policy discussions at the Fed. As a result, it came to dominate the agenda of the strategic review.

II. The Fed’s Strategic Review and the Development of its 2020 Framework

In November 2018, the Fed announced its intention to review the “strategies, tools, and communication practices it uses to pursue its congressionally-assigned mandates.”¹⁴ The Fed stated that its strategic review would focus on 3 areas (Clarida 2019): 1) the need for a new strategy to offset past misses, 2) are the current monetary policy tools adequate to achieve the Fed’s mandate, or would it be necessary to expand the toolkit? and 3) improving communications. The Fed’s review process included internal research, research commissioned on specific topics and a series of “Fed listens seminars” in which the Fed would convene public forums to obtain perspectives from various interested parties.

In reality, the Fed’s reference to offsetting “misses” pertained primarily to below target inflation outcomes. The premise that a new strategy should seek to offset past misses signaled strongly that the Fed intended the review would conclude that inflation targeting would no longer be the strategic imperative that it was in the original 2012 statement.¹⁵ The strategic review focused on the inflation misses and how to reinterpret its inflation mandate to allow for a time varying (and presumably higher) medium-term inflation rate. The goal was to boost inflation expectations in the medium-term when confronting shortfalls to keep the expectations from declining while maintaining its longer-term focus on 2 percent inflation to keep expectations anchored and meet its price stability mandate. The Fed’s review of its monetary policy toolkit necessary to achieve its mandate focused almost exclusively on what monetary policy tools would be most appropriate in case the Fed faced the ELB. There was no focus on the risks of higher inflation, as the Fed presumed it would know what to do if inflation

¹⁴ Board of Governors of Federal Reserve System (2018)

¹⁵ Inflation targeting is a time consistent policy in the sense that bygones are bygones. Asserting that a new strategy must offset past misses requires a time inconsistent policy. Price level targeting rather than inflation targeting would be an example of such a time inconsistent policy.

rose. The Fed had ruled out negative interest rates as impractical and undesirable (Powell (2019)). The Fed knew that its communications were a problem, but it did not consider adopting systematic rules or a better-defined reaction function that would help clarify how the Fed would respond to inflation and labor market conditions.

Unfortunately, the Fed's review mostly ignored or dismissed the impact of other important policy developments such as IOR, QE, and the increased regulatory oversight of banks and short-term funding markets, each of which may have contributed to changes in the transmission mechanism of monetary policy to inflation. Nor was there discussions of fiscal policy or the major credit allocations pursued by the Fed or the growth of its balance sheet.¹⁶ Instead, the Fed's concerns about the ELB focused the review almost exclusively on low inflation, unstable low inflationary expectations and on a presumed secular decline in the steady state real interest rate. In doing so the narrow scope of the review may have led the Fed to misinterpret the causes of the economic outcomes during the expansion and thus develop flawed or inappropriate changes in its strategic approach to monetary policy.

The content and results of the Fed's strategic review were largely in place prior to when the formal review began. In February, Clarida (2019) described the Fed's concerns, outlined the review process, and strongly hinted that the review process would conclude the need for flexible inflation averaging and a makeup strategy following periods of sub-target inflation.

Research on inflation conducted internally and by some external sources had developed models that illustrated how: 1) the misses on inflation from its 2 percent target could be a potential source of falling inflationary expectations and instability, suggesting that a new strategy was needed, 2) the existing monetary policy tools (for example, interest rates and balance sheet adjustments) needed to be augmented/enhanced by a more flexible approach to inflation that allowed for higher inflation and higher expected inflation in the medium term to prevent a

¹⁶ Some of these factors may not have been central to the inflation performance, some (QE, credit allocations) were major efforts of the central bank and perhaps now should be reviewed and included in the strategic framework if the Fed considers them important tools or instruments it intends to be used in the future.

downward spiral in expectations that could be induced by the ELB considerations, and 3) forward guidance should play a prominent role in managing inflationary expectations, and that it was a powerful independent monetary policy tool that would enhance and clarify communications. 4) Research on labor markets showed that even with the unemployment rate below estimates of the natural rate of unemployment, wage increases were not accelerating and select groups were materially behind. The flat Phillips Curve therefore, supported a more aggressive policy focused on the labor market. The Fed's review did not come up with much of about its communications.

As part of its strategic review, the Fed held a 2-day conference in June 2019 hosted by the Federal Reserve Bank of Chicago.¹⁷ In his welcoming remarks to the conference, Powell (2019) applauded the benefits of the extended economic expansion and sustained improvement in labor markets, but his focus was primarily on the ELB and the fears it engendered at the Fed. Strikingly, in the 19 paragraphs of Powell's speech, nine of them mentioned and focused on the ELB.

The academic papers presented at the conference were consistent with the concerns expressed in Powell's welcoming remarks. One paper simulated a variation of the Fed's economic model to assess the best monetary policy strategy at the ELB (cite). Another analyzed the unstable situation posed by inflation that persisted below 2 percent and emphasized the important role of forward guidance in managing inflationary expectations.¹⁸ A study of labor markets concluded that there was more slack in labor markets than generally perceived, suggesting there was more room for monetary expansion without being inflationary.¹⁹ In two separate panels, community leaders effectively articulated the benefits of sustained economic expansion and lower unemployment to their constituents.

¹⁷ Board of Governors of the Federal Reserve (2019)

¹⁸ Swensson (2019)

¹⁹ Abraham and Haltiwanger (2019).

III. The New Strategic Framework: Its Components and Characteristics

Powell (2020) announced the NSF at the Kansas City Fed's Jackson Hole symposium in August 2020. The new approach represented a substantive change to the 2012 consensus statement. It significantly changed the Fed's interpretation of its congressional mandates, introducing important asymmetries and flexibilities to its inflation and employment goals and altered its strategic approach to monetary policy accordingly. The new flexible average inflation targeting (FAIT) favored higher inflation. The enhanced maximum inclusive employment objective broadened the scope of the Fed's mandate to consider distributional aspects of the labor market. The shift in focus to "shortfalls" from "deviations" from maximum employment represented to Fed Vice Chair Rich Clarida a "robust evolution in the Federal Reserve's policy framework".²⁰ The consequence of these changes was to materially elevate the priority of employment.

The Inflation Target—The New FAIT – In place of the Fed's 2012 balanced 2 percent inflation target, the NSF instituted a form of flexible average inflation targeting in which inflation would average 2 percent overtime with a makeup strategy following a period of sub-2 percent inflation. The new plan was purposely asymmetric by not including a makeup strategy following a period of above-2% inflation. The NSF reads: "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."²¹

The differences from the 2012 strategic plan are significant. The 2012 strategic plan made it clear that whether actual inflation was above or below the Fed's target, policy would seek to return inflation to 2 percent. In contrast, the NSF did not include any numeric guidelines for the

²⁰ Clarida (2020)

²¹ Board of Governors of the Federal Reserve (2020).

makeup strategy or guidelines as to when it would be employed, leaving open the issue of how high and for how long the Fed would pursue and tolerate above-2 percent inflation. This ambiguity about when and how the makeup strategy would be implemented added uncertainty about the Fed's inflation goals and how policy would be conducted and made it more difficult to judge the Fed's success and to hold it accountable.

The Fed provided little additional interpretation to its FAIT because it presumed inflation would stay low and it was confident in its ability to manage inflation and inflationary expectations even if inflation did rise.

Maximum Inclusive Employment and “Shortfalls”– The NSF materially reinterpreted employment mandate as well. It repeated the 2012 statement that stressed that the maximum level of employment was “largely determined by nonmonetary factors that affect the structure and dynamics of the labor market.”²², yet it expanded the mandate to “maximum inclusive employment.” This broadening of the maximum employment objective to be “inclusive” implicitly establishes a goal of maximum employment for all sub - groups of the labor force. In addition, whereas the 2012 statement stated that monetary policy “seeks to mitigate deviations of inflation from its longer term goal and deviations of employment from the Committee’s assessments of its maximum level”²³, the new strategy added a critical asymmetry that “the Committee’s policy decisions must be informed by assessments of the shortfalls of employment from its maximum level.”²⁴

The 2012’s strategic plan’s emphasis on “deviations” of employment from maximum reflected a symmetric view on employment and stemmed, in part, from the Fed’s long held embrace of the Phillips Curve as an important determinant of inflation dynamics. Specifically, the Phillips Curve view adopted by the Fed meant that a robust economy where employment was above trend or some natural level (or the unemployment rate was below its natural rate) caused inflation to

²² Board of Governors of the Federal Reserve (2012).

²³ Board of Governors of the Federal Reserve (2012).

²⁴ Board of Governors of the Federal Reserve (2020).

rise while employment deviations below the natural level would exert downward pressure on inflation.

Importantly, the shift to shortfalls combined with the Fed's perception that maximum employment was compatible with stable low inflation and that the Phillips Curve was flat effectively discarded the Fed's traditional reliance on preemptive monetary tightening. The Fed's preemptive tightening in anticipation of higher inflation—"leaning against the wind"—had been a critical tool the Fed had used in managing inflationary expectations.

IV. Assessing the Flaws in the New Strategic Framework

Our initial critiques of the NSF in October 2020 have proved merited.

First, we emphasized that the primary impetus driving the Fed's strategic review was the Fed's overly narrow focus of the review on the ELB as a prime culprit preventing inflation from returning to target through its impact on inflationary expectations. In doing so it dismissed or ignored other factors that may have been important.²⁵

Second, we emphasized how the asymmetries and lack of constructive guidelines in the FAIT favored higher inflation. Combined with the broadened employment objective, this would reinforce the Fed's discretionary approach to monetary policy and steer the Fed further away from rules-based guidelines that could have been useful for avoiding past policy mistakes.

Third, we noted that the NSF's de-emphasis on preemptive tightening would undercut a traditional mainstay of the Fed's efforts to anchor inflationary expectations.

Fourth, we viewed the Fed's heightened reliance on using forward guidance to manage inflation expectations as highly problematic and risky.

²⁵ See Plosser (2003) for a critique of the widely repeated fears of deflation.

Fifth, the lack of clarity of the objectives and implementation of the NSF complicated rather than simplified its communications.

We concluded that it would only be a matter of time before undesirable outcomes and problems would emerge. These concerns are detailed below.²⁶

a. The Fed's excessive fears of low inflation and falling inflationary expectations

The Fed's overstated fears of low inflation, falling inflationary expectations and the ELB stem in part from its misperception of why inflation remained low following the GFC.

Following the GFC, the Fed's SEPs projected a strong economic recovery and higher inflation, reflecting its sustained zero interest rates and LSAPs combined with the fiscal stimulus of the American Recovery and Reinvestment Act of 2009. When the recovery was not as robust as anticipated and inflation remained subdued, the Fed ultimately simply attributed it to a flatter Phillips Curve than it had previously presumed. This *ex post* explanation was inadequate, and failed to explain why the Fed's model hadn't worked. There are at least two likely alternative explanations.

First, the negative impacts on the monetary transmission channels imposed by changes in aspects of the Fed's operating framework and practices offset the zero interest rates and LSAPs and fiscal stimulus. Plosser (2019) described how the Fed's paying IOR, increased capital and liquidity standards, and LSAPs that dominated and interrupted short-term funding markets. Supporting this view, M2 money velocity collapsed during the GFC and never fully recovered.

²⁶ More recently Eggertsson and Kohn (2023) argue that the new framework led the Fed to pursue excessively easy monetary policy that generated higher inflation. Their argument focuses on the Fed placing maximum inclusive employment as a higher priority than inflation as the primary driver of the Fed's new strategy. Their analysis of the Fed's inflationary mistakes was based on a neo-Keynesian framework in which the Phillips Curve played a central role, but which the Fed explicitly downplayed.

Bank lending to businesses and households fell and didn't recover their pre-GFC levels until 2015.

Second, the GFC's severe blow to household net wealth and perceived permanent income led consumers and businesses to raise saving and slowed aggregate demand. Over 8 million jobs were lost (5.4 percent) and the unemployment rate more than doubled to 10 percent, the highest since the Great Depression. Household net worth fell 15.8 percent reflecting maximum declines of 25.5 percent in home values and 46.9 percent in the S&P500. Approximately \$1.4 trillion of outstanding home equity loans became a severe financial burden as loan-to-value ratios soared, weighing on household cash flows and balance sheets. Commercial banks were crippled and the largest banks required capital infusions from the government. Before the GFC, the housing bubble had fueled debt-financed consumption that lowered the rate of personal saving below 3 percent. Following the crisis, the rate of personal saving rose sharply as households replenished their balance sheets. It took approximately five years of gradual gains in employment and personal income and low interest rates to restore household balance sheets and confidence in future prospects.

Even though consumption, aggregate demand and inflation picked up in the second half of the decade, the Fed continued to focus on the sub-2 percent PCE inflation and the risks falling inflationary expectations could lead to encounters with the ELB. These Fed fears were explained in specified models that posed the ELB as an existential threat. Amid stable moderate inflation and inflationary expectations relatively anchored near 2 percent, the Fed seemed to be fighting the last battle.

The Fed did not explain why it took seriously the idea modest sub-2 percent inflation would elicit a downward spiral in inflationary expectations. This was particularly odd since through most of the decade the Fed believed inflation expectations were reasonably well anchored near target, and it seemed confident in its ability to manage inflationary expectations. This calls into

question the basic premise for the need for a new strategic framework characterized by asymmetries that favored higher inflation.

b. The new FAIT.

Whereas the 2012 consensus statement's 2 percent inflation target was chosen because it would be simple to communicate and widely understood as the Fed's commitment to low inflation and would help anchor inflationary expectations, the FAIT introduced unnecessary complexity and asymmetry that tilted toward higher average inflation. The asymmetry undermined the basic premise of the price stability commitment and muddled the Fed's inflation objective. The Fed's adoption of the FAIT reinterpreted the Fed's longer-run inflation goal and provided it the flexibility to run above-2 percent inflation to lift inflationary expectations and stimulate aggregate demand, after which the Fed could pursue a monetary policy consistent with its target.

The FAIT's lack of numeric guidelines for its makeup strategy added confusion and uncertainty about the Fed's intermediate-term goals. Powell (2020) explicitly dismissed the idea that the goal of an average inflation rate of 2 percent had any specific meaning or accountability associated with it, stating "In seeking to achieve inflation that averages 2 percent over time, we are not tying ourselves to a particular mathematical formula that defines the average." Such statements undermine the Fed's credibility and its commitment to its goals thus, reinforcing its discretionary desires.²⁷

The FAIT's inflation bias and its complexity undermined the public and financial markets' ability to gauge the Fed's intentions, damaging the Fed's ability to credibly manage inflationary expectations. How can the Fed credibly anchor inflation expectations to 2 percent when its strategy clearly gives the impression that it favors above 2 percent inflation? The NFS appears "

²⁷ Clarida (2020) stated that "inflation that averages 2 percent over time" represents an "ex-ante aspiration."

c. The enhanced employment mandate

Broadening the Fed's maximum employment mandate to be inclusive and shifting to "shortfalls" from the Committee's assessment of its maximum level had several undesired implications. It placed a higher priority on employment and tilted monetary policy toward monetary ease. It also expanded the Fed's role to encompass labor market objectives beyond the scope of monetary policy.

Similar with the Fed's January 2012 consensus statement, the NSF emphasizes that the maximum employment objective cannot be defined by a numeric target and that employment is affected by an array of non-monetary factors.²⁸ Powell (2020) acknowledged the important roles of education and skills training, health care, and fiscal policy on employment. Labor markets are also influenced by demographics, taxes and regulations on businesses.

The unobservable aspect of a maximum employment mandate has always made the Fed's task difficult, and making the objective inclusive adds an extra layer of difficulty and challenge. How will the Fed interpret trends in employment-to-population ratios, participation rates and the employment/unemployment of groups of people that were considered challenged? What is the mechanism by which monetary policy can shape the desired outcomes? Even if such mechanisms exist, are there tradeoffs that impact the Fed's other goals?

An inclusive labor market for all citizens is an important and desirable feature of an efficient market economy. Lifting employment of under-privileged 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, and singling it out gives the impression that monetary policy can effectively address these laudable objectives. It can't. Trying to achieve these broader goals through monetary policy would involve unintended side effects and risk higher inflation.

²⁸ The Fed's Statement of Longer-Run Goals and Monetary Policy Strategy: "The maximum level of employment is a broad-based and inclusive goal that is not directly measurable and changes overtime owing largely to nonmonetary factors that affect the structure and dynamics of the labor market. Consequently, it would not be appropriate to specify a fixed goal for employment..." (Board of Governors of the Federal Reserve System (2020)).

d. Discarding Preemptive Monetary Tightening and Relying on Forward Guidance

The Fed's shift to focusing on shortfalls coupled with its assessment that the Phillips Curve is flat implied it had walked away from its practice of preemptive tightening: "in the absence of evidence that price inflation is running or is likely to run persistently above mandated-consistent levels...will not, under our new framework, be a sufficient trigger for policy action" (Clarida 2020). Effectively, this shifted the focus to managing inflationary expectations.

This interpretation was reinforced by the Fed's press release following its September 2020 FOMC meeting immediately following the enactment of the NFS: "The Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent and expects it will be appropriate to maintain this target range until labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2 percent and is on track to moderately exceed 2 percent for some time."²⁹

Downgrading the relevance of pre-emptive monetary tightening without a clear understanding of the inflation process and lags between monetary policy tools and inflation seems risky. The Fed's acknowledgement that the Phillips Curve had become an unreliable predictor of inflation had evolved over a long period, and it is wise that Fed Chair Powell and other members finally downgraded its importance. 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 for some time. While taking this step, however, the Fed has not replaced the Phillips Curve with any framework or model for predicting inflation, except to emphasize the importance of inflationary expectations in the inflation process.

The Fed stressed that keeping inflation expectations well-anchored would require a heightened role for forward guidance. In our early assessment of the Fed's NSF, we questioned the reliability of forward guidance as an independent monetary policy tool.³⁰ This seemed to be a

²⁹ Board of Governors of the Federal Reserve System (2020b)

³⁰ Plosser (2013)

risky tool, particularly in the absence of a clear understanding of the inflation process. We noted that if the Fed truly believed it could credibly manage inflationary expectations, why did it fear a collapse in inflationary expectations in the first place? This problem became clear in 2021 and early 2022 when the Fed's forward guidance failed to constrain inflationary expectations in the absence of interest rate increases. It is not surprising that expectations rose after the Fed made clear that unemployment rates were not closely tied to inflation (that is the Phillips Curve was flat) so its traditional path to reducing inflation was weakened. Oddly enough, in 2022 the Fed restored the Phillips Curve as an explanation for why it needed to be more restrictive.

e. Fed Communications

The Fed's NSF detracted rather than improved its communications by fundamentally changing the Fed's reaction function as it has come to be understood by the public and the markets, generating a wide range of interpretations that lack clarity. Communicating the Fed's assessment of inflationary expectations and at the same time its strategy of using forward guidance to manage those expectations would be difficult. The Fed's communications were stuck in the middle of an unhealthy relationship between the Fed and financial markets, in which the Fed looks to markets for indicators of expectations at the same time the markets seek advice from the Fed on its future policies.³¹

The vagaries of the NSF also complicate and add uncertainties to the Fed's quarterly SEP, which are thought of as forward guidance, but the conditionality of their projections is frequently misinterpreted and ignored. The appropriate policy paths constructed by participants for the NSF will have to implicitly contain guesses as to if and how any makeup strategies will be implemented. Suggestions for modifying the SEPs will be described in Section VI.

V. The performance of the new strategic framework

³¹ See Levy (2019)

The high inflation of 2021 quickly revealed the flaws in the Fed's new strategy and its biased premises that influenced monetary policy. The Fed failed to respond to the soaring inflation and unanchored inflationary expectations or the widespread signs of labor market tightness and inflationary wage gains. It relied on discretion afforded to it in language of the NSF and ignored simple rules that universally signaled that a higher policy rate was appropriate.

The Fed's inappropriate policy responses reflected its misunderstanding of the inflation process and its unwillingness to acknowledge that the rise in inflation resulted from the excess demand generated by accommodative monetary policy and deficit spending well and not just the supply constraints stemming from the pandemic. As inflation kept rising the Fed continued to project that maintaining a fed funds rate appreciably below the inflation rate would result in inflation quickly returning to 2 percent.³²

The Fed's preconceived notions that inflation would stay low as it had throughout the post-GFC expansion led it to attribute the higher inflation to transitory supply shocks while all but ignoring the rapid acceleration of aggregate demand. Even if the new FAIT had included numeric guidelines, the Fed's calculations for the inflation makeup strategy would have been driven by its projections that inflation would quickly fall to 2 percent. By May 2021 expectations had become unanchored, with market-based inflation expectations rising to 2.5% and the University of Michigan one-year inflation expectation reaching 4.6 percent and its 5-year expectation reaching 3.0 percent. Closely followed measures developed by the Fed, including the Federal Reserve Bank of New York's Underlying Inflation Gauge (3.5 percent) and the Federal Reserve Bank of Cleveland's trimmed-mean CPI (5.0 percent) indicated inflation momentum.

Even as PCE inflation soared above 4.5 percent, Powell expressed support of the NSF at the highly visible Jackson Hole symposium in August 2021: "The changes we made last year to our Statement on Longer-Run Goals and Monetary Policy Strategy are well suited to address today's

³² See Levy (2024)

challenges."³³ There were no dissents among FOMC members and there was a startlingly close bunching of FOMC participants projections that inflation would fall quickly in the Fed's SEPs and no Fed member estimated the need to raise interest rates even to 2 percent. This lack of diversity of thought among FOMC members reflects the need for improved risk management tools. It also likely reflects a mounting "circle the wagons" mentality in response to the pandemic crisis.

As the Fed's communications were increasingly strained by realities, the Fed stubbornly continued to attribute the higher inflation to large price increases of a small number of items.³⁴ As such, it argued that it was appropriate to keep rates at zero since the unemployment rate remained high and its employment goal had not been achieved.

Discarding its traditional preemptive tightening was effectively a shift toward more discretion, and the Fed's bad judgment proved costly. As inflation continued to rise, the Fed did not refer to the Taylor Rule or other simple rules that clearly showed that anchoring the Fed funds rate at zero was inappropriate as inflation soared.

The Fed's reliance on forward guidance was ineffective in constraining inflationary expectations without raising interest rates. Expectations began declining only when Powell announced that the Fed would be raising rates and the Fed began doing so. As Plosser (2013) had warned, forward guidance as an independent policy tool is flawed theoretically and in practice. The Fed cannot exercise discretion and simultaneously expect forward guidance to be effective.

The NSF did not include any strategy for the Fed's balance sheet. The Fed provided no clear explanation of its ongoing purchases of US Treasuries and MBS. This had many undesired side effects, including large subsidies to real estate (including higher rental costs) and distortions to short-term funding markets. The Fed stumbled on the timing and sequencing of unwinding its

³³ Powell (2021)

³⁴Board of Governors of the Federal Reserve Board (2021) and Brainard (2021).

asset purchases and raising rates, delaying its first interest rate increase (Waller 2023). This forced significant adjustments in financial markets.

As financial markets speculated on how much the Fed would need to raise interest rates, the Fed's communications were in a catchup mode. The Fed's estimates of the appropriate policy rate needed to achieve its inflation objective and its forward guidance proved far off-the-mark: the Fed's median dots for the appropriate Fed funds rate for year-end 2023 rose from 1.6% in its December 2021 SEP to less than 3 percent in its March 2022 SEPs and less than 4 percent in its June SEPs (Levy (2024)). Even these radically changed estimates fell far below what unfolded.

Inflation has subsided significantly and recent Fed statements that it remains committed to maintaining a restrictive monetary policy to reduce inflation to 2 percent are welcomed. However, the Fed also confirms the asymmetry of the FAIT: it has no intention to make up for the high inflation with a period of sub-2 percent inflation so the price level has risen substantially.

VI. The new review: suggestions for research and rebooting the framework

The last four years highlight how the Fed's strategic framework is adrift and its NSF is ill-suited for the task. The upcoming strategic review provides an opportunity for the Fed to step back and think through its objectives and its capabilities and limitations. The NSF envisioned monetary policy as having much greater capacity to fine-tune and manage expectations through forward guidance than it is likely to possess. If so, the review should consider frameworks and strategies that are less ambitious and more robust. This is likely to require the Fed scaling back the expectations of the public and elected officials as to what the Fed can or should be doing rather than continuing to expand its authorities.

First, the Fed should conduct a more thoughtful and thorough review of the inflation process and dynamics as it relates to monetary policy's tools.

Relying on an ever changing or time varying Phillips Curve is not adequate basis for understanding inflation or the Fed's objective of attaining its 2 percent inflation target. Is the Philips curve "flat" as the Fed argued in 2019 to explain the low inflation of the post-GFC period, or is steepening, as some Fed members argued to explain the 2021-2023 current low unemployment rate and inflation pressures? If the Phillips Curve is unstable, what is a better and more reliable framework for predicting inflation and conducting monetary policy?

The Fed needs to analyze key factors that affect aggregate demand, including fiscal policy, the monetary transmission mechanisms and how they may be affected by operational changes including paying IOR, and the Fed's asset purchases and its balance sheet. Alternative frameworks for achieving the Fed's inflation target, such as focusing on nominal GDP and the role of money supply, should be considered.

A deeper understanding of why inflation remained low during the post-financial crisis recovery is needed. It significantly increased its projections of economic growth and inflation in response to the American Recovery and Reinvestment Act of 2009 accommodated by the Fed's zero interest rates and QE, but barely changed its projections following the unprecedented \$5 trillion increase in deficit spending accommodated by the Fed in 2020-2021.³⁵ Following the GFC, to what extent were consumption and aggregate demand dampened by the jarring impacts of the deep recession and collapse in home values and the stock market on consumers' pocketbooks and perceptions of well-being? Following the pandemic, to what extent did these factors have the opposite effect of buoying spending and aggregate demand?

Consideration of alternative frameworks for conducting monetary policy should include a focus on nominal GDP, as recently discussed by Athanasios Orphanides (2024) and Peter Ireland

³⁵ Deficit spending was increased more than 25 percent of GDP in response to the pandemic, and the Fed effectively purchased roughly one-half of the new debt. Why did this have very little impact on the Fed's projections? The \$1.9 trillion American Rescue Plan of March 2019, a 10% increase in deficit spending, primarily income support payments to households in April 2021, had no noticeable effect on the Fed's SEPs in June 2021 or the Fed's senior staff forecast.

(2021, 2024). Their approaches avoid some of the pitfalls of the Phillips Curve and would have avoided major policy mistakes of the past, including the 2020-2021 inflation. Other frameworks that focus on aggregate demand and supply, including money supply should be explored.³⁶

The Fed seems to view its balance sheet and asset purchases sometimes as a financial stability tool, sometimes as a fiscal policy tool to conduct credit allocation, and sometimes as a monetary policy tool, but it does not provide a framework or structure that describes when and how should it be used.³⁷ If the balance sheet is an important tool even in normal times (as opposed to emergencies such as at the ELB), how does it complement or substitute for interest rate policy? In 2021, the Fed focused financial markets on the timing and sequencing of its balance sheet tapering and the beginning of its interest rate increases, but never articulated the influences of these monetary policy tools. A more thorough review of the Fed's balance sheet policies is clearly called for.

Second, the Fed needs a clearer interpretation of its mandate.

Correcting the asymmetric and overly complex interpretations of its inflation and employment objectives should be a top priority. The excessive word smithing and efforts to fine-tune the objectives muddles the understanding of the Fed's goals and complicates its strategy. The Fed should strive for balance, clarity, and robustness.

The FAIT was based on the Fed's concerns about the ELB, reflecting its worries about low inflation, falling inflationary expectations, and its estimates of a secular decline in the neutral rate of interest. Recent events suggest that a more balanced interpretation is needed. The Fed's fears that sub-2 percent inflation would risk a downward spiral in inflationary expectations need to be reassessed. Despite the fact that some theoretical models found such

³⁶ See, for example, Bordo and Duca (2023)

³⁷ Goodfriend and King (1988) usefully characterize monetary policy as variations in the size of the balance sheet and credit policy which is captured by changes in the composition of assets held. See Goodfriend (1994) and Plosser (2022).

downward slides were possible, these fears are not supported by the inflation data or measures of inflationary expectations, which were relatively stable.³⁸

The Fed could consider returning to a 2 percent inflation targeting regime. The FAIT should be discarded and replaced by a balanced interpretation, much like the 2012 consensus statement. This would remove the upward bias in inflation, clarify the Fed's inflation intentions and reduce ambiguities. The Fed's delayed responses to the inflation in 2021 highlighted the flaws in the FAIT and the perspective adopted by the Fed. The Fed might also consider included numerical bounds as guidelines around its 2 percent target. This could help convey a more realistic view of the uncertainty and the noise in the inflation data. On the other hand, simply specifying band does not really describe how the Fed would be expected to react at the boundaries.

Alternatively, the Fed could explore a symmetric price level targeting regime. The would be closer to an average inflation target but would require offsetting persistent periods of sub-2 percent and over 2 percent inflation. Such a scheme does have useful properties but may be difficult to implement politically, particularly.³⁹

Third, the Fed's review should consider systematic policy rules as guidelines for the conduct of monetary policy.

John Taylor has, of course, long argued that a more systematic or rule-like approach to monetary policy could substantially improve outcomes.⁴⁰ Thinking about rules should not conjure up rigid formulas that dictate or lock in monetary policy. Rather, systematic rules can provide important inputs and guidelines for the conduct of policy and discussing rules and

³⁸ For example, during the 4 years 2016-2019 the University of Michigan consumer survey showed monthly one-year ahead expected inflation rates fluctuating between 2.2 percent and 3.0 percent with a yearly average for each of the four years fluctuating between 2.5 percent and 2.8 percent beginning in 2016 at 2.4 percent and ending in 2019 at 2.6 percent.. The less volatile monthly five-year ahead expected inflation rate fluctuated between 2.3 and 2.7 percent while the yearly average for each of the four years varied between 2.2 and 2.5 percent beginning in 2016 at 2.5 percent and ending at 2.5 percent in 2019.

³⁹ Plosser (2019) briefly discusses the pros and cons of price level targeting.

⁴⁰ See Taylor (1993, 1999, 2017) for example.

reaction functions can be a useful way of improving communications as well as outcomes.⁴¹ They can add clarity and transparency about policy and the Fed’s approach to data dependent policymaking. A more direct discussion about policy decisions put in the context of rules would go far in helping the public and markets understand monetary policy and policy choices. A more robust discussion of this topic would be a welcome addition to the review and to the strategic framework.

An assessment of systematic rules would be beneficial compared to the highly theoretical, untested and complicated structures and formulations that underlie the NSF. The Fed includes a description and current estimates of some rules in its semi-annual Monetary Policy Report, but the attached text highlights the problems and limitations of the rules rather than the benefits they may provide. Research shows that such guidelines would have helped avoid major policy mistakes. An even-handed assessment of such rules, and how they may be used to improve the conduct of monetary policy would be a welcomed addition to this strategic review.

Fourth, the Fed should dismiss the notion that forward guidance is an appropriate or effective independent tool of policy.

Using forward guidance as an independent tool not supported by interest rate and balance sheet policies is flawed in theory and makes little sense practically. It can be confusing and counterproductive. Relying solely on forward guidance when the Fed simultaneously touts its willingness to be flexible and data dependent complicates the Fed’s communications and may undercut its credibility. The 2021-2022 experience showed that the Fed’s forward guidance unsupported by changes in monetary policy or the credible commitment use its tools proved inadequate in managing expectations in 2021-2022. A careful and even-handed assessment of forward guidance will confirm that its impacts and influences are unreliable when conducted independent of traditional tools of monetary policy.

⁴¹ See Plosser (2014) and Lacker and Plosser (2022) for discussions of how the Fed might incorporate systematic rules in the Fed’s policy process.

Fifth, the Fed should clarify the quarterly SEPs and consider ways to improve them⁴²

The SEPs are closely scrutinized and are critical to the Fed's communications and forward guidance, but they are often misunderstood and misinterpreted. The Fed clearly states (in the footnotes of its quarterly summary projection tables) that the economic and inflation projections are *conditional* on the appropriate policy rate of each FOMC member that be very different and estimates of the funds rate are not a commitment to any policy path. Yet the SEPs often create confusion, in part, because commentary tends to focus on the median points. Doing so does not necessarily correspond to any coherent economic projection.

However, there can be exceptions to this when appropriate policies paths are highly concentrated. As inflation soared during 2021, FOMC members unanimously estimated that the *most appropriate monetary policy* was to keep the Fed funds rate anchored to zero. Even as the Fed raised rates in 2022, the FOMC members estimated that the most appropriate policy was to keep the funds rate below the inflation it projected. The Fed's assessments of appropriate policy were wildly inconsistent with estimates of simple rules for monetary policy.

These observations suggest several ways to improve the SEPs. The Fed has data on different members' projections and estimates. Associating the dots with individual projections (without attributing the projections to member names) could help clarify the reaction functions of individual Fed members and improve communications. Second, since the Fed perceives that its balance sheet is an important monetary policy tool, the strategic review should seek ways convey information about the balance sheet in the SEPs. Since the Fed uses the balance sheet for many different purposes, this will not be an easy task. Moreover, FOMC members may not

⁴²The SEPs were instituted in 2009 to provide more information about economic and financial conditions and monetary policy than the prior semi-annual projections. In 2012 the SEPs began including FOMC members' estimates of the year-end fed funds rate they deem to be appropriate to achieve their economic and inflation projections. The FOMC members' estimates are shown as a median, range and central tendency that eliminates the three highest and lowest estimates. The member estimates of the appropriate fed funds rates are shown separately as "dots" but the dots are not related to each member's economic and inflation projections.]

have a common view of what is happening to the balance sheet and what channels it may be working to shape inflation and employment goals.

Third, the Fed may consider augmenting the SEPs with an annual exercise that included alternative scenarios that could be used for risk management purposes. This has been advocated by Bordo, Levin and Levy (2019). The full SEP report now includes valuable information on the FOMC participants' perception of risk, but they get little attention. There are several ways to develop the alternatives (Levy 2019 and 2024 and Davis 2024). For example, an annual scenario analysis could be developed that could complement the SEPs and provide a framework for risk management in monetary policy deliberations.

References

Abraham, Katharine G. and John Haltiwanger, 2019. "Conference on Monetary Policy Strategy, Tools, and Communication Practices (A Fed Listens Event), Federal Reserve Bank of Chicago, June 4.

Bernanke, Ben S. 2011. "The Effects of the Great Recession on Central Bank Doctrine and Practice". Federal Reserve Bank of Boston, October 18.

_____. 2012. "Monetary Policy Since the Onset of the Crisis". Speech at Federal Reserve Bank of Kansas City Jackson Hole Symposium, August 31.

Board of Governors of Federal Reserve System 2012. "Statement on Longer-Run Goals and Monetary Policy Strategy", January 26.

Board of Governors of the Federal Reserve System (2018). "Federal Reserve to review strategies, tools, and communications practices it uses to pursue its mandate of maximum employment and price stability", November 15.

Board of Governors of the Federal Reserve System 2020. "Statement on Longer-Run Goals and Monetary Policy Strategy, adopted August 27.

Board of Governors of the Federal Reserve System 2020. FEDERAL RESERVE Press Release, September 16.

Board of Governors of the Federal Reserve 2021. "Monetary Policy Report – July 2021". Submitted to the Congress on July 9, 2021 pursuant to Section 2B of the Federal Reserve Act"

Board of Governors of the Federal Reserve System (2022)

Bordo, Michael D. and Duca, John V. 2023. "Money Matters: Broad Divisia Money and the Recovery of Nominal GDP from the Covid-19 Recession. NBER Working Paper 31304, June.

Brainard, Lael 2019. "The Disconnect between Inflation and Employment in the New Normal". National Tax Association 49th Annual Spring Symposium, May 16.

_____. 2021. "Assessing Progress as the Economy Moves from Reopening to Recovery". Annual Meeting of the Aspen Economic Strategy Group, July 30.

Clarida, Richard H. 2019. "The Federal Reserve's Review of Its Monetary Policy Strategy, Tools, and Communication Practices". U.S. Monetary Policy Forum, University of Chicago Booth School of Business, February 11.

Clarida, Richard H. 2020. "The Federal Reserve's New Monetary Policy Framework: A Robust Evolution". The Peterson Institute for International Economics. August 31.

Davis, Steven J. 2024, "Discussant Remarks" on Mickey D. Levy, "The Fed: Bad Forecasts and Misguided Monetary Policy. In Getting Monetary Policy Back on Track, edited by Michael D. Bordo, John H. Cochrane and John B. Taylor, 291-308. Stanford, CA: Hoover University Press. 2024 Hoover Monetary Policy Conference

Eggertsson, Gauti B and Kohn, Donald 2023, "The Inflation Surge of the 2020s: The Role of Monetary Policy", Hutchins Center Working Paper 87, The Brookings Institution, July 25.

Friedman, Milton 1968. "The Role of Monetary Policy". Presidential Address at the Eightieth Annual Meeting of the American Economic Association, The American Economic Review, Volume LVIII No. 1, March.

Goodfriend, Marvin 1994. "Why We Need an "Accord" for Federal Reserve Credit Policy: A Note". Journal of Money Credit and Banking, Vol. 26 issue 3, 572-80.

Goodfriend, Marvin and King, Robert 1997. "The New Neoclassical Synthesis and the Role of Monetary Policy". NBER Macroeconomics Annual.

Ireland, Peter. 2024. "Update on Monetary Conditions: Spring 2024". Shadow Open Market Committee, April.

Lacker, Jeffrey M. 2012. "Understanding the Interventionist Impulse of the Modern Central Bank". Cato Journal, Vol. 32, No2 (Spring/Summer), 247-253.

_____, "A Look Back at the Consensus Statement". Cato Journal 40, no.2 (Spring/Summer), 285-319.

Lacker, Jeffrey M. and Plosser, Charles I. 2022. "The Fed Should Talk About the Prescriptions of Systematic Policy Rules". Hoover Institution Working Paper 22129, November 11.

Laubach, Thomas and Williams, John C. 2016. "Measuring the Natural Rate of Interest Rates. Business Economics, Vol. 51, 57-67.

Levy, Mickey D. 2019. "The Fed and Financial Markets: Suggestions to Improve an Unhealthy Relationship". In Strategies for Monetary Policy, edited by John B. Taylor and John H. Cochrane, May.

_____. 2021. "Rising Inflation: Granular Data Analysis Shows Broadening Dispersion of Price Increases". Berenberg Capital Markets, November.

_____. 2024, "The Fed: Bad Forecasts and Misguided Monetary Policy". In Getting Monetary Policy Back on Track, edited by Michael D. Bordo, John H. Cochrane and John B. Taylor. Stanford, CA: Hoover Institution Press.

Levy, Mickey D. and Plosser, Charles 2020, "The Murky Future of Monetary Policy". Hoover Institution Economics Working Paper 20119, October. Republished in

_____. 2022, "The Murky Future of Monetary Policy." Federal Reserve Bank of St Louis Review 104, no. 3 (Third Quarter 2022), 178-88.

Nelson, Edward 2021. "The Emergence of Forward Guidance as a Monetary Policy Tool". Federal Reserve Board, Finance and Economics Discussion Series 2021-033.

Orphanides, Athanasios 2024. "Enhancing Resilience with Natural Growth Targeting". Shadow Open Market Committee, April.

Plosser, Charles I. 2003. "Deflating Deflationary Fears". Shadow Open Market Committee, November.

_____. 2010, "The Federal Reserve System: Balancing Independence and Accountability". World Affairs Council of Philadelphia, February 17.

_____. 2013. "Forward Guidance". Stanford Institute for Economic Policy Research Annual Meeting, February 12.

_____. 2014. "Systematic Monetary Policy and Communication", Economic Club of New York, June 24.

_____. 2019 "A Cautionary Note on Price Level Targeting". Hoover Institution Defining Ideas, May 1.

_____. 2022. “Federal Reserve Independence: Is It Time for a New Treasury-Fed Accord”. Essays Honoring Marvin Goodfriend, Federal Reserve Bank of Richmond.

_____, (2021) “The Fed’s Risky Experiment.” Hoover Institution Economic Working Paper 21116, June 18.

Plosser, Charles and Lacker, Jeffrey M. 2022. The Fed Should Talk About the Prescriptions of Systematic Policy Rules. Hoover Institution Economics Working Papers 22129, November 11.

Powell, Jerome 2019a. “Opening Remarks”. Conference on Monetary Policy Strategy, Tools, and Communications Practices”, Federal Reserve Bank of Chicago, June 4.

Powell, Jerome H. 2019b. “The Economic Outlook”. Joint Economic Committee, U.S. Congress, November 13.

_____, 2020, “New Economic Challenges and the Fed’s Monetary Policy Review”. Address at Navigating the Decade Ahead: Implications for Monetary Policy, a Federal Reserve Bank of Kansas City Economic Symposium, August 27.

_____ 2021. “Monetary Policy in a Time of COVID”. Address at Macroeconomic Policy in an Uneven Economy, a Federal Reserve Bank of Kansas City Economic Symposium, August 27.

Reifschneider, David and Williams, John C. 2000. “Three Lessons for Monetary Policy in a Low Inflation Era”. *Journal of Money Credit and Banking*, 32, no. 4, pp 936-66.

Sims, Eric and Wu, Jing Cynthia 2019. “Evaluating Central Banks’ Tool Kit: Past, Present and Future”. “Conference on Monetary Policy Strategy, Tools, and Communication Practices (A Fed Listens Event), Federal Reserve Bank of Chicago, June 4.

Summers, Laurence H. 2015, “Demand Side Secular Stagnation, *American Economic Review*, Vol 205, No. 5, May, and Summers 2016, “The Age of Secular Stagnation, *Foreign Affairs*, February.

Svensson, Lars E. O. 2019. “Monetary Policy Strategies for the Federal Reserve”. Monetary Policy Strategy, Tools, and Communications Practices (A Fed Listens Event), Federal Reserve Bank of Chicago, June 4-5

Taylor, John B. 1993. “Discretion versus policy rules in practice”. *Carnegie-Rochester Conference Series on Public Policy*, 39, North-Holland Publishing, pp 195-214.

_____ 1999. “Introductory Remarks pm Monetary Policy Rules”. In *Monetary Policy Rules*, edited by John B. Taylor, University of Chicago Press.

_____ 2022. “It’s Time to Get Back to Rules-Based Monetary Policy”. Hoover Institution Economics Working Paper 22111, May 1.

Weiland, Volker 2024. "Taylor Rules and the Inflation Surge: The Case of the Fed". Goethe University Institute for Monetary and Financial Stability Working Paper Series No. 201.

Waller, Christopher J. 2023, "Reflections on Monetary Policy in 2021". In *How Monetary Policy Get Behind the Curve—And How to Get It Back*, edited by Michael D. Bordo, John H. Cochrane and John B. Taylor, 333040. Stanford, CA: Hoover Institution Press.

Woodford, Michael 2013. "Forward Guidance by Inflation-Targeting Central Banks, CEPR Discussion Papers 9722.

_____ (2012). ", " paper presented at "*The Changing Policy Landscape*," a symposium sponsored by the Federal Reserve Bank of Kansas City, held in Jackson Hole, Wyo., August 30-September 1.

Yellen, Janet 2019, "Former Fed Chair Janet Yellen on why the answer to the inflation puzzle matters". Hutchins Center Conference "What's (not) up with inflation, Brookings Institution. October.